

DMCC



HEALTH, SAFETY AND ENVIRONMENT GUIDELINES

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CHAPTER 1 FOREWARD

DMCC has assisted with establishing Dubai as a leading centre for trading international commodities and, at the date of publication of these HSE Guidelines, the DMCC Free Zone is the world's fastest-growing free zone. Furthermore, DMCC is a thriving Master Community and considered a key destination for business, leisure and living within the Emirate of Dubai.

DMCC regulates, promotes and facilitates trade across a range of commodities from gold, diamonds and precious metals to tea, food and industrial materials. As home to numerous multinationals, SMEs and start-ups, DMCC connects large numbers of businesses and individuals with the world-class services, leading infrastructure and vibrant community they need to thrive and succeed.

DMCC plays a critical role in driving continued economic development, whilst acting as a trusted partner in support of Member Companies established in and operating out of the DMCC Free Zone.

To be a global leader in the world of business, DMCC recognises the importance of the safety and well-being of all stakeholders and the positive impact DMCC has on the communities in which it operates.

As part of DMCC's objective to attain operational excellence, the organisation is and remains fully committed to making its business, the DMCC Free Zone and the Master Community a safe and healthy place to work and visit. This can be achieved only through world class standards in health, safety and environmental (HSE) performance.

DMCC's excellent record on HSE has been achieved by working in partnership with Member Companies and residents as well as implementing robust rules and controls and careful auditing procedures.

DMCC will continue to engage with all stakeholders and users of the DMCC Free Zone and the Master Community in order to work closely together to achieve world-leading HSE practices.

Paul Sumner – CMIOSH
Senior HSE Manager, DMCC

CHAPTER 2 DMCC HSE STATEMENT

It is DMCC's policy to conduct its affairs and commercial activities with due regard for the health, safety and welfare of:

- its own employees;
- all stakeholders associated with the Master Community and DMCC Free Zone; and
- all visitors to the Master Community and other members of the public.

DMCC is committed to the continual improvement of its HSE Policy through active engagement with and encouraging feedback from its own employees, Sub-Developers, Member Companies, Owners, Owner's Associations and the wider DMCC Free Zone and Master Community and to limit the impact within the DMCC Free Zone and Master Community of regulated business and commercial activities upon the environment.

The purpose of the HSE Policy is to establish a framework to promote a pro-active approach in the prevention of accidents, incidents, ill health, dangerous occurrences and environmental damage within the DMCC Free Zone and Master Community. Preventative measures will be implemented so far as such are reasonably practicable, by the identification of hazards, the elimination of foreseeable risk, the management of residual risk and environmental impacts.

DMCC's objective is to provide safe systems of work whilst ensuring adherence to all relevant regulations, standards and codes of practice. DMCC shall not, however, be liable for any failure by any Community User to abide by the applicable local laws and regulations of Dubai and the United Arab Emirates.

To comply with its legal and moral responsibilities, DMCC has established key objectives including:

- zero work-related accidents and incidents involving DMCC employees and the protection of the environment as a result of our work activities;
- increased awareness and prevention of accidents and incidents throughout the DMCC Free Zone and Master Community generally;
- establishing a highly effective HSE management system that drives continual review and improvement of the HSE Policy;
- continual improvement of HSE performance within the DMCC Free Zone and Master Community,
- developing and promoting an exceptional safety culture where people embrace Ownership of HSE both for themselves and for others.

To achieve this, DMCC will:

- ensure that DMCC executive management, directors, managers and employees demonstrate their commitment to all HSE issues in their day to day actions and decisions, whilst embracing HSE as a core value within the business;
- regularly engage with its employees, stakeholders and the DMCC Free Zone and Master Community on HSE related issues;
- implement high standards of compliance with HSE Policies in order to promote and assure the best possible HSE practice, whilst proactively identifying and eliminating hazards and risks both internally and throughout the DMCC Free Zone and the Master Community;
- monitor and report on HSE performance within the DMCC Free Zone and Master Community;
- periodically review and revise performance and management objectives and targets;

Through training, leading by example and encouraging employees and stakeholders, to report accidents, incidents and unsafe acts within office and retail sites, construction sites, management assets, consultants, joint ventures (for instance, Concordia), outsourced staff; and the DMCC Free Zone and Master Community.

DMCC requires all employees, stakeholders, visitors and members of the public to fully comply with DMCC's HSE Policy in order to maintain a safe working environment at all times. The HSE Policy will be monitored for its effectiveness and reviewed on an annual basis to reflect and include recommended updates and amendments.

CHAPTER 3 ABBREVIATIONS AND DEFINITIONS

Capitalised words and phrases used throughout these HSE Guidelines shall, unless otherwise stated, have the meaning attributed to those terms below:

Accident(s)	An event that causes harm, illness, injury or death, or otherwise any other loss through damage to property.
Air Pollution	The presence in the air of any substance in quantities, characteristics or duration which causes a change in the physical, chemical or biological constituents of the air and would bring harm to human, animal, vegetation or buildings and reduce enjoyment of life or property.
Applicable Legislation	All applicable local legislation and regulations of the Government of Dubai and the Government of UAE, collectively.
Breeching Inlet	A connection through which the UAE Civil Defence Fire Department can pump supplemental water into a building's sprinkler system, standpipe or other system furnishing water for fire extinguishment or to supplement existing water supplies.
Building Envelope	The exterior elements of a building that form a barrier between the internal and exterior spaces. For an air-conditioned building, the Building Envelope is defined as the elements of the building that separate air-conditioned spaces from the exterior.
CE	A certification mark that indicates conformity with HSE protection standards for products sold within the European Economic Area.
Code of Construction Safety Practice	The DM <i>Code of Construction Safety Practice</i> .
Commercial Facilities	Those facilities and amenities located within the Master Community that are owned by the Master Developer but do not form part of the Common Use Facilities.
Common Areas	Means "Common Areas" as that term is defined in the <i>JOP Law</i> .
Common Path of Travel	The portion of an exit route that Occupants are required to traverse before two separate and distinct paths of egress travel to two exits become available. Paths that merge are Common Paths of Travel.
Common Use Facilities	Those facilities and amenities located within the Master Community that are owned by the Master Developer and are from time to time notified by the Master Developer as being areas under the operation, maintenance, management, administration and control of the Master Developer for the benefit of all Owners, Occupants and legitimate Community Users, including, but not limited to: All open areas, facilities, roads (not adopted by the RTA), lakes, pedestrian walkways, pavements, parking facilities within the Common Use Facilities (and in which a parking management system may be introduced at the discretion of the Master Developer), gardens, structures housing utilities and facilities infrastructure, water storage facilities, firefighting facilities, emergency services facilities, infrastructure, improvements and other common assets of the Master Community that are available for use by all Owners and Occupants (or an identified Owner or Occupant or group of Owners or Occupants in the case of licensed use areas or areas subject to a long lease or as otherwise identified by the Master Developer from time to time) and other Community Users and which do not form part of the title of any single ownership Plot, multi-owned building, unit or Commercial Facility, but are the residuary lands and buildings owned by the Master Developer and which access to and use remains subject to payment of Master Community Service Charges as notified in the MCD.

Community Users	<p>Any and all of the following, collectively:</p> <ul style="list-style-type: none"> • Member Companies; • Sub-Developers; • Owners; • tenants; • licencees; • Contractors; • Consultants; • Owners Associations; and • any other person or entity that in some way uses or is otherwise a stakeholder within the Master Community, including the DMCC Free Zone.
Competent Person/Personnel	A designated person suitably trained or qualified by knowledge and practical experience to enable a required task or tasks to be carried out properly.
Construction	Any work or undertaking connected to a Project, including the erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land-clearing, earth-moving, grading, excavating, trenching, digging, boring, drilling, blasting or concreting.
Consultant (Main Consultant)	<p>In the context of UAE Civil Defence, a professional approved by both DM and UAE Civil Defence and authorised and responsible for the design of Fire and Life Safety provisions, including Fire and Life Safety drawings, and execution of Project Construction work upon obtaining relevant formal approvals and permits pursuant to such responsibility from DM and UAE Civil Defence.</p> <p>A Main Consultant is not authorised to prepare Fire and Life Safety reports and risk assessments required by UAE Civil Defence, such tasks falling within the remit of a Fire Consultant.</p>
Contractor (Installation and Maintenance)	In the context of UAE Civil Defence, an organisation registered and approved by UAE Civil Defence which undertakes a specific scope of work relating to Fire and Life Safety for a Project upon a contractual agreement with a Main Consultant for a fee.
DAC	Dubai Accreditation Department.
dBA	The decibel scale for the measurement of sound pressure levels.
Dead End(s)	The portion of a route of travel that, when traversed, does not lead to an exit.
Demand Controlled Ventilation (DCV)	A system which adjusts outside ventilation air based on the number of Occupants and the ventilation demands created by those Occupants.
DEWA	Dubai Electricity and Water Authority.
DLD	Dubai Land Department.
DM	Dubai Municipality.
DMCC	Dubai Multi Commodities Centre.
DMCC Free Zone	The free zone regulated by DMCCA and operated by DMCC.
DMCC Rules and Regulations	The rules and regulations issued by DMCC and applicable within the DMCC Free Zone, including the Master Community Rules, as may be amended from time to time.
DMCCA	Dubai Multi Commodities Centre Authority, a free zone authority duly established by virtue of Law No. 4 of 2001, issued in the Emirate of Dubai, P.O. Box 48800, Almas Tower, Dubai, United Arab Emirates, or its nominees, assigns, successors or successors-in-title (in respect of its capacity as Master Developer).
DSE	Display screen equipment.
DTCM	Dubai Department of Tourism and Commerce Marketing.
EIA	Environmental impact assessment.

Emissions	Any gaseous, smoke, fumes, mist, heat, Noise, particulates or airborne dust released into the air environment.
Emissions Inventors Data Circular	The DM Circular No. (4) of 2014 <i>Concerning the Emissions Inventors Data</i> .
Environment Department	Environment Department of DM.
Environment Protection Regulations	The DM Local Order No. 61 of 1991 on the <i>Environment Protection Regulations in the Emirate of Dubai</i> .
Environmental Standards and Allowable Limits Bulletin	The DM Information Bulletin, ' <i>Environmental Standards and Allowable Limits of Pollutants on Land, Water and Air Environment</i> ', dated May 2003 and issued by the Environment Department.
Event	Any gathering of any number of people that takes place at a certain time in a location within the Master Community that is approved by DMCC for a certain purpose: whether ticketed or not, whether for consideration or free of charge, whether a one-off occasion or on multiple occasions and whether indoors or outdoors.
E.P.S.S.	Environment Protection and Safety Section of the Environment Department.
F&B Outlets	Any premises within the Master Community that are licensed to sell, serve or otherwise distribute food and beverages to the general public.
Facilities Management Company	A company registered and approved by UAE Civil Defence which is hired by an Owner to perform housekeeping, security, cleaning, maintaining, repairing, replacing activities and general functions as care taker of a property. Personnel of Facility Management Companies are usually the first responder(s) during emergencies.
Fire and Life Safety	Of materials, products and systems, intended to be used for fire and life safety purposes, including fire protection and alarms, emergency lighting, firefighting, smoke control systems, façade safety, fire doors, fire prevention and LPG/natural gas safety.
Fire and Life Safety Code of Practice	The UAE <i>Fire and Life Safety Code of Practice</i> , 2018 edition.
Fire Consultant (House of Expertise)	<p>An organisation registered and approved by UAE Civil Defence which provides expertise on Fire and Life Safety aspects of a Project for a fee.</p> <p>When hired by an Owner or Main Consultant, a Fire Consultant is responsible for:</p> <ul style="list-style-type: none"> • reviewing designs; • preparing Fire and Life Safety drawings; • preparing Fire and Life Safety reports; and • preparing risk assessments and evaluations to be submitted to UAE Civil Defence under the Main Consultant's direction. <p>A Fire Consultant will also conduct Fire and Life Safety inspections when hired by an Owner, Consultant or Contractor.</p> <p>However, a Fire Consultant is not authorised to make applications directly with UAE Civil Defence for approvals for Projects, such tasks falling within the remit of a Main Consultant.</p>
Fit Out Contractor	An organisation registered and approved by UAE Civil Defence which executes interior décor and fit out work, including Fire and Life Safety aspects of the space, pursuant to a contractual agreement with an Owner, Main Consultant or tenant for a fee.

	<p>In context of UAE Civil Defence, the organisation may be a professional interior finish contractor, authorised and responsible to design and execute fit out work upon obtaining relevant formal approvals and permissions from DM and UAE Civil Defence.</p> <p>For the avoidance of doubt, a Fit Out Contractor is not authorised to prepare Fire and Life Safety reports and risk assessments when initiated by UAE Civil Defence.</p>
Global Warming Potential (GWP)	The contribution of greenhouse gases (carbon dioxide, methane, nitrous oxide, ozone, chlorofluorocarbon and hydrofluorocarbons), as a result of burning fossil fuels, released to the atmosphere and that contribute to the phenomenon of global warming.
gpm	US gallons per minute.
Green Building Regulations	The DM <i>Green Building Regulations and Specifications</i> .
Guideline for the Control of Legionella in Water Systems	The DM <i>Guideline for the Control of Legionella in Water Systems</i> , Rev 2 6/2010.
Guidelines for the Control of Entertainment Noise	The DM <i>Requirements for the Control of Entertainment Noise</i> (DM-PH&SD-P7-TG04).
Health Requirements for Construction Sites	The DM <i>Health Requirements for Construction Sites</i> (DM-PH&SD-P7-WI12).
HF	Hydrofluoric acid.
HSE	Health, safety and environment.
HSE Plan	A legally required document for Construction and which could be used in other industries as best practice or otherwise as and when required by DMCC.
HSE Policies	The policies, processes and procedures adopted by DMCC to regulate HSE within the Master Community, as may be amended from time to time and including these HSE Guidelines.
HVAC	Heating ventilation and air conditioning.
IAOFC	Industrial Annual Fitness Certificate.
Jointly Owned Property	Property located within the Master Community that is subject to the <i>JOP Law</i> and is sub-divided into units and Common Areas and in respect of which a separate Owners Association is established.
JOP Law	The Dubai Law No. 27 of 2007, <i>Concerning Ownership of Jointly Owned Property in the Emirate of Dubai</i> , as may be amended from time to time.
LPG	Liquid petroleum gas.
Lux	A system of units of illumination equal to a luminous flux of 1 lumen per square meter. This is the luminous flux density at a given surface. 1 Lux = 0.0929 foot candle.
Managing Agent	Any person or body appointed by the Master Developer to represent or otherwise undertake or administer any of the functions of the Master Developer within the DMCC Free Zone or the Master Community more generally.

Manufacturer	<p>A company registered and listed by UAE Civil Defence which manufactures products, goods and items that, when installed, readily serve as Fire and Life Safety products.</p> <p>Manufacturers of individual parts, components, ingredients, portions or sections that require a subsequent assembly process to become whole products are not recognised, registered and listed by UAE Civil Defence.</p> <p>Furthermore, the obtaining of 100% parts and components from other Manufacturers and assembling those parts to create an end product is not manufacturing and such activities are not registered by UAE Civil Defence as being those of a Manufacturer.</p>
Manufacturer's Agent	<p>A company registered and listed by UAE Civil Defence which is not located in a free zone of the UAE and is not a Manufacturer but the sole representative of one or multiple Manufacturers of Fire and Life Safety materials, products or systems located or used in the UAE.</p>
Master Community	<p>The entire master community known as the DMCC Master Community, developed and continuing to be developed on a portion of the land comprising Plot No. 811, 812, 813, 8830, Emirates Hills First, Dubai and situated between 5th and 6th Interchanges, Sheikh Zayed Road, Dubai and which is divided into Plots, Common Use Facilities and Commercial Facilities in accordance with the Master Plan or any amendment thereof and includes all reductions and extensions to it from time to time.</p>
MCD	<p>The declaration of the Master Community, as may be amended from time to time.</p>
Master Community Rules	<p>The rules of the Master Community, as appended to the MCD and as may be amended from time to time.</p>
Master Community Service Charge	<p>The service charges payable by Owners to the Master Developer, representing the assessment of the Owners' respective proportionate share of expenses incurred in maintaining the Master Community, which is determined in accordance with the relative proportion of the Owners' respective Plot and raised in accordance with the MCD.</p>
Master Developer	<p>DMCCA in its capacity as Master Developer of the Master Community or any of its affiliates, nominees, assigns, transferees, successors or successors-in-title as may assume responsibility for the development, management or control of the Master Community from time to time.</p>
Master Plan	<p>The master plan for the Master Community, prepared by or on behalf of the Master Developer and approved by the Relevant Authorities, as the same may be amended by the Master Developer from time to time in accordance with the MCD.</p>
Member Companies	<p>A business incorporated and licensed to operate within the DMCC Free Zone.</p>
MSDS	<p>Material Safety Data Sheet.</p>
Near Miss	<p>Any Accident, Event or circumstance that could or has the potential to cause harm, illness, injury, death or other loss through damage to property.</p>
NFPA	<p>National Fire Protection Association.</p>
NOC	<p>No Objection Certificate.</p>
Noise	<p>Any noise of such nature and produced by whatever means (whether natural or artificial) that unreasonably interferes with the peace, comfort and convenience of any person, other than a person in or at the premises from which the Noise emits.</p>
Occupant	<p>A person who has full operational control of a space in the Master Community, whether that be land, building or any part thereof, whether as an Owner, tenant, possessor or in any other capacity permitting such person to occupy that space.</p>
Occupant Load	<p>The total number of people or Occupants that might occupy a building or portion thereof at any one time.</p>

Owner	A person who is the proprietor of, and possesses the legal authority or title from a Relevant Authority to own, a particular piece of land, property, assets, structure, businesses or material within the Master Community.
Owners Association	An association of Owners of Jointly Owned Property formed pursuant to the <i>JOP Law</i> .
OAM	An Owners Association Manager appointed by an Owners Association in accordance with the <i>JOP Law</i> from time to time.
Owner's Representative	A Competent Person or organisation appointed or designated by an Owner to perform the Owner's duties and responsibilities on the Owner's behalf. The Owner is directly responsible for the Owner's Representative's conduct. An Owner's Representative can include an OAM.
Personal Care Compliance Documentation	The following documentation, collectively: <ul style="list-style-type: none"> • UAE Ministry of Environment & Water publication, '<i>Unified health guidelines for practicing Beauty, Personal Care and Massage Activities</i>'; • the DM <i>Health Requirements for Ladies Salons and Personal Care Centres</i> (DM-PH&SD-P7-WI05); • the DM <i>Health Requirements for Barber Shops</i> (DM-PH&SD-P7-WI04); and • the DM <i>Health Requirements for Massage Centres and Spas</i> (DM-PH and SD-P7-WI01).
Plot	The land and buildings constituting a single-ownership Plot or a multi-owned building.
PPE	Personal protective equipment.
Public Health and Safety Regulations	The DM Local Order No. (11) of 2003 <i>Concerning Public Health and Safety of the Society in the Emirate of Dubai</i> .
Project	Any development and associated facilities to be constructed by the Master Developer or a Sub-Developer in the Master Community.
Relevant Authority	The Government of the UAE or the Emirate of Dubai (as the case may be) or any ministry, department, municipality or local authority having jurisdiction over the DMCCA or the Master Community, including DM, DEWA, RTA, DLD and RERA, but specifically excluding DMCCA.
RERA	Real Estate Regulatory Agency of the DLD.
RTA	Roads and Transport Authority of the Government of Dubai.
Sewerage	Structures designed to collect: <ul style="list-style-type: none"> • Waste Water from apartments, unit's houses, factories, public, commercial and industrial premises within the Master Community; • storm water and drain water; and • effluent discharge, in order to dispose of such in a proper and effective way following treatment or without treatment.
Shading Coefficient (SC)	A measure of the amount of heat passing through glazing compared with the heat passing through a single clear glass, being the ratio of solar heat gain at normal incidence through glazing to that occurring through approximately 3 millimetre (1/8 th inch) thick clear, double-strength glass.
Stack Testing	The physical measurement of a representative sample of the Emissions from a source to verify concentrations and/or Emission rates or actors.

Sub-Developer	A person or organisation that invests in land in the Master Community to develop such land into habitable spaces, especially by subdividing the land into building sites to sell and/or construct buildings on those sites to sell whether in full or part.
Thermal Bridges	A component, or assembly of components, within a Building Envelope, where the insulation is not continuous and through which heat is transferred at a substantially higher rate than through the surrounding envelope area, including but not limited to: a metal fastener, concrete beam, slab or column.
Thermal Transmittance (also known as 'U-value')	The rate of transfer of heat through one square metre of a structure divided by the difference in temperature across the structure, which is expressed in watts per square metre per degree kelvin, or W/m ² K. Well-insulated parts of a building have a low Thermal Transmittance. Conversely, poorly-insulated parts of a building have a high Thermal Transmittance.
Threshold Limit Value (TLV)	The level of exposure that a typical worker can experience without an unreasonable risk of disease or injury.
Traffic Management Strategy	A plan devised for the appropriate management of traffic throughout the timeline of a Project.
UAE	United Arab Emirates.
UAE Civil Defence	Dubai Civil Defence, the Emergency Management Organisation in Dubai, UAE.
Waste Water	Used water disposed of by residential, commercial, industrial and agricultural establishments or by Sewerage.
WDS	Waste disposal service.
VOC	Volatile organic compounds.

CHAPTER 4 INTRODUCTION AND KEY AIMS

It has become the fundamental responsibility of employers to ensure that workers are not harmed during the course of their employment. As such, most jurisdictions, including the UAE, have introduced legislation relating to HSE and the protection of workers, communities and the general public.

HSE management systems and programs are designed to cover:

- permanent employees;
- any outsourced or contract workers; and
- members of the general public (such as visitors and local communities) who may be impacted by an organisation's operations.

A proactive and preventative HSE culture can deliver substantial productivity benefits for an organisation. These include reductions in injuries, illnesses and, consequently, sick days, insurance claims and premiums and regulatory fines, as well as improvements in staff motivation and performance.

By contrast, poor management of HSE can undermine an organisation's reputation and commercial performance. Most importantly, it directly increases the risk of workplace injuries, illnesses and fatalities.

These HSE Guidelines identify and encompass the working behaviours and safe working practices that are mandatory for Community Users within the DMCC Free Zone and the Master Community, whether used as a place of residence, work, leisure or otherwise.

These HSE Guidelines comply with the requirements set forth by Applicable Legislation and, where possible, go over and beyond those requirements.

This document is live and will be monitored, measured and updated for continuous improvement.

These HSE Guidelines provide guidance for all Member Companies and employers within the DMCC Free Zone to establish and implement systems to manage the HSE aspects of their business activities.

The key aims of these HSE Guidelines can be summarised as follows:

- ensure that all sectors establish and adopt robust HSE management systems to ensure the occurrence of HSE Events are reduced and, ultimately, eliminated;
- ensure that all business activities are performed safely and, as far as reasonably practicable, at no risk to the general public or to property;
- limit the adverse effect of business activities on the environment;
- provide guidance on acceptable and standardised requirements with respect to managing HSE risks, pursuant to DMCC Rules and Regulations and Applicable Legislation;
- establish industry best practice;
- provide guidance and assistance to all sectors operating within the DMCC Free Zone and the Master Community to prevent Accidents arising out of working activities;
- ensure that safe systems of work are implemented to control HSE aspects related to business activities of Member Companies;
- ensure that all Member Companies are in compliance with DMCC Rules and Regulations and Applicable Legislation;
- provide a practical guideline and framework for Consultants and Contractors to follow all DMCC Rules and Regulations that apply to any Construction or Project;

- assist with the preparation for establishing and implementing a system for Consultants and Contractors to manage all HSE aspects that relate to their Project;
- specify the roles and responsibilities for establishing, implementing and monitoring Consultants' and Contractors' HSE systems;
- ensure that Project activities do not impact amenity, traffic or the environment within the surrounding areas of the DMCC Free Zone through proper planning and implementation of robust HSE practices;
- ensure effective communication, instruction and information and enable employers to establish procedures to monitor and measure their HSE management system; and
- provide guidance on HSE management requirements and expectations to ensure HSE compliance but without detail on how to specifically achieve such requirements.

CHAPTER 5 DMCC ACTIVITIES AND HSE RISKS

This section discusses the risks associated with the following activities in and uses of the DMCC Free Zone and the Master Community:

- Construction;
- refurbishment and fit out work;
- towers;
- retail activities (including food and beverage F&B Outlets);
- industrial activities; and
- hotels.

All Community Users must identify the HSE hazards, risks and environmental impacts (collectively, **HSE Concerns**) related to their activities within the DMCC Free Zone and the Master Community.

Once identified, any and all HSE Concerns must be mitigated by the appropriate Community User, through the adoption and continued implementation of appropriate control measures to suitably manage and prevent any similar or resulting HSE Concerns from occurring.

5.1 Construction and HSE Risks

This section encompasses the mandatory working behaviours and safe working practices for any Construction or Project within the DMCC Free Zone and the Master Community.

The content of this section applies only after all necessary approvals have been obtained from all Relevant Authorities, in relation to commencing site mobilisation and Construction activities.

All required method statements and risk assessments must be approved prior to commencement of any Construction work.

During Construction, all work sites must be kept secure and measures taken to ensure that no materials may escape due to any natural or human-induced factors affecting the DMCC Free Zone and the Master Community or any neighbouring community.

Machinery, equipment and tools must:

- be in good operating condition;
- be fit for purpose;
- be subjected to third-party inspections; and
- be maintained as part of a preventative maintenance program.

Adherence must be made to specific inspection and permit requirements specified in Section 2.15 (Chapter 2) of the *Code of Construction Safety Practice*.

5.1.1 Project Start Up

Prior to the mobilisation of any Contractor on a development site in the Master Community, the Sub-Developer, Consultant or other concerned party must write to DMCC and submit officially the following information:

- Project name/Plot details;
- brief description/Project scope;
- proof of ownership of the Plot;
- copy of the affection plan for the Plot;
- identification of all Project stakeholders;
- directory of all key Project participants;
- organisation chart with contact information for key personnel involved on the Project;

- NOCs from all Relevant Authorities;
- DM approval for mobilisation;
- NOC from the Managing Agent concerning access to the Construction site;
- evidence of the approved HSE Plan;
- a list of method statements and risk assessments approved by the supervising Consultant; and
- CVs and certificates of the person in charge of safety for approval by DMCC.

A Project start-up meeting must be scheduled by the Sub-Developer, Consultant or other concerned party to review the above documentation once submitted.

5.1.2 Steel and Concrete Form Work

Concrete form work must be carried out in accordance with Chapter 10 of the *Code of Construction Safety Practice*.

A method statement for structure Construction, including the precautions to be taken to ensure the safety of workers at all stages of work, must be developed and approved by the supervising Consultant.

All work on rebar walls, piers and concrete form walls requires fall protection at all times. Suitable fall protection can only be achieved through use of the following measures:

- double lanyard system;
- retractable life lines;
- man lifts or man basket;
- guardrail systems and platform;
- warning line systems; and
- safety net systems.

Access to structural steel must be obtained by the use of steel ladders, aerial lifts or other approved personnel-hoisting devices.

Use of wooden ladders and climbing on structural steel members (e.g. columns and diagonal braces) are strictly forbidden.

Use of crane-hoisted personnel devices must comply with the Contractor's procedures, be maintained through a periodic maintenance program and be signed off by a DAC-approved third party in accordance with Applicable Legislation.

The Contractor shall develop a detailed steel erection plan, including a risk assessment, temporary support and erection equipment and sequence of steel erecting that must be approved by the supervising Consultant.

The Contractor shall determine if the walking/working surfaces on which its Project employees are to work have the strength and structural integrity to safely support workers.

Every worker must be protected from falling by the use of a guardrail system, safety net system or personal fall arrest system whenever:

- walking/working on a surface with an unprotected side or edge; or
- constructing a leading edge, which is 1.8m or more above lower levels.

The Contractor shall use personal fall arrest systems, covers or guardrail systems erected around gaps or holes (including skylights) more than 1.8m above lower levels to protect all persons on all walking/working surfaces from falling through such gaps or holes.

The Contractor shall use appropriate guardrail systems to protect employees on ramps, runways and other walkways from falling to lower levels from any height of or exceeding 1.8m.

Appropriate safety precautions must be implemented to eliminate risk from workers or any person from tripping in, stepping into or through gaps or holes (including skylights).

Appropriate covering materials must be applied as a form of protection from objects falling through gaps or holes (including skylights).

Consideration must be given to necessary measures to protect members of the general public from falling objects at a Construction site. The Contractor shall ensure that every person in the vicinity of that hazard wears a hard hat. The Contractor shall also implement the following additional measures:

- erect toe boards, screens or guardrail systems to prevent objects from falling from higher levels;
- erect a canopy structure and keep potential objects far enough from the edge of higher levels so that those objects do not fall over the edge in the event of accidental displacement;
- barricade the area into which objects could fall, prohibit employees from entering the barricaded area and keep objects that may fall far away from the edge of higher levels so that those objects do not fall over the edge in the event of accidental displacement; and
- provide special facilities (e.g. safety nets) to prevent the falling of objects.

Where a Contractor demonstrates that it is either not feasible or creates a greater hazard to use the protection systems suggested above, the Contractor shall apply and implement an appropriate alternative protection plan which meets the requirements of Applicable Legislation and has been approved by the supervising Consultant.

5.1.3 Excavations

An NOC must be obtained from the Relevant Authority prior to any excavation work. In addition, any excavation taking place within the Master Community requires a permit to work from the Managing Agent.

Specific requirements related to excavations must be in accordance with Chapter 9 of the *Code of Construction Safety Practice*. The Contractor shall be responsible for providing all necessary precautions to protect employees from potential hazards of excavating work. All excavations must be properly cordoned off from the general public at all times, with suitable hard barriers with warning signs placed.

Before excavation work commences, a full underground survey must be completed and any 'as built' records must be used and test pits carried out.

The edge of an excavation which is or exceeds 1.25m in depth must be protected by guardrail systems, fences or barricades. The edge of a well, pit, shaft and similar excavation which is 1.25m or more in depth must be protected by guardrail systems, fences, barricades or covers.

Excavations with straight cut sides and changes in elevation of or exceeding 1.8m must be provided with fall prevention/protection devices adequate to protect personnel working or travelling adjacent to them. The preferred method for safeguarding this fall exposure is with rigid guardrail systems immediately adjacent to the excavation.

Where personnel are required to work immediately adjacent to the excavation and guardrail systems, employees must be provided with a fall restraint and/or lifeline system to which they can secure their safety lanyard/harness.

Employees must remain secured to a lifeline or restraint system when working within 1.8m of an excavation with unprotected sides or edges. Lifeline systems and employee restraint systems must meet engineered drawing and technical specification prior to use. Stairs, ladders and ramps must be provided for access to excavations which exceed 1.2m in depth.

A deep excavation area must be identified in advance and the constructability plan must emphasise the requirement of the method statement and task specific risk assessment before the start of these activities. Based on the risk assessment, control measures must be employed to ensure the workers' safety and adjacent structures' stability and safety. Special care and precautions must be taken for dewatering.

Strict adherence to a permit to work system is required and strict compliance must be maintained with all conditions to allow work to be carried out safely. A check in/check out system for all personnel entering and exiting excavations must be established to clearly identify all employees working underground.

Deep excavation pits are required for bench-cutting, step-cutting or employing the provision of sheet piles shoring and strutting. Deep excavations may be supported by any of the following systems:

- soldering system (single type or double type);
- contiguous or decant piles; or
- diaphragm wall or open excavation.

Protective barricades and flashing warning signs must be put in place for all excavations near sidewalks, pavements, pathways, roads and streets.

Vehicle movements must be strictly controlled to ensure and avoid excavated side wall collapses. All machinery and equipment producing vibration may not be used in any manner that would affect the excavated pit side walls. Proper access and egress is required for worker and equipment movements. Gas detectors must be used to ensure the maintenance of required oxygen/gas levels. Excavation permits are required to execute the work.

The Contractor shall be prepared for any emergency situation by employing and engaging competent Construction and HSE personnel at all times.

Safe Practice

No excavation land can be expected or assumed to support its own weight. Even solid looking rock can collapse without warning. The sides of any type of excavation exceeding 1.25m in depth must be suitably shored, stepped or sloped back to the natural angle of repose.

Before work starts

To allow excavation work to be undertaken with minimum risk to personnel, plant and equipment, and to enable such work to proceed without interruption, the following factors must be considered at a suitable time prior to commencement of the work:

- size and purpose of the excavation;
- nature of the ground including the proximity of any made-up ground;
- proximity of adjacent structures;
- position of underground obstructions (e.g. pipes and cables);
- weather and moisture conditions;
- sources of vibrations;
- adjacent roads and footpaths;
- methods of excavation; and
- necessary permit to work from the Managing Agent.

Consideration of the above factors indicates which safety measures are to be implemented and whether the sides of the excavation can be sloped/stepped back to a safe angle or whether shoring / dewatering is necessary.

Adequate and suitable shoring material must be on site and made immediately available for use whenever deep excavation work is carried out.

Non-deep excavation work may also require shoring. The Contractor shall provide a safe working procedure for all types of excavation work.

5.1.4 Construction Vehicle and Traffic Movement

The Traffic Management Strategy for any development must minimise the interface between public and site traffic by reducing the number of deliveries (including by staging deliveries), such that the volume of traffic is kept as even as possible avoiding peaks and helping to control vehicle movements in and around the development.

The following Construction vehicle and traffic requirements must be adhered to:

- vehicles used on the site must be well-maintained with minimal Emissions and Noise;
- no parking of any vehicles may be permitted over underground chambers;
- adequate space for parking of sewage pump-out trucks (or tankers) must be allocated adjacent to, but not directly over, underground chambers and manholes, unless prior approval of the Master Developer is obtained;
- vehicles leaving a Construction site must not spread mud, soil or dirt onto public roads, with any such debris to be removed and cleaned promptly;
- regular road cleaning must be undertaken by the Contractor to ensure the roads remain in a suitable condition;
- the Contractor shall be responsible for housekeeping of the site as well as surrounding areas affected by their Construction activity;
- all traffic movement must be in accordance with any Traffic Management Strategy for the Project, as previously reviewed and approved by the supervising Consultant and DMCC;
- vehicles must only travel on designated roads to limit dust generation and unnecessary disturbance to the landscaped areas and the plants in particular, as well as to avoid the spoiling of finished work;
- entry and exit points from the work area must be clearly designated, and fencing or other traffic barriers must be put in place to limit uncontrolled movement of traffic;
- cement mixer trucks delivering cement/concrete to the work site must not be permitted to wash-out on site unless in a specified designated area. That area must be immediately cleaned after the wash-out has been undertaken;
- trucks hauling fill or other dusty materials must be covered, and loads must be kept at least 0.3m below the top of the truck walls, with a sheet or tarpaulin to control dust; and
- tarpaulin sheets must be covered from ground level, and no person may be permitted to climb on top of trucks to cover their loads.

Diesel tankers providing on-site re-fueling to vehicles and equipment (i.e. mobile re-fueling) must carry on board at all times the following:

- drip tray(s);
- fire extinguishers;
- ground protective sheet(s);
- a labelled, sealable container for storing spilled fuel;
- equipment such as funnels for transferring fuel captured in drip trays into the storage drum; and
- a suitable diesel/oil spill clean-up kit.

Traffic Management Strategy

For any Construction Project, the Contractor must submit a comprehensive Traffic Management Strategy for managing both vehicle and pedestrian routes. The Traffic Management Strategy must be approved by the supervising Consultant and DMCC and must address the following key points:

- vehicle types and schedule of use during Construction;
- where there are currently no access routes to the work site, details of any necessary roadwork carried out on primary (public) roads;
- road sweeping proposals;
- the elimination of reversing where possible;
- safe driving and working practices;
- protection of the general public;
- adequate vision and lines of sight;
- the provision of signs and barriers; and
- loading and unloading areas.

Any Construction related activity expected to take place either on RTA-owned roads or on an RTA right of way within the DMCC Free Zone and the Master Community requires an NOC from RTA and DMCC, respectively.

Route maps must be included in the Traffic Management Strategy, showing the proposed routes that all site vehicles will use to gain access to and from the work site. Once approved by the supervising Consultant and DMCC, the route map must be issued to all Contractors and Sub- Contractors making deliveries to the site.

Detailed plans must also address any routes that affect public footpaths, with diversion proposals as well as restrictions and limitations of the area, such being subject to DMCC approval.

Access to and from Site

Vehicles may not cross or transverse a public footpath unless such footpath is adequately reinforced and DMCC has approved such action. Where site access is to be via a temporary vehicle crossing, such crossing must be constructed and removed entirely at the Contractor's expense, including lowering the kerb and final permanent reinstatement of the footpath.

Wherever vehicles leave the site for the purpose of removing excavated materials, adequate wheel-washing facilities must be provided within the site boundary. No mud or other debris may be carried onto any public road from the work site. Details of such washing facilities must be submitted to DMCC.

Roads within the DMCC Free Zone and the Master Community must not be used as holding areas for vehicles waiting to enter a work site. Where large numbers of vehicles are anticipated, arrangements must be made to stagger arrival times of those vehicles. Coordination between the Contractor and the Managing Agent must be made to check for any NOC requirements.

Dust pollution must be limited as much as reasonably practicable. Appropriate steps must be taken to prevent dust from becoming a nuisance within the DMCC Free Zone, the Master Community or occupied towers or to the general public.

Access driveways to be constructed

Approved driveways may need to be constructed for vehicular access to a Construction site. Proposals made to DMCC must show plans, traffic management and specifications of proposed materials. Where existing landscaping is in place, a bond shall be provided to DMCC for the rectification of any damage caused by the work.

Street Cleaning

Contractors shall ensure that all public carriageways and footways adjacent to a work site are at all times kept free of general builder's debris, paint flakes, sand, wrapping and packaging from materials, as well as all other materials resulting from the work being carried out (including litter left onsite by employees).

Failure to comply with required cleaning standards and/or frequencies will render the Contractor liable for any costs incurred by DMCC in taking all appropriate remedial action to reinstate the area to its original state prior to commencement of work.

No Obstruction of Public Way

Under no circumstances shall public ways be obstructed by any materials, vehicles, refuse, skips or similar obstacles/hazards. Non-compliance with this requirement will result in the issuance of a notice by DMCC for immediate suspension of work on site.

Road Closures

Road closures generally will not be permitted within the DMCC Free Zone and the Master Community unless deemed in DMCC's sole discretion to be absolutely necessary. Any road closure must be granted by way of an NOC from DMCC.

Clarification of logistics of a road closure must be provided to DMCC no less than:

two (2) weeks prior to an intended partial road closure; or

four (4) weeks prior to an intended full road closure.

Such clarification must provide a scenario which, in the opinion of DMCC, minimises traffic disruptions to the surrounding areas.

The Contractor shall be responsible for obtaining, purchasing and supplying all signs and equipment to implement the road closure as directed by DMCC and/or the Managing Agent. The Contractor shall be responsible for erecting all signage and for subsequent dismantling of the same.

DMCC reserves the right to revoke any full or partial road closure previously granted for any reason, including an emergency, misuse of the street/road or any other reason. Such revocation may be made by DMCC without any liability or compensation for that revocation to the Contractor.

All traffic management required on the road (for lane restrictions as well as road closures and the erection of temporary traffic signals) is the responsibility of the Contractor and must be approved by DMCC and the Managing Agent.

Where road closure obligations and requirements are not adhered to by the Contractor, the work will be suspended immediately and the site reopened to traffic, with all costs incurred for each action payable by the Contractor.

Should any road closures affect RTA-operated roads, the Contractor must seek RTA's prior approval and obtain all relevant NOCs directly through the RTA. On receiving the NOC from RTA, the Contractor shall then apply for an NOC from DMCC. The Contractor shall notify DMCC at all times of any and all proposals issued to RTA.

5.1.5 Fire and Life Safety during Construction and maintenance

Safe working, storage and equipment handling practices and operation procedures are vital at Construction or maintenance sites to prevent fire incidents and to enable workers to achieve safe egress and evacuation.

Fire risk assessments for Construction must consider sources of ignition, fuel and oxygen that could contribute to fire incidents and implement preventative actions that include site security, smoking prohibition, waste disposal, temporary offices, accommodation and enclosures, equipment and Construction materials and vehicle parking (refer to Table 12.3 (Chapter 12) of the *Fire and Life Safety Code of Practice*).

Hot work, cold work, confined space work, electrical work etc., must be controlled by permit to work systems which include considerations for:

- nature of work involved;
- safety measures in place and that need to be adopted;
- PPE;
- associated equipment shut-offs; and
- work site inspection.

Fire incidents at Construction sites must be prevented by implementing safe handling and storage practices of flammable and combustible liquids or gases, explosive and combustible materials, compressed gases and LPGs as specified in Table 12.5 (Chapter 12) of the *Fire and Life Safety Code of Practice*.

Electrical devices must be maintained in a safe condition and free from damage in compliance with NFPA 70, *National Electrical Code*, to ensure electrical safety during Construction.

Branch circuits must originate from approved power outlets or panel boards. Wiring, junction boxes, electrical devices, electrical equipment, panel boards etc. may not be located where water flooding is a possibility.

Supplementary requirements for wiring, lighting and safe working practices to ensure electrical safety during Construction work are provided in Tables 12.6 and 12.7 (Chapter 12) of the *Fire and Life Safety Code of Practice*, respectively.

Electrical work must only be carried out by electricians specifically qualified for low voltage or medium or high voltage electrical work.

Prior to any work commencing, testing must take place to prove that all electrical services are disabled.

Fire access roads for UAE Civil Defence approach, means of egress for evacuation, fire detection and alarm systems and fire protection systems for work sites under Construction, alteration, modification or demolition must be as per Table 12.8 (Chapter 12) of the *Fire and Life Safety Code of Practice*.

Alternative methods of escaping from higher floors during Construction (e.g. escape chutes, escape ladders and escape slides) must be considered and implemented as per Manufacturer's guidelines.

Workers must be trained and briefed to adhere to fire safety prescriptions and precautions specified in these HSE Guidelines.

5.2 HSE Relating to Refurbishment/Fit Out Work

Refurbishment/fit out work includes new additions or modifications that could require structural, architectural, mechanical, electrical and plumbing installations. Accidents can be avoided by sufficient planning and execution of fit out Projects, including training and awareness of relevant parties.

5.2.1 Exposure to Asbestos-Containing Material (ACM)

During refurbishment activities where modifications or demolitions occur of existing structures and walls, employees could risk being exposed to asbestos. Asbestos is normally used in the building industry in cement pipes, walls and ceilings.

When asbestos-containing material (**ACM**) is disturbed, it releases microscopic fibres or dust that, when breathed in, could result in mesothelioma, lung cancer or asbestosis.

Employers using ACM must obtain approval from DM. All ACM used on a work site must be appropriately labelled. During refurbishment work in buildings where large amounts of ACM could become airborne, all possible safety measures must be taken to avoid exposure to employees or the general public.

Businesses shall comply with specific storage, warehousing and transport requirements for ACM, including waste collection and disposal requirements specified within the *DM Guidelines for Safety in Handling Asbestos* (DM-PH&SD-P4-TG24). Employees handling transporting or disposing ACM must be suitably protected with coverall, safety shoes, goggles, gloves and respiratory protection with a dust respirator or mask suitable for asbestos fibre filtration.

5.3 HSE for Towers

Towers within the Master Community are generally located within alphabetically assigned clusters consisting of multifunctional residential units, offices, hotels and general commercial and retail units. The clusters are each comprised of three tower blocks and surround three large lakes and a park within the Master Community.

Owners Associations and their appointed OAMs are fully responsible for the management of HSE within their particular towers. Any Facilities Management Company employed by an Owners Association or their appointed OAM shall be responsible for implementing HSE requirements as directed by that particular Owners Association.

All maintenance work carried out within towers must be performed by Facility Management Companies.

Additional responsibilities as outlined in Chapter 18 of the *Fire and Life Safety Code of Practice*, specifically Section 2.3 (Owners Responsibilities) and Section 2.12 (Facilities Management Company Responsibilities) must be carefully adhered to. The Owners, their appointed Owner's Representatives and Facility Management

Companies shall uphold the individual responsibilities also specified in Chapter 18 of the *Fire and Life Safety Code of Practice*.

In accordance with the *JOP Law*, tenants may not make any changes, partition, sub-lease, renovate or perform any maintenance work without prior permission from the building's Owner, Owners Association or their appointed OAM. If such work is required, an NOC must be submitted along with all required documents to DMCC and any other Relevant Authority for approval.

5.3.1 General Office Activities

Offices must implement their own HSE management in line with tower HSE requirements.

With respect to general office activities, specific hazards (e.g. slips and trips), manual handling, use of display screen equipment, working at height, stress, exposure to electricity, fire, chemicals, lighting and lone working, must be taken into consideration and necessary precautions implemented.

Office Layout Requirements

All offices where people work must have sufficient floor area, height and unoccupied space for appropriate health, safety and welfare. Sufficient free space must be available to allow employees to get to and from workstations and to move around with ease. Various factors may influence the number of people able to work within a particular area, such as:

- the size of the space;
- space taken up by furniture, fittings and equipment; and
- the general layout of the room.

Pursuant to Table 3.13a (Chapter 3) of the *Fire and Life Safety Code of Practice*, the following Occupant Load and exit capacity factors must be adhered to:

Occupancy	Occupant Load Factor per person
Regular office areas	9.3 m ²
Concentrated office areas	4.6 m ²
Floors used only for offices	9.3 m ²

Common circulation areas in employee work spaces must have accessible routes for differently abled people, in accordance with Table 15.7 (Chapter 15) of the *Fire and Life Safety Code of Practice*.

Accessible routes in employee work spaces must have a clear width of at least 915 mm, but are not required in spaces less than 27.9 m² in area.

Further requirements as per Table 15.1 (Chapter 15) of the *Fire and Life Safety Code of Practice* must also be considered.

Display Screen Equipment (DSE)

Employees using DSE regularly as a significant part of their normal work, including for continuous periods of an hour or more, are at risk of eye strain, upper limb disorders and back ache from overuse or improper use of DSE.

DSE assessments must be performed by a Competent Person who can assess workstation risks, ensure control measures are implemented and provide training to users of DSE.

Users of DSE must be trained on the risks associated with DSE work and controls, including how to adjust their workstation and furniture, avoid repetitive stretching movement, clean their screen and mouse and report problems or symptoms.

DSE assessments must be reviewed when:

- major changes are made to equipment, furniture, work environment or software;
- major changes are made to the nature of work tasks;
- users change workstations;
- current controls cause additional problems or further complications; or
- there is a change in legal requirements.

5.3.2 Health and Fitness Club Activities

Hazards associated with health and fitness clubs include trips and falls, misuse of sports equipment, defective equipment, Noise, vibration and incompetent instructors.

Businesses operating health clubs within the Master Community must have valid professional trade licenses from the Dubai Department of Economic Development. Staff must possess occupational health cards issued by the applicable authority.

Prohibitions and specific requirements outlined within the *DM Health Requirements for Health Clubs* (DM-PH&SD-P7-WI06) must be properly adhered to and compliance regularly monitored.

Noise emanating from health clubs must not interfere with the peace and comfort of Occupants of neighbouring properties. Proper sound-proofing and vibration assessments must be completed prior to commencement of health and fitness activities to eliminate the migration of loud Noise or vibrations.

The requirements of the *Guidelines for the Control of Entertainment Noise* must be consulted for further details.

5.3.3 Use of Elevators and Escalators

The use of elevators and escalators cannot be avoided. Risks associated with their use must be reviewed and control measures implemented to mitigate adverse effects on their users.

Elevators must be manufactured to hold people and be subject to technical maintenance and examined at least once every six (6) months by an approved specialist. A certificate of safety must be issued by a Competent Person following any repairs, specifying the serial number, technical details, type of tests and safe working load. If any defects are identified during inspections, the elevator must immediately be taken out of service and defects rectified promptly.

The maximum loading capacity of an elevator must be visibly displayed inside the elevator. Chains, ropes or towing wire must be regularly maintained and inspected at least once every six (6) months, as specified within Article 20 of UAE Ministerial Order No. (32) of 1982 *Specifying Preventative Methods and Measures for Protecting Workers against Work Hazards*.

The Owners of towers, or their appointed OAMs, are responsible for ensuring that all statutory checks and inspections are performed according to relevant legislative requirements.

5.3.4 Swimming Activities

Swimming pools present numerous hazards, including slips, trips and falls from wet surfaces, uneven pathways, people running, collision with obstacles around pools, hazardous pool chemicals on site, water-

borne infections and increased risk of electric shock where water is present. All risks associated with the operation and maintenance of swimming pools must be identified and control measures implemented and monitored to manage HSE risks.

Public swimming pools, including those located in residential towers forming part of a Common Area, must be properly monitored by a qualified lifeguard during pool opening hours. Resuscitation equipment must be available at all commercial and public swimming pools and only used by qualified persons pursuant to the *DM Guidelines for Swimming Pool Safety* (DM-PH&SD-P7-TG01).

Facilities must be cleaned and maintained to prevent spread of disease and fungal and bacterial infections. Maintenance of a swimming pool and its filtration and disinfection systems must be part of a formal facilities maintenance program controlled by a building's Owner/Owners Association/Owner's Representative.

Swimming pool water quality must be checked daily with samples taken to assess chlorine, pH and temperature levels. Calcium hardness, alkalinity and cyanuric acid levels must be determined once every fifteen (15) days.

The following microbiological parameters must be tested every two (2) months:

- total coliforms;
- faecal coliforms;
- heterotrophic plate count;
- pseudomonas aeruginosa; and
- faecal streptococci.

All water quality testing and results must be recorded and logged.

Employees engaged in any way in the maintenance of swimming pools must ensure that water quality complies with pool water standard quality requirements specified within the table below from the *DM Guidelines for Swimming Pool Safety* (DM-PH&SD-P7-TG01). Such guidelines must also be consulted for specific information on functional equipment and compliance.

HVAC systems must be maintained to ensure proper ventilation and prevent the accumulation of standing water and bacterial growth that could result in Legionnaires disease.

It must be ensured that any outdoor furnishings used at or in the vicinity of a swimming pool (including parasols and umbrellas) do not create additional public HSE risks. The structure and base of a parasol must be secured against the effects of wind or otherwise fully removed during windy conditions and stored securely. Any objects around swimming pool areas which would pose a risk of falling from height from the building must be removed or sufficiently secured to mitigate such risk.

DM Requirements for Swimming Pool Water Standard Quality

Tests	Permitted Range
Free Chlorine	1-2 mg/litre
Bromine	2-4 mg/litre
pH	7.4-7.6
Total Alkalinity	70-100 ppm
Calcium Hardness	100-500 ppm
Saturation Index	-05. to 0.5
Cyanuric Acid	20-60 mg/litre

5.3.5 Rope Access Work

Rope access work might be necessary to clean otherwise inaccessible building exteriors. All rope access technicians performing rope access operations must be formally trained by an internationally recognised body (e.g. the Industrial Rope Access Trade Association (IRATA)), or otherwise be in receipt and possession of current and valid qualifications approved by DM. Refresher training must be provided in instances where any rope access technician has not used access techniques for a consecutive period of six (6) or more months.

Rope access work may only commence once proper management, planning, risk assessments and necessary supervision controls are in place.

Owners Associations and/or OAMs shall carry out due diligence prior to hiring companies performing rope access work and shall take responsibility for the work being carried out by ensuring that all necessary precautions are in place to protect rope access technicians and the general public.

Planning

As part of the planning process, the following must be fully considered, selected and/or resolved:

- responsibilities of all personnel involved in rope access work;
- Competent Personnel and suitable equipment;
- inspection records; and
- all hazardous materials and environmental hazards (e.g. wind and weather).

Risk Assessment

Site-specific hazards associated with rope access work must be identified and examined to establish ways to remove such hazards or otherwise reduce their impact to an acceptable level through the process of a job safety analysis.

Management and Supervision

Rope access safety and each rope access Project must be supervised independently and properly managed.

A rope access manager is responsible for determining whether rope access is, in the relevant scenario, appropriate and shall:

- otherwise define the appropriate method with detailed planning;
- operate and review a safe system of work;
- select appropriate rope access technicians; and
- ensure all necessary control measures are implemented.

Rope Access Technicians

Rope access technicians must:

- be older than 18;
- weigh less than 100 kg;
- be properly able and willing to work at height;
- undergo regular medical examinations to ensure that they are physically fit;
- not suffer from any of conditions specified in Section 3.1.2.4 of the *DM Guidelines for Rope Access Work* (DM-PH&SD-P7-TG07).

Rope Access Equipment

Suitable rope access equipment must be selected, maintained and regularly inspected.

All rope access equipment must:

- carry a CE mark or the Joint Standards Australia and New Zealand (AS/NZS) mark;
- be easily identifiable;
- include details of Manufacturer and where appropriate, relevant model/type/class of equipment;
- be traceable to certificates of conformity and examination and inspection records; and
- otherwise be appropriate for its application.

Specific key requirements for all other rope access equipment and types of working methods are set specified in the *DM Guidelines for Rope Access Work* (DM-PH&SD-P7-TG07) and must be adhered to.

Inspection of Rope Access Equipment

Rope access equipment must be checked each time prior to work commencing. In addition, general inspection of rope access equipment must take place at least once every three (3) months, with results of such inspections properly recorded and retained.

Thorough examinations by a Competent Person must be undertaken at least once every six (6) months. Additional Manufacturer's recommendations for inspection, care and maintenance of equipment must be strictly adhered to.

Method of Rope Access Work

As part of risk control measures, exclusion zones must be established with consideration as to whether such zones may be appropriate in locations other than at the top and bottom of a rope access project site.

Two independently anchored safety systems must be used to attach rope access technicians and an efficient communication system established. Precautions must be taken to prevent equipment or materials from falling. Welfare facilities, access to drinking water and storage for clothing must be provided for all rope access technicians.

Emergencies and Rescue Work

Owners/Owners Associations/OAMs/appropriate Owner's Representatives shall fully consider all emergency provisions and develop an appropriate rescue plan with specific site requirements for each facility. Appropriate rescue techniques must be practiced regularly to ensure rope access technicians can be recovered quickly and efficiently by rescue teams. Rescue team members must be suitable in number as assessed at the planning stage with such number adjusted as appropriate.

All rescue equipment must be appropriate to the relevant workplace with respect to length of ropes, etc.

First aid provisions must be provided at each worksite and at least two members of a rope access team must have received recognised DM approved first-aid training.

5.4 HSE in the Master Community

The Master Community is divided into Plots, Common Use Facilities and Commercial Facilities in accordance with the Master Plan.

Community Users shall always comply with the MCD and Master Community Rules, which are enforced and monitored by the Managing Agent.

The Managing Agent is also responsible for managing complaints and the general administration of the MCD and the Master Community Rules, including processing and reviewing any related applications, requests, permits and referrals of amendments.

Core services of the Master Community must only be provided by licensed and experienced Contractors.

Community Users shall familiarise themselves with all safety measures and limitations within their surrounding neighborhoods and raise concerns when necessary.

All Common Areas must be kept free and unobstructed to prevent slip and trip hazards.

All Community Users shall adhere to all Master Community Rules which cover, but are not limited to, the following:

- general restrictions relating to pets and animals;
- dangerous and illegal articles and prohibited activities;
- waste disposal and recycling;
- property damage and vandalism;
- general behaviour;
- signage and advertising;
- setting up business; and
- Noise limitations.

Community Users shall ensure that all visitors, guests, Contractors, employees, servants, clients and Occupants comply with the Master Community Rules. Any breach of the Master Community Rules will be managed through the escalation processes and subsequent fining structures specified within the Master Community Rules.

5.4.1 Traffic, Road and Parking Management

Risks associated with vehicle movement within the Master Community must be properly evaluated, with effective procedures and control measures implemented to manage such risks.

Vehicle traffic routes, signage, pedestrian walkways and parking areas must be suitably planned and designed to minimise adverse effects to Community Users and the general public.

All road users in the Master Community shall:

- observe speed limits, authorised directions of travel, marked walkways and kerbs;
- be validly licensed and registered with the Relevant Authorities to operate all vehicles he/she controls within the Master Community;
- ensure that all vehicles he/she operates within the Master Community are suitably registered with the Relevant Authorities;
- on DMCCA's request, provide evidence of any relevant registration or licence identified above; and
- aware of sight limitations and manoeuvrability of vehicles where appropriate.

All users of roads within the Master Community shall be particularly aware and mindful of children when reversing or moving vehicles.

Vehicles must not cause unnecessary Noise, including the use of car horns or other warning devices. All drivers of vehicles using roads within the Master Community roads must be in possession of a valid UAE driver's licence.

Roadworthiness of Vehicles

All vehicles driven, controlled, operated or otherwise used in any way in the Master Community must be fully roadworthy and in compliance with Applicable Legislation which pertain to vehicle and road safety.

Speed Limits

In the absence of specific signage stating speed limits, the maximum speed of all vehicles on Master Community roads must not exceed 60 km/h.

A maximum speed of 10km/h must not be exceeded upon approaching or driving within any designated parking areas.

Prohibition on the Use of Certain Vehicles on Master Community Roads

The use of the following vehicles is prohibited from use within any part of the Master Community (unless formally approved by DMCC at its sole discretion):

- electric bikes;
- electric scooters;
- segways;
- golf buggies;
- dirt bikes;
- trail bikes;
- sand/dune buggies;
- off-road vehicles (other than SUVs and other 4x4 road-worthy vehicles); and
- non-licensed motorized vehicles (including motorized toy vehicles).

Pedestrians must always be afforded the right-of-way over vehicles and push bikes on all walkways, pedestrian crossings, pathways and footpaths.

Parking

Vehicles may only be parked within designated parking areas which may be subject to charges.

Vehicles parked or otherwise stopped or waiting must avoid obstructing any:

- emergency escapes;
- pump stations;
- electrical stations,
- parking area ramps;
- entrances;
- corridors;
- pathways;
- stairways;
- access roads;
- lake shores; and
- entry drives.

Children must not be left unattended in any publicly accessible area, including on or beside roads or any parking facility.

Litter, rubbish and waste may not be deposited or discarded within any parking facility.

Oil, petrol or noxious or flammable materials may not be emptied or discarded or otherwise allowed to escape from any vehicle within a parking facility.

Specific parking limitations and requirements must be in accordance with the specific parking related rules contained within the Master Community Rules.

General Management of Master Community Traffic and Parking Issues

All traffic and parking issues and incidents will be managed by appropriate security and compliance Competent Personnel of the Managing Agent, and, where relevant, any violations shall be reported to the Dubai Police and/or RTA and/or any other Relevant Authority.

Penalties for road users within the Master Community are subject to all traffic regulations applicable in Dubai.

Police, ambulance and fire and emergency vehicles must have unrestricted access to all areas within the Master Community. Designated roadways and traffic areas must be clearly marked for its specific purpose.

5.4.2 Parks and Lakes

The following activities are prohibited in, from or around the lakes located within the Master Community, unless prior written approval is obtained from DMCC or the Managing Agent:

- swimming and diving;
- boating, sailing, water sports or any type of water activities;
- fishing; and
- depositing litter or rubbish or any other activities that could pollute the lakes.

Carers or guardians of children are responsible to ensure that children are monitored and supervised within the vicinity of lakes and their immediate environment, and to ensure that children do not enter or approach the lakes.

Children must be supervised within all parks and playgrounds to ensure their safety and the safety of others.

5.4.3 Common Areas and Common Use Facilities

Common Areas and Common Use Facilities are shared areas and facilities within the Master Community that are under the operation, maintenance, management, administration and control of DMCC for the benefit of all Owners, Occupants and other Community Users.

The requirements set out within these HSE Guidelines and the Master Community Rules which concern Common Areas and/or Common Use Facilities must be properly adhered to, to ensure the safe and appropriate use of all such shared facilities and areas.

All outdoor areas must be regularly maintained and must contain appropriate materials (e.g. bark or sand) within designated areas. Regular inspections and maintenance of all outdoor areas must be scheduled and recorded.

5.5 HSE or Retail Activities, including Operation of F&B Outlets

At the date of publication of these HSE Guidelines, the Master Community was home to approximately 540 retail outlets with over 300 F&B Outlets.

Retail outlets, including F&B Outlets, are expected and required to protect all employees, Contractors, visitors and members of the general public that enter their premises from any harm through adequately identifying, removing and/or controlling HSE risks.

All employers of employees involved in retail activities or operation of F&B Outlets shall ensure that their employees are provided with all suitable health checks and training appropriate to the risks they are exposed to, in accordance with all relevant Applicable Legislation and DMCC Rules and Regulations.

Retailers shall ensure that all signage, first aid requirements, extraction and ventilation specifications are in compliance with all relevant Applicable Legislation and DMCC Rules and Regulations and DM regulations.

Where outside space is utilised, no additional health, safety and environmental risks shall be introduced as a result of such activities.

5.5.1 Trading Service and Retail

General workplace risks apply to this part of the supply chain. These include, for example:

- slips and trips;
- manual handling;
- workstation ergonomics;
- basic hygiene; and
- transport.

More specifically, there can be risks from occupational overuse problems (e.g. repetitive strain or eye strain) from the handling of DSE.

All employers of employees involved in such activities shall ensure that their employees are provided with all suitable training appropriate to the risks they are exposed to, in accordance with all relevant DM regulations.

5.5.2 Cleaning Activities

Cleaning activities include the following risks and hazards:

- slips, trips and falls;
- contact with cleaning chemicals;
- working at height;
- machine cleaning of external and internal floor areas;
- machine cleaning/maintenance;
- verbal abuse;
- musculoskeletal disorders/injuries;
- motor vehicle and lift trucks;
- electrical injury;
- heat stress;
- collecting of waste (sharp or contaminated); and
- fire.

Such risks must be properly assessed and all necessary precautions and control measures implemented to eliminate or reduce their impact.

Cleaning companies registered within the DMCC Free Zone and the Master Community must also be approved for specialised activities by the relevant DM authority.

5.5.3 Beauty, Personal Care and Massage Activities

Businesses involved with beauty, personal care, hygiene and massage activities (**Personal Care Facilities**) must obtain all appropriate licenses from all Relevant Authorities and ensure that all employees have been issued a valid occupational health card prior to operating within the Master Community.

Staff performing personal care activities must be certified by the applicable authority and be in possession of all necessary qualifications to allow them to undertake such activities.

Appropriate consideration must be given to premises location, furniture selection and disinfection, personal care service rooms, water sources and draining systems, tools and supplies being used and provided, cleaning and sterilisation practices and control of insects and rodents.

The following signage and alerts to customers and visitors to Personal Care Facilities must be visibly displayed in both Arabic and English:

- express confirmation that no medical services/procedures are being performed at such Personal Care Facility;
- caution to pregnant visitors from receiving any service; and
- direction to seek medical advice in case of sickness before receiving treatment.

Management of Personal Care Facilities and their personnel must fully cooperate with DMCC inspectors during inspection visits.

A valid pest control contract must be in place and presented immediately upon request.

All *Personal Care Compliance Documentation* shall be carefully consulted and adopted for detailed compliance requirements.

5.6 Industrial HSE

An industrial unit within the DMCC Free Zone and the Master Community is defined as, but is not limited to: any unit or factory which is involved with jewellery manufacturing, processing, refining and cutting, polishing etc.

These activities have specific types of HSE risks, outlined below, which are present in the diamond and gold jewellery supply chain.

5.6.1 Gold Processing and Refining

Gold metal processing and refining may expose workers to risks including:

- molten metal, electro-magnetic radiation and other high temperature sources;
- exposure to toxic chemicals, including hydrochloric acid and chlorine fumes; and
- exposure to rotating plant and equipment (e.g. pumps, crushers and dryers) and mobile equipment.

5.6.2 Cutting and Polishing

Risks associated with manufacturing, cutting and polishing jewellery include dust inhalation, eye strain and poor posture leading to back and shoulder problems, long working hours and Accidents associated with machinery.

Specific examples include:

- lack or misuse of PPE: goggles, rubber gloves, boots, respirators and dust masks may all be required at different stages of production;
- non-availability or non-identification of emergency exits: some factories have all their doors, including the emergency exit doors, locked so as to avoid theft and/or higher insurance premiums; however, such practice is a breach of UAE Civil Defence regulations;
- lack of training for safe operation of machinery;
- unhealthy working conditions: in polishing factories, large amounts of dust may be produced; where appropriate HVAC facilities are not put in place, workers become susceptible to serious or fatal respiratory problems; and
- exposure to toxic fumes and chemicals: there is often a lack of training on chemical substances and protective measures for workers from toxic fumes and chemicals (e.g. cadmium used in solders for gold manufacture or silica dust used in the casting process).

5.6.3 Jewellery Manufacturing

Similar issues are associated with jewellery manufacturing, including:

- lack or misuse of PPE;
- non-availability or non-identification of emergency exits;
- lack of training for safe operation of machinery;
- unhealthy working conditions;
- exposure to toxic fumes and chemicals; and
- eye strain.

5.6.4 Specific Chemical Hazards

Within the fields of work described above, specific hazards require special attention to ensure that they do not pose an unacceptable risk to operations within an individual area or within the wider environment. The information below is in addition to more general requirements detailed in Section 9.8 of these HSE Guidelines.

LPG and Other Flammable Gas

All facilities must ensure that all gas equipment and connections are installed by a competent UAE Civil Defence-approved third-party company and regularly inspected and maintained. All Owners must ensure an annual maintenance contract with an UAE Civil Defence-approved third-party company is in place for the facility.

LPG cylinders are, without exception, prohibited from use inside buildings. Mains for gas supply must be installed and maintained by a UAE Civil Defence-approved specialist.

In addition to existing controls, each facility or device that uses any form of flammable gas must be fitted with a local gas cut-off valve, as well as the ability to isolate individual pieces of equipment for servicing and maintenance purposes.

Furthermore, gas systems must always be properly isolated or closed off when not in use in an effort to prevent failure of end use equipment (e.g. supply pipes to burners), which may result in a dangerous build-up of gas within a facility.

Pressurised Gas Cylinders

All gas cylinders must be stored upright and secured in position by appropriate chain or rope.

Every pressurised gas cylinder has the potential to become a hazardous projectile if dropped or if the valve is damaged. Such hazards include seemingly harmless gases such as nitrogen and argon which must be stored in cages for extra protection.

Compressed gases have the potential to cause asphyxiation where the contained gas replaces a room's general atmosphere. As such, all gas cylinders must be carefully turned off at the cylinder when not in use, and regular leak checks of associated equipment must be conducted.

Where a specific confined space or fire risk may exist, additional controls (e.g. gas detectors which can detect carbon monoxide along with other gases) and/or forced ventilation must be carefully considered and implemented.

Acids and Hazardous Chemicals

Appropriate provision must be made for safe delivery, handling and use of acids and hazardous chemicals.

Waste acid and hazardous chemicals must be collected and disposed of in accordance with DM requirements. Relevant employees must be trained on the storage and handling of acids and hazardous chemicals as well as spillage response.

The use of concentrated acids must only be carried out within close proximity to a fume hood with appropriate neutralisation and extraction, or within another suitable facility with the ability to contain and treat acid vapours and Emissions, to prevent contamination of the local or wider environment. All extraction facilities in individual units must connect to the central scrubber system.

Hydrofluoric Acid (HF)

HF poses a specific hazard requiring additional controls. HF can form a deadly vapour at room temperature and reacts violently with water, producing that vapour. If inhaled or absorbed through skin contact, HF can cause cardiac arrest and requires specialist medical intervention to prevent death.

As such, the use of HF must be restricted to only those processes where no other viable alternative chemical or acid is available. Where HF is used, special measures (discussed further below), must be adopted and followed to safeguard the personnel involved and the wider environment.

Other hazardous chemicals (e.g. cyanide) must only be used when suitable controls have been implemented. Suitable controls include:

- substituting a hazardous chemical for a safer alternative;
- changing processes to minimise contact with hazardous chemicals;
- using fume hoods; and
- using appropriate chemical PPE.

Such controls must cover delivery, handling, use and disposal. Special care must be given to ensure that incompatible chemicals (including acids with chlorine-containing materials or cyanide with hydrochloric acid) are not stored or used together. Refer to Section 9.8 of these HSE Guidelines for additional requirements.

When using any chemical, provision must be made for how to manage spillages. This is especially important when using acids and HF in particular.

Absorbent, neutralising materials must be kept near to or with the acids for quick and efficient use in the event of a spill. Alkaline powders containing calcium carbonate (e.g. lime or chalk) are ideal for this use. Sand must be avoided as the reaction product between HF and sand is hazardous to health.

In the event a person comes into contact with a chemical or acid (including HF), correct information must be given to any medical professionals providing first aid or other medical treatment to that patient.

HF can be hazardous, even through secondary exposure, meaning a person providing medical assistance can themselves be injured by residual HF remaining on or around the person receiving treatment. First aiders and medical providers must therefore be fully informed of all chemicals and acids which the casualty may have been exposed to.

The treatment of HF burns requires the use of calcium gluconate with application either by way of a gel or injection.

Calcium gluconate is a common medication that most doctors will have and so if they are aware of the specific chemical, they should be able to provide suitable treatment to the patient.

Where HF is in use, provision of calcium gluconate gel should be considered to treat minor exposures/burns as water is largely ineffective when treating HF exposure.

First aiders must be trained to deal with chemical-related incidents, and first aid facilities on the premises must be equipped for incidents that may occur with specific chemicals.

5.6.5 Air Emissions

Air Pollution, either directly or indirectly caused by industrial activities, shall be prevented by appropriate control of noxious gases or Emissions through best practicable means.

All businesses and persons deemed to be a source of Air Pollution must prepare and submit an EIA prior to commencing relevant work that could cause Air Pollution.

Source emission (performance) testing for large Emission sources and potentially hazardous or nuisance type sources must be undertaken with results reported to DM. Continuous Emissions monitoring and quarterly reporting must be performed for specified Emission sources.

Toxic Emissions, including mists from plating baths and vapours from cleaning and degreasing procedures where solvents are used, can be generated during gold finishing operations. Exhaust hoods with air filters, mist eliminators and fume scrubbers must be used to control such Emissions. Periodic testing by an independent DM-approved third party must be undertaken as required.

Suitable ventilation or exhaust systems must be installed and good housekeeping practices implemented. Acid baths must be fitted with an extraction hood connected to scrubbers before venting to the environment.

All industrial facilities shall prepare an air Emissions inventory pursuant to the *Emissions Inventors Data Circular*, which shall be presented to all Relevant Authorities upon request. Equipment used for testing and measurements must be provided and suitably maintained and records retained in an appropriate register.

Stack Testing ports and work platforms must be installed at all facilities with the potential to release Air Pollution and performance tests must be carried out by a DM-approved third-party Consultant. 'Annual Stack Emission Testing', as specified and defined in the *Emissions Inventors Data Circular*, must be performed by DM-accredited laboratories if required.

Industrial facilities must comply with allowable 'Emission Limits from Stationary Sources' as detailed in the *Environmental Standards and Allowable Limits Bulletin*.

5.6.6 Water Pollution

As part of the gold finishing process, physical, chemical and electrochemical processes are applied to change surface properties and enhance appearance. Of these, chemical and electrochemical processes are the main producers of Waste Water.

Chemical processes include degreasing, cleaning, pickling, etching and coating, and electrochemical processes include electroplating, polishing, cleaning and anodizing. Such processes are performed in baths, followed by rinsing operations, where chemicals and other toxic compounds can accumulate.

Waste Water resulting from rinsing operations can be comprised of nitric, sulphuric, hydrochloric acid, HF, cyanide, oil and grease components. Rinse water can be conserved by reducing drag-out, reusing the water and recovering of the metals. Cyanide-based metal finishing processes compound additional health and pollution problems and must be suitably controlled.

Sewerage structures and pipework can be attacked by corrosive acids present in Waste Water or overheating of the pipework downstream can occur resulting in the melting of the pipework. Fumes or liquid may be emitted from pipework, potentially at a distance from the source, resulting in nuisance smells if circulated through the air ventilation systems of neighbouring operations.

Environmental impact from the gold finishing industry in the form of toxic compounds that degrade slowly can have a significant negative impact on the environment far from the point of discharge. Furthermore, contaminated soil can pollute surface and ground water and streams.

As such, there is a high probability of serious environmental impact associated with such processes, meaning adequate and appropriate Waste Water treatment is required. To achieve this, a detailed EIA must be undertaken containing appropriate water environment impact analysis.

Environmental Impact Assessments

All EIAs must be in accordance with *Technical Guideline Number (3) EIA Requirements for Non-Major Projects (Category B Projects)*, April 2011 version, of the Environment Department and submitted for approval to the Environment Department. Compliance with an EIA must be demonstrated by sampling and analysing effluent initially and then periodically. Sampling must be undertaken by a DM-approved third party.

Waste Water containing acids and cyanide must be segregated for treatment prior to disposal or reuse for irrigation in accordance with DM Standards for Discharge or Re-use of Wastewater specifications.

A permit for trade Waste Water disposal must be obtained from the Environment Department. Maximum allowable concentrations of substance or pollutant must be specified and the source discharge considered.

Discharge Waste Water must never result in any of the following:

- visible floating particulates, grease and oil;
- undesirable discoloration and odours emanating from receiving waters; or
- changes to the taste, odour, colour and quality of marine resources consumed by humans.

In accordance with Article 10 of the *Environment Protection Regulations*, Waste Water discharged from licenced facilities must be analysed periodically using DM-approved laboratories. Results must be kept in a register and be made available upon request by Relevant Authorities.

Waste Water discharge points must be located at least one (1) metre below the low water mark and accessible for sampling for monitoring purposes.

Industrial facilities must comply with the table below (adapted from the *Environmental Standards and Allowable Limits Bulletin*).

Trade Waste Water must not be mixed with sewage or diluted in any way for the purpose of complying with the quality standards.

Table - DM Maximum Allowable Limits for Discharge to Sewerage System

Parameters	Maximum Limit (mg/L or as noted)
Physico- Chemical	
Biochemical Oxygen Demand	1,000
Chemical Oxygen Demand	3,000
Chlorine – Residual	10
Cyanides as CN	1
Detergents	30
Ammoniacal Nitrogen	40
Oil and Grease – Emulsified	150
Oil and Grease – Free Oil	50
pH (range)	6.0 – 10.0
Phenols	50
Phosphorus (P)	30
Sulfates – Total	500
Sulfides as S	10
Suspended Solids (SS)	500
Temperature	45°C or > 5°C of ambient
Total Dissolved Solids (TDS)	3,000
Metals	
Total Metals	10
Arsenic (As)	0.50
Boron (B)	2.0
Cadmium (Cd)	0.3

5.6.7 Solid and Hazardous Waste

Domestic and industrial waste must be separated and, where applicable, disposed of as hazardous waste. Waste must be recycled and reclaimed where possible and must otherwise be disposed of in accordance with DM disposal requirements.

Chemicals or materials are considered hazardous if they are flammable, oxidising, corrosive, toxic, radioactive or explosive, and could cause harm to the general public or the environment. Industrial processes such as gold beneficiation and refining of wastes, electroplating residues, degreasing waste, mercury, paints and solvent, used oils, industrial chemical and cleaning agents are all sources of hazardous waste.

Hazardous waste arising from industrial activities can include:

- asbestos;
- carbon monoxide;
- cyanide;
- dust and fumes;
- fibreglass;
- flammable liquids;
- inorganic lead;
- isocyanate in paints;
- mercury;
- ozone depleting substances (OSDs);
- polychlorinated biphenyls (PCBs);
- soldering fluxes; and
- synthetic mineral fibres.

During gold refinement, mercury Emissions can occur (dependent on the mercury content of the ore being used as well as the production process and control technology). Mercury is also used for gold assaying and as a gold-plating agent in jewellery manufacturing.

Processes and procedures must be developed regarding the review and use of chemicals and their risks must be communicated to all employees and contractors.

An inventory of all hazardous substances must be maintained and controlled by a responsible person with appropriate authority to approve the introduction of new chemicals into the facility. The inventory with respect to the Jewellery & Gemplex must be submitted to the OAM for record.

Material Safety Data Sheets (MSDS)

Hazardous substances must be accompanied at all times by a valid and current MSDS. Every MSDS must specify the following information for the relevant hazardous substance:

- product name;
- chemical and generic name of certain ingredients;
- chemical and physical properties of the hazardous substance;
- health hazard information;
- precautions for safe use and handling;
- first aid procedures; and
- Manufacturer's or importer's name, address and telephone number.

The storage and handling of hazardous substances must comply with DM guidelines, and storage facilities must be designed with secondary containment features to prevent spillage and contamination of soils and groundwater.

5.6.8 Monitoring and Reporting

Periodic testing of air Emissions and effluents and monitoring of hazardous waste disposal and significant environmental events must be performed and records retained for periodic inspection and audit by DMCC, DM or any other Relevant Authorities.

All unit Owners within the Jewellery & Gemplex must submit their records to the OAM for record.

5.7 HSE Relating to Hotels and Events

Several hotels linked to tourism and business travel operate within the Master Community and provide employment to a large number of people, performing different functions including general housekeeping, front desk, food and beverage, kitchen laundry and facilities management.

Depending upon the tasks they perform, staff within hotels can be exposed to many different health and safety hazards at work, including:

- musculoskeletal disorders and injuries;
- exposure to chemicals;
- thermal stress;
- slips, trips and falls;
- cuts, burns and scalds;
- electrocution; and
- fire and explosion.

Hotel establishments may not engage in tourist activities unless they subscribe to the e-programme according to the *Decree No. 13 of 2011 regarding the e-programme for Hotel and Tourism Establishments in the Emirate of Dubai*, issued by the Government of Dubai.

Organisers of Events held within the DMCC Free Zone and the Master Community must obtain necessary permits from all Relevant Authorities. Applications must be submitted through the DTCM's e-permit system. Provisions for organising Events in the DMCC Free Zone and the Master Community must be in accordance with the Section K of the Government of Dubai Executive Resolution No. (1) *Concerning the Electronic System for Event Permitting Marketing and Distribution of Tickets within the Emirate of Dubai*.

A NOC from DMCC is required for every indoor or outdoor Event and must be obtained at least seven (7) days prior to commencement of the Event. When considering where to grant an NOC, consideration will be given to the Event details, layouts, Occupant Load, provision of location for electrical generators, ambulances, fire trucks, etc. Further requirements relating to cooking, use of LPG, pyrotechnics or fireworks, fire trucks and fire apparatus, electrical safety, structure, manpower and responsibilities must also be considered, as specified in Table 18.18 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

5.7.1 Laundry and Cleaning Operations

During cleaning or housekeeping activities, workers can be exposed to hazardous cleaning chemicals that may be corrosive, irritating, flammable or carcinogenic and which can cause burns, skin rashes or allergic

reactions. When work areas are poorly ventilated and confined, high concentrations of vapour and gas can accumulate.

Tetrachloroethylene and Other Industrial Cleaning Chemicals

Vapour from tetrachloroethylene, commonly used as a dry-cleaning solvent, can be harmful to individuals and can form deadly by-products if involved in a fire. As such, it must be properly and carefully managed, including by undertaking the following:

- tetrachloroethylene must be stored in tight fitting closed containers and kept in well-ventilated areas;
- information on where tetrachloroethylene is stored and used must be made available to UAE Civil Defence in the event of an emergency;
- quantities of tetrachloroethylene stored on a site must be minimised; and
- chemical drums or containers containing tetrachloroethylene must be stored away from the laundry area to reduce the risk of Emissions or fire related hazards.

The use of spot cleaners, usually employed to remove stubborn stains including blood, from white sheets, must also be carefully managed. Some spot cleaners contain HF which can be extremely hazardous to health. Where possible, alternative spot cleaners containing EDTA (ethylenediaminetetraacetic acid) must be used in place of more hazardous HF containing products.

Employees risk exposure to biohazards (e.g. exposure to infected blood or body fluids) if sharp contaminated objects puncture the skin. As such, employees must be made aware of hazards associated with their work to ensure that safe working practices are adopted to avoid chemical and/or biohazard exposure.

Machinery layout and positioning, waste collection practices, fumes and vapours from bleaching chemicals, ventilation, machine specifications, diesel storage and chemical storage must conform with the *DM Safety and Health Requirements for Laundry Operations* (DM-PH&SD-P4-TG26).

Machinery and equipment must be maintained by a DM-approved third party and be part of preventative maintenance program.

5.7.2 Landscaping

Landscapers can be exposed to health hazards on a daily basis, including:

- Noise exposure;
- exposure to pesticides;
- heat stress;
- moving vehicles;
- rotating equipment;
- exposure to manual handling;
- working at height; and
- sharp tools.

Workers must be trained in their activities and inducted by the Managing Agent prior to commencing work within the Master Community.

Landscaped areas must not be damaged or otherwise modified unless prior approval has been obtained from DMCC. Landscaped areas must be maintained and landscaping activities performed without interference with the safety of Community Users.

All landscaping works must be protected from the general public through the use of hard barriers and suitable and erection of sufficient warning signage.

CHAPTER 6 COMMITMENTS AND RESPONSIBILITIES FOR EMPLOYERS AND EMPLOYEES

The responsibility for health and safety in the workplace lies with the employer and employees. Proper and appropriate management is required to ensure the availability of resources to implement, maintain and improve health and safety requirements.

Resources can include organisational infrastructure, technology and financial resources, as well as human and specialised skilled resources. Health and safety roles must be defined, documented and communicated and responsibilities and accountabilities specified to ensure that health and safety for all sectors is properly and effectively managed.

Employers remain legally responsible for conforming to all aspects of Applicable Legislation and international industry best practices ensuring the health and safety of all employees, visitors, members of the general public, the Master Community and adjacent buildings or property that may be directly or indirectly affected by their activities.

Each employee is responsible for his or her own health and safety and for that of the people around him or her. Every employee must fully understand all HSE rules and standards and specifically those HSE rules and standards directly relevant to the work they perform.

6.1 Responsibilities of DMCC HSE Team

The DMCC HSE team is responsible for developing these HSE Guidelines and ensuring that all sectors operating within the DMCC Free Zone and the Master Community meet and comply with the legal requirements set out by Applicable Legislation, DMCC Rules and Regulations, including the Master Community Rules, and the guidance specified in these HSE Guidelines.

The DMCC HSE team is responsible for communicating on behalf of DMCC with other Relevant Authorities within the Emirate of Dubai and the UAE. The DMCC HSE team will perform inspections and audits as specified within these HSE Guidelines and has the authority to issue warnings and fines on all and any HSE violations.

DMCC will update these HSE Guidelines as and when required and in any relevant circumstances (e.g. as a result of regulatory change or any change in scope of works).

6.2 Responsibilities of Employers

All employers, within their respective industry sector, shall have and demonstrate suitable and sufficiently documented HSE procedures to manage their activities and HSE responsibilities.

Such HSE procedures must:

- include all relevant and necessary standards and systems;
- be sufficient and relevant to the nature of the employer's business; and
- incorporate Applicable Legislation, DMCC Rules and Regulations and these HSE Guidelines, as may be amended from time to time.

Employers shall ensure that a copy of all HSE procedures are kept on the commercial premises and made available on request and at all times to any Consultant, employee, inspector, sub-contractor, DMCC or any other Relevant Authority.

Employers shall:

- provide adequate employee training where required to enable employees to carry out their tasks;
- immediately suspend and cease any work deemed to be a hazard to people or property;
- take all precautions necessary to protect employees from any occupational illness;
- conduct periodic medical examinations of employees when required to ensure they are not negatively affected by their work activities;
- ensure all employees work in a manner which is safe and within the requirements specified by Applicable Legislation;
- ensure PPE and personal protective devices designed for employee safety are in proper use at all times;
- ensure all employees are made aware of existing or potential dangers to health and safety from work activities; and
- provide written instructions regarding any protection measures and precautions that need to be taken.

Employers shall appoint:

- competent safety and first aid staff; or
- a competent third-party safety Consultant, approved by DMCC in line with the requirements set out within these HSE Guidelines and Applicable Legislation.

6.3 Responsibilities of the Employee

Employees must, as far as practicable and in accordance with their training and instructions given by their employer:

- take care of their own health and safety and that of other individuals who may be affected by their acts or omissions in the workplace;
- take all reasonable steps to eliminate or minimise risk to themselves and to others.
- not commit any act which may lead to non-compliance with the training and instructions provided by their employer;
- not misuse, damage or interfere with any equipment (including PPE) provided for the protection of their health and safety;
- make proper use of all devices provided for their protection or the protection of others;
- immediately report to their supervisor, any situation that they believe could present a risk to health and safety and which they cannot properly deal with themselves; and
- agree to undertake a medical examination, when required, to screen for occupational illness which could be caused by or linked to their work activities.

6.4 Responsibilities of Appointed HSE Representative

Employers who are in a position of overall responsibility for health and safety of their organisation must appoint an individual to co-ordinate the management of health and safety for their organisation. For the purposes of this section, such individual (or individuals) will be referred to as a Competent Person.

The Competent Person may have any one of a variety of titles (e.g. safety manager, safety advisor, safety officer, etc.) and may be hired internally as a full-time employee or otherwise through an external safety consultant approved by DMCC.

The Competent Person shall act primarily as the health and safety co-ordinator for the organisation within the workplace. The appointment of the Competent Person does not remove or negate any liability or potential liability for the person with overall responsibility for health and safety of an organisation. That person shall continue to retain direct responsibility for the management of health and safety in respect of all work activities.

Important Considerations

Roles of the Competent Person may vary from organisation to organisation. Some may maintain a high level of control and accountability, with others maintain a monitoring role and no more.

For a low-risk environment, an individual without any background in health and safety would require, as an absolute minimum, a basic training course that includes common hazards, safety management and, ideally, a certificate from the National Examination Board in Occupational Safety and Health (NEBOSH).

For a higher risk environment, an accredited diploma in safety and health at work is required. Specialist and high-risk activities may require additional qualifications or training in the specialist field relevant to the tasks involved.

Some organisations, particularly small enterprises, will provide the internally appointed Competent Person with the support of external sources of expertise to assist them with fulfilling competence needs.

Examples of Functions

Some examples of typical functions that may be assigned include:

- carrying out regular hazard inspections and reporting findings to senior management;
- organising safety audits and advising on safety management systems;
- identifying training needs of employees;
- identifying appropriate training courses and additional competence requirements;
- advising management of action required to reduce occupational risks;
- keeping records of examinations, tests, inspections, Accidents, occupational illnesses, dangerous occurrences and emergency exercises;
- increasing safety awareness within an organisation through regular staff and management briefings;
- ensuring safety procedures are in place and being followed by employees;
- investigating Accidents, occupational illnesses and dangerous occurrences;
- building up an information base to allow an organisation to keep abreast of health and safety requirements and to ensure that all appropriate information is disseminated to employees;
- participating in and ensuring that an effective consultation mechanism is maintained within the organisation for health and safety; and
- liaising with DMCC and other Relevant Authorities on health and safety issues.

6.5 Responsibilities in Construction

Contractors remain legally responsible for conformance with all aspects of Applicable Legislation and industry best practices, as well as for ensuring the health and safety of all employees, visitor's attendees and members of the general public on or near the work site and adjacent buildings or property that may be affected during their work.

Each employee on a Project is responsible for his own health and safety and for the people around him or her and must therefore fully understand all Project HSE rules and standards concerned with work he or she performs. Contractors must be aware of their duties as set out in Applicable Legislation and the requirements in these HSE Guidelines.

6.5.1 Responsibilities of the Contractor

All Contractors shall provide and demonstrate a suitable and sufficiently documented HSE Plan that is sufficient to the scope of work and incorporates Applicable Legislation, DMCC Rules and Regulations and these HSE Guidelines, with such to be applied from the date of commencement and for the duration of the Construction work. The HSE Plan shall be approved by the nominated Consultant and submitted to the DMCC HSE department prior to mobilisation.

All Contractors shall take the necessary steps to ensure cooperation between all parties to enable each party to comply with the provisions of the HSE Plan. The Contractor shall ensure that a copy of the HSE Plan is available on request to any Consultant, employee, inspector, sub-contractor, DMCC or any other Relevant Authority.

Every Contractor shall ensure that a health and safety file that shall include all documentation required in terms of the provision of these HSE Guidelines, is opened and kept on site and is made available to the Consultant, DMCC or any other Relevant Authority upon request.

The Contractor shall be responsible to ensure compliance with the HSE Plan. The Contractor shall ensure that all his sub-contractors establish and maintain HSE standards and systems as necessary to comply with Applicable Legislation, DMCC Rules and Regulations, this document and any other requirements of DMCC.

The Contractor shall ensure that, in addition to the documentation required in the health and safety file, there is a comprehensive and updated list of all the sub-contractors on site. The agreements between the parties and the type of work being done are included and available. No sub-contractor shall be appointed to perform Construction work unless the Consultant and Contractor is reasonably satisfied that the sub-contractor he or she intends to appoint has the necessary competencies and resources to perform the Construction work safely.

The Contractor shall appoint safety and medical staff with the approval of the Consultant in line with requirements set out within these HSE Guidelines and Applicable Legislation. Every sub-contractor who carries out or supervises the work shall appoint competent technical staff to supervise the application and method of work in line with the HSE requirements described in these HSE Guidelines. The Contractor shall provide training required for such staff to carry out their tasks which may include suspension of any work that is deemed a hazard to people or property. All training records shall be retained as proof of the type of training provided and who attended the training.

6.5.2 Responsibilities of the Consultant Engineer

Consultant engineers have a responsibility to ensure that all firefighting systems are operating properly, and that appropriate maintenance is provided. The consultant engineer must approve Construction designs, drawings and design loads for all scaffolds prepared by the Contractor used on site prior to erection of scaffolds. The consultant engineer shall approve all support systems erected for trenches 1.25 metres or more in depth. All form work size, dimensions and drawings must be approved by the consultant engineer before pouring of concrete work starts.

The removal of supporting systems from structure elements may only be made once approved by the consultant engineer to ensure safety of the building and to avoid collapse or any damage during the period of weakness or instability. The support of different reinforced steel must be approved by the consultant engineer and designed by the specialized engineer.

The consultant engineer and the Contractor shall ensure that roofs are capable of supporting the imposed loads and to determine if additional supports are required when roof support systems are erected on concrete roofs. All shoring equipment must be inspected by the consultant engineer and the Contractor to ensure that they meet the requirements specified in the shoring design. The steel erection plan developed by the

Contractor must be approved by the consultant engineer. The consultant engineer must supervise any demolition activities, tower crane use and approval of the foundation where the crane will be used.

6.5.3 Responsibilities of the Owner, Owner's Representative and Main Consultant

Owners, Owner's Representatives and Main Consultants must comply with these HSE Guidelines by identifying the risk factors and preparing risk management and emergency preparedness studies for the Construction site from the design stage itself.

The Main Consultant must evaluate the risk factors involved in the type of Construction activity and prepare safety guidelines for such Construction operations.

The building Owner and Project Consultant must provide infrastructure, system features and necessary provisions for interfacing in accordance with the smart monitoring system specifications (see Section 10.12 of these HSE Guidelines) as required by Chapter 16 of the *Fire and Life Safety Code of Practice*.

The Owners of towers or of a Facilities Management Company must ensure that all statutory checks and inspections are performed according to Applicable Legislation.

These HSE Guidelines may not cover all risk factors of the Construction activity. Additional responsibilities for Owners and Consultants for the implementation of fire safety during Construction, modification, alteration and demolition activities are specified in Table 12.1 (Chapter 12) of the *Fire and Life Safety Code of Practice*.

6.6 Responsibilities of the Owners Association (OA) and OA Manager (OAM)

Every Owners Association must appoint an appropriately qualified and licensed OAM who is approved by DMCC. The Owners Association may restrict temporarily or permanently access to certain Common Areas due to an emergency if the DMCC requires use of such area or when such areas are to be cordoned off for to perform work.

6.7 Responsibilities of the Managing Agent

The Managing Agent as appointed by DMCC is responsible for administering and enforcing the Master Community Rules. Additionally, the Managing Agent receives and manages complaints, process applications, requests, permits and amendments, as appropriate, as well as any referrals.

The Managing Agent provides resources and services to support the Master Community particularly in emergencies or in relation to safety, security, comfort and the enjoyment of the community. The Managing Agent's responsibilities include monitoring the use of land, water, facilities and structures within the Common Use Facilities and controlling the use and access of parking structures with the Master Community.

The Managing Agent shall comply with these HSE Guidelines ensuring that all safety provisions have been identified, implemented and monitored and any breaches reported where applicable. The Managing Agent will report to DMCC for all matters in regards to HSE for the Master Community and activities under its supervision.

6.8 Responsibilities of Facilities Management Companies

A UAE Civil Defence-licensed manager shall be appointed by the Facilities Management Company in each facility to supervise the team. Specific duties of each team member with respect to Fire and Life Safety aspects shall be assigned by the facility manager. The Facilities Management Company is responsible for informing the Owner and maintenance companies, where abnormal conditions exist for Fire and Life Safety systems in the building, including balcony and window railings. The Facilities Management Company must ensure that corrective actions are immediately implemented by the Owner. Facilities Management Company are also responsible to:

- ensure building Owners allow the participation of the facility management team in the building Fire and Life Safety systems inspection, testing, commissioning and handing over;
- familiarise themselves with building emergency action plans and understand their role as individuals and as a team;
- visually inspect fire extinguishers weekly for their normal working condition and pressure gauges;
- visually inspect the fire detection and alarm system daily and ensure all fire detection and alarm systems are inspected annually and maintained as required;
- verify emergency evacuation plans and ensure that the building, furniture and other arrangements have not altered the exit routes and exit access ways;
- conduct emergency fire drills for their staff monthly and ensure the participation of the facility management team in emergency fire drill management; and
- adhere to all additional responsibilities and requirements as per Table 18.11 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

6.9 Responsibilities of the Tenants

Tenants shall ensure that all Occupants of their residences or properties and their visitors, guests, contractors, employees, servants and business associates comply with these HSE Guidelines and the Master Community Rules at all times. Tenants are to remove their waste to disposal areas and receptacles designed for that purpose. Minor repairs, maintenance and car-washing of private vehicles (parked in allocated car parking bays that are licensed for such use) by tenants are allowed without the need to obtain a permit to work.

CHAPTER 7 LEGAL REQUIREMENTS

These HSE Guidelines set out the principles of the rules and regulations applicable within the DMCC Free Zone and the Master Community. These HSE Guidelines must be read in conjunction with any other mandates, laws and regulations, amended or introduced from time to time, including the DMCC Rules and Regulations and Applicable Legislation.

7.1 Certificate / NOCs

Prior to conducting industrial operations, and for the purpose of IAOFI inspections necessary for the DMCC licence, other Relevant Authority approvals/NOCs must first be obtained.

Those NOCs as a minimum will include:

- UAE Civil Defence Certificate;
- DM Environmental NOC/Permit; and
- DEWA, RTA, DM, RERA approvals.

Employers will require DMCC NOCs for certain activities, including:

- night works (see process in flow chart in Section 7.3 of these HSE Guidelines);
- storage of hazardous substances;
- use of hazardous substances;
- Construction, including mobilisation and shoring;
- road closures;
- weekend working;
- dewatering;
- design, including concept design, shop drawings, mock ups and signs; and
- every indoor or outdoor Event.

7.2 Permits

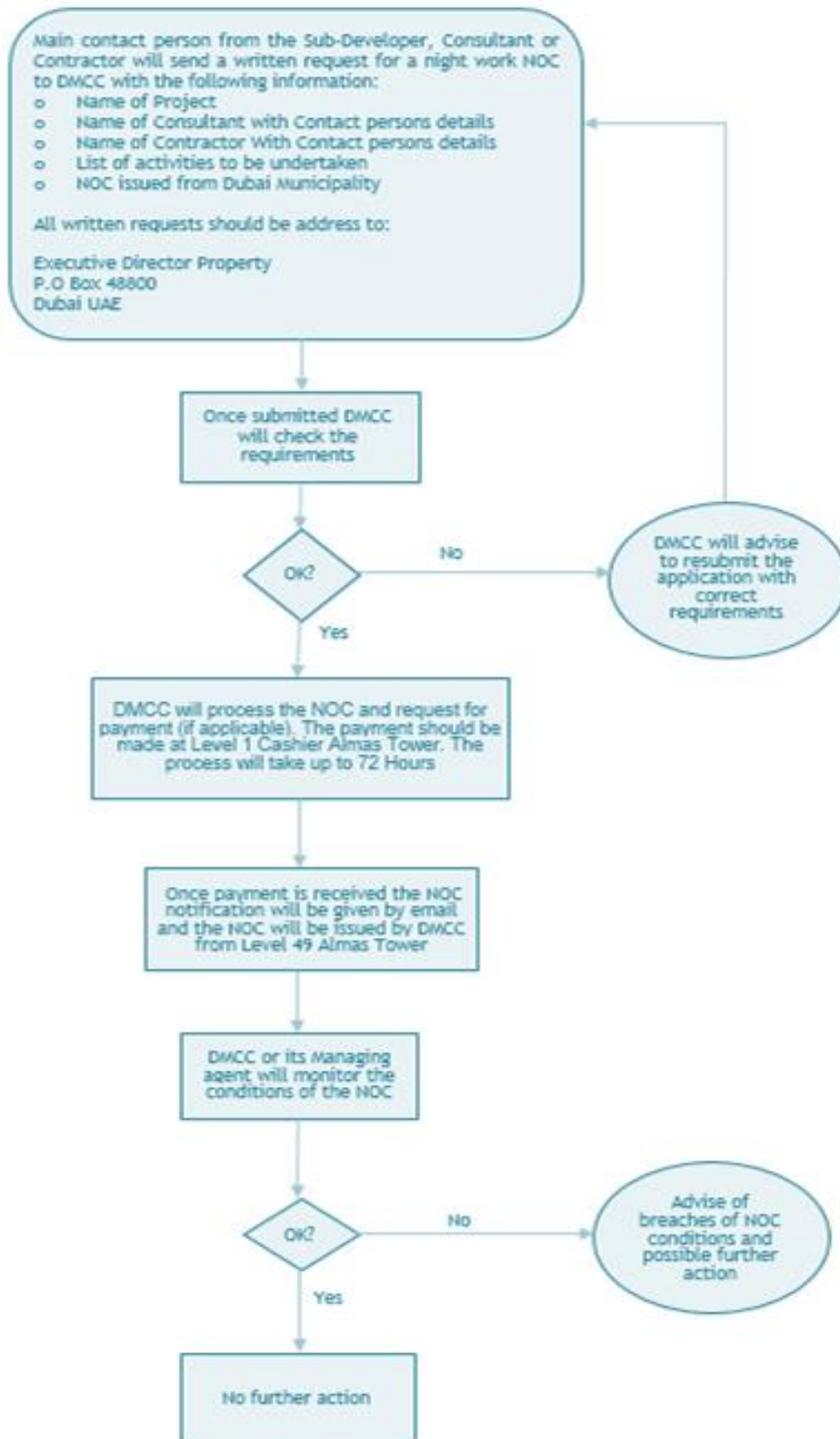
Appointed Contractors and service providers working within the jurisdiction of the DMCC Free Zone and the Master Community and in the towers must obtain approval of any plans, designs and drawings of the proposed work prior to starting the actual work activities. The Contractor and service provider must obtain the necessary work permits or maintenance contracts prior to entering or carrying out any physical work activities within the Master Community.

An NOC must be obtained from DMCC and/or any other Relevant Authorities, as applicable, as a pre-requisite for the submission of the permit application by the Contractor and service provider for the necessary work permits (e.g. access, general work, hot work, excavation work) from the Managing Agent.

The Contractor and service provider must submit the following documents with their permit application:

- company trade license;
- workmen compensation and third-party liability policies;
- letter of appointment from DMCC, Owners Association and OAM;
- risk assessment and method statement;
- employee's competence certificate;
- machines and equipment inspection and test certificate;
- NOCs from Relevant Authorities, as applicable; and
- permit fees, as applicable

7.3 DMCC NOC Process



CHAPTER 8 HEALTH, SAFETY AND ENVIRONMENTAL PLAN

The HSE Plan is a specific document and must be developed and tailored to contain the relevant work activity-related information, HSE management issues, policy, arrangements, control measures and an overall safe system of work for performing the activities in a healthy, safe and environmentally friendly manner. The HSE Plan must align with the guidance set out within these HSE Guidelines and in accordance with Applicable Legislation.

8.1 Company Information

At a minimum, the following information must be included in the HSE Plan:

- the company name and company license number of reference;
- the company contact information;
- HSE Plan version and date of issue;
- signatures of the reviewer and approver; and
- Consultant's name and contact information.

Additionally, for Construction Projects, the HSE Plan must include:

- a brief overview of the proposed Project and the scope of work;
- Contractor's name and contact information; and
- Consultant's name and contact information.

8.2 Company Description

This section of the HSE Plan must include a brief overview about the scope of work as well as the following:

- location;
- scope;
- working hours;
- overall and planned activities;
- environmental baseline; and
- NOCs, permits and licenses required.

Additionally, for Construction Projects, the HSE Plan must include:

- Project schedule and milestones; and
- Project planned activities.

8.3 Objectives and Targets

The HSE Plan must show the HSE targets set out by the employer. These objectives must be 'SMART' and related to the scope of work.

8.4 Roles and Responsibilities

The HSE Plan must give a detailed outline of key personnel whilst defining clearly their responsibilities. The HSE Plan must be updated in accordance with any changes in the workplace. The relevant roles may include:

- managing director;
- general manager;
- individual in charge;
- HSE personnel;
- supervisors;
- male nurse/first aiders;
- fire arrangements;
- fire marshals; and
- fire training.

Additionally, for Construction Projects, the HSE Plan must include:

- Project director;
- engineers;
- Project manager;
- Construction managers; and
- inspector of the works.

8.5 HSE Management

The HSE Plan must also provide for:

- HSE Policies and management commitment;
- HSE arrangements;
- environmental commitments;
- promotion and motivation;
- safe work practices and procedures;
- safe systems of work and permits;
- machinery and equipment;
- workplace audits and inspections;
- emergency response;
- training;
- meetings;
- Accident/incident investigation and lesson learned;
- risk management and mitigation controls;
- statistical reporting, recording and trend analysis;
- occupational health and medical provisions;
- fire and fire prevention;
- environmental impacts and waste management;
- storage, transport and handling of dangerous substances; and
- site security and layout arrangement for Construction Projects.

CHAPTER 9 HEALTH AND SAFETY REQUIREMENTS

Employers and Contractors must at all times be aware of their legal obligations as well as of their moral obligation and duty to preserve life and to keep their workplace free of Accidents and incidents. This can be effectively carried out by managing HSE, implementing safe systems of work and by providing information, instruction and training to their workforce.

DMCC reminds all employers of their legal duty to comply with all Applicable Legislation, DMCC Rules and Regulations and the requirements of these HSE Guidelines.

9.1 Safe Working Practices

Employers shall establish and implement their methods for maintaining safe working practices and safe systems of work for performing their activities in the workplace. This can be achieved through various plans, procedures, permits or safe systems of work depending on the activity.

Safe working procedures can be submitted within the HSE Plan.

Typical examples of activities that require safe systems of work include:

- fire safety;
- emergency response;
- electrical safety;
- safe use of gas;
- hot works;
- PPE;
- management of substances hazardous to health;
- machinery and equipment;
- lifting, including cranes, hoists and lifting gears;
- excavations;
- working at height on scaffolding and working platforms;
- road works and works within live traffic;
- confined space;
- working near live, overhead or underground services;
- working near water;
- tunnelling;
- energy isolation; and
- shuttering and form work.

Contractors, service providers and individuals undertaking work or providing services within the Master Community must adhere to the permit to work requirements imposed by the Managing Agent.

9.2 Machinery Equipment

Employers shall ensure that all items of machinery and equipment necessary to perform the work are maintained and in good order.

All third-party inspections of machinery and equipment must be undertaken as required by a DAC-registered inspection body approved by DMCC.

DMCC and their nominated representative reserves the right to inspect items of machinery and equipment brought into the workplace by an employer. Should any DMCC employee or their representative form the opinion that any item is inadequate, faulty, unsafe or in any other way unsuitable

for the safe and satisfactory execution of the work for which it is intended, they shall advise the employer, who shall immediately remove the item and replace it with a safe and adequate substitute.

Employers shall ensure that all machinery, equipment, power and hand tools brought into the workplace are:

- appropriate for the type of work to be performed;
- approved, inspected, tested, numbered and tagged (if appropriate) in accordance with HSE statutory regulations of Applicable Legislation and DMCC Rules and Regulations, before importation into the workplace;
- properly maintained in accordance with Manufacturer's recommendations or preventative maintenance scheme;
- fitted with appropriate guards and clear directions for safe use; and
- placed on register and checked at least monthly and/or more frequently as required.

Employees must be instructed and trained in how to use equipment, machinery and tools to ensure their proper and safe use. Records of all training provided must be kept.

Every person who supplies, leases or maintains any machinery, equipment or tools shall ensure that such equipment is safe to use and in good condition. This is to ensure that there is no danger to people operating them if they comply with the equipment's operating instructions. Defective tools and machinery must be removed from service.

Employees must be protected from moving parts of machinery by effective guarding. Appropriate enclosures must be selected based on the type of hazard. Safe guarding recommendations for circular saws, band saw machines, revolving machinery, grinding wheels, power pressers, shears and guillotine machines and rolling machines and use of incidental safety devices must be in accordance with the *DM Guidelines for Guarding of Dangerous Machinery (DM-PH&SD-P4-TG06)*.

In the Construction industry, the use of hand and power operated tools must be in line with recommendations in Chapter 14 of the *Code of Construction Safety Practice*.

9.2.1 Registers

Employers shall:

- set up an initial set of registers;
- complete the register for each piece of machinery, tools and equipment brought into the workplace;
- maintain a complete, continuous and comprehensive inspection and service history in these registers;
- ensure regular inspections are conducted and recorded for all tools and equipment by a Competent Person;
- have a suitable and sufficient colour code system in place to allow for monitoring; and
- maintain all calibration records of machinery and equipment.

9.2.2 Extraction and Scrubbers

Industrial units must have individual scrubber units connected to the centralised system for the use of hazardous chemicals and as an exhaust for any furnace. Local exhaust is prohibited. All units in the Jewellery & Gemplex must be connected to the building's centralised exhaust system.

The employer must periodically carry out maintenance on the scrubbers so that they are fully operational at all times. All individual scrubber systems must have a chemical dosing system which must be properly checked and maintained by the employer.

Maintenance records must be kept within the unit for inspection at any time by DMCC or any other Relevant Authority.

Flexible or non-fire rated pipe connecting the exhaust of the furnace to the building's centralised exhaust system is strictly prohibited. All exhaust pipe connections must be of a high-density pipe type and fire rated when used for connecting the furnace or individual scrubber to the building's centralised exhaust system. Exhaust pipe connections to a building's centralised exhaust system may not exceed 1.5m.

All exhaust fans above the ceiling must be checked and maintained every quarter with the power to the exhaust being switched on twenty-four (24) hours a day and supplied with an un-switched fused spur.

A building's fresh air system must not be closed.

9.2.3 Site Cranes, Hoists and Plant

Cranes may not be erected where the jib would traverse over a public road or public space in general without the written permission of DMCC. Cranes are not allowed to over-steer each other.

Loads may not be carried over public areas, including cantilever platform for loading and unloading on the public movement elevation.

Any hoist, lifting beam, site-based crane or any other Construction plant that is involved in lifting material above the public areas must be covered by suitable public indemnity insurance with coverage and evidence provided to DMCC indicating that a policy is in place.

A suitable and sufficient lifting plan must be established for any lifting works, whether or not critical. A critical lift plan which includes suitable and sufficient risk assessments must be produced and approved prior to a major or special lifting operation and for each type of crane to ensure adequate precautionary measures are taken.

Exclusion zones must be established before any lifting operation.

Employees associated with the use of cranes, hoists or plant must be trained in their operation.

Additional requirements are set out in Chapter 22 of the *Code of Construction Safety Practice* and must be adhered to when using cranes, hoists and platforms during Construction work in DMCC.

9.3 Access and Egress

Employers must implement necessary precautions to allow for safe access and egress for employees and visitors. Machinery must not come into unnecessary contact with individuals. Access and egress must be defined by clear signs and segregation. Emergency routes must be identified and kept clear at all times. All access and egress points must be kept free of rubbish, waste and stored items with suitable and sufficient illumination and warnings of entrances and exits. Emergency doors may not be locked at any time. Common Areas must be free of rubbish, waste, stored items and kept in an acceptable condition at all times.

In Construction, the Contractor shall make a site layout plan that must be approved by the Consultant. The site layout plan must highlight clear access and egress throughout the site and the site layout must

be in accordance with the boundary of the site or that as approved by DMCC or any other Relevant Authority, as applicable.

No excavations or holes may be left open near entrances or exits unless there are suitable warnings and protection to reduce the risk of falls. Muster points and assembly areas must be kept clear at all times and stored materials must be confined to designated areas only.

9.4 Workplace Signs, signals and barricades

Employers must provide the necessary signs in English, Arabic and in the most common language used by employees to warn of the potential workplace hazards and to prevent Accidents. Signs must conform to international standards and Applicable Legislation and contain distinctive colours used to identify different hazards.

In Construction, the Contractor shall provide the necessary signs, signals and barricades to warn people and the general public of the potential workplace hazards and to prevent Accidents. A flagman or suitable traffic control must be used to control traffic in and around the work site. A qualified banksman (rigger) must be used for directing crane operations and the only person to signal to the operator at any time. Barricades in the form of railings must be used to prevent the risk of falls with concrete or plastic barriers filled with water or sand used for vehicle separation and barricading of trenches and pits. Flashing amber lights must be used to warn of Construction activities at night.

Specifics on Construction site signs, signals and barricades must be in accordance with Chapter 6 of the *Code of Construction Safety Practice*

9.5 Electrical Safety

Electricity is extensively used as part of daily workplace activities. Electrical hazards range from electrical shock, burns, arc blasts, fire and explosions to falls. Electrical systems and circuits must be designed, constructed, operated, inspected, tested and maintained in accordance with DM requirements.

The employer or Contractor shall take the necessary steps to prevent hazards and risks through any electrical work or equipment. All individuals working with electrical equipment shall wear suitable and sufficient PPE to eliminate the risk from shock or burns. Individuals working near electricity must be provided training on the use of suitable fire extinguishers. Water must not be around electricity work at any time. Prior to maintenance operations, the electrical current must be disconnected using a lockout tag-out system.

All electrical appliances being used must be inspected by a Competent Person. Equipment must be tagged with an inspection tag and colour coded if the equipment is deemed fit for use. Any equipment that does not display the inspection tag or colour code must be immediately removed. Electrical wires must be suitably managed to protect them from damage and any defective or corroded wires must be immediately replaced. The electrical circuit must not be overloaded as this may result in the risk of fire.

Necessary protective devices (e.g. earth leakage circuit breakers) must be used in the electrical circuit to avoid shocks, and all fuses and circuit breakers in panels clearly marked. All requirements of electrical installation and safety regarding machines, equipment and electrical apparatus being used must be applied in the form of a safe working procedure, produced by the employer with suitable and sufficient risk assessment for individual electrical work.

The provisions and requirements from the DEWA *Regulations for Electrical Installations 2017* must be adhered to in terms of design, erection, inspection and testing of all electrical installations within premises and any additions and alterations to the existing buildings and installations. Additionally, the DEWA *Regulations for Electrical and Water Installations - Inclusion of Design Requirements for Green Building Specification (SMCS/46/2008)* must be considered for electrical wiring and installations in.

When isolation of any electrical supply is required, a safe system of work must be implemented inclusive of lockout tag-out systems. Only qualified, trained Competent Personnel may perform electrical work while wearing appropriate PPE.

Employers shall consider and adhere to general requirements from the *DM Guidelines for Electrical Safety at Work* (DM-PH&SD-P4-TG05) and the *Code of Construction Safety Practice*, where appropriate.

In accordance with the DM Local Order No. (10) of 2003 *Concerning Technical Conditions To be Fulfilled by Electrical Equipment in the Emirate of Dubai*, electrical equipment used must bear the relevant conformity mark and identify the Manufacturer, trademark and the purpose of the field for which the equipment is manufactured.

9.6 Personal Protective Equipment (PPE)

PPE refers to protective clothing and other garments such as gloves, protective footwear, helmets, goggles and ear plugs, all of which are designed to protect individuals from exposure to job-related occupational hazards.

PPE is mandatory where the risk to health and safety has not been adequately controlled by other means in the hierarchy of hazard control.

All employers shall assess and identify the processes requiring a specific type of PPE in accordance with statutory requirements. The following DM guidelines provide detailed information pertaining to PPE requirements in the workplace and must be complied with:

- *Guidelines for Personal Protective Equipment - Head Protection* (DM-PH&SD-P4-TG08);
- *Guidelines for Personal Protective Equipment - Eye and face Protection* (DM-PH&SD-P4-TG09);
- *Guidelines for Personal Protective Equipment - Hearing Protection* (DM-PH&SD-P4-TG10);
- *Guidelines for Personal Protective Equipment - Protective Clothing* (DM-PH&SD-P4-TG11);
- *Guidelines for Personal Protective Equipment - Hand Protection* (DM-PH&SD-P4-TG12);
- *Guidelines for Personal Protective Equipment - Foot Protection* (DM-PH&SD-P4-TG13);
- *Guidelines for Personal Protective Equipment - Fall Protection/Safety Lines* (DM-PH&SD-P4-TG14); and
- *Guidelines for Personal Protective Equipment - Respiratory Protection* (DM-PH&SD-P4-TG15).

To be effective, PPE must:

- be appropriate for the risks and hazards involved and the conditions where the exposure to the risk may occur;
- take account of ergonomic requirements and state of health of the individual wearing it;
- be capable of fitting the wearer correctly after adjustment; and
- be effective in preventing/adequately controlling the risks without increasing the overall risk.

The following mandatory PPE must be used;

- face mask, apron, gloves and goggles when working with chemicals;
- steel toed footwear;
- gloves suitable for the task;
- coveralls; and
- eye protection when working with machinery.

In Construction, the following mandatory PPE must be used:

- safety helmets conforming to international standards;
- steel toed footwear conforming to international standards; and
- high visibility vests or coveralls.

Additional, detailed requirements for PPE to be used in Construction can be found in Chapter 4 of the *Code of Construction Safety Practice*.

Employers shall establish the requirements of various types and uses of PPE for safe execution of the activities. Adequate stock levels of PPE must be maintained to ensure that an adequate supply is available for employee requirements. Employees must be trained on the proper use, care and maintenance of PPE. Signs must be posted in the workplace wherever it is necessary to use PPE. These signs serve as a useful reminder to workers of the kind of PPE that must be used.

9.7 Hot Work

Hot work refers to heat- or spark-producing operations like grinding, welding, thermal or oxygen cutting, heating or burning. Precautions must be implemented prior to the commencement of any hot work to prevent the possibility of fire or explosion, especially in environments that contain flammable, combustible and explosive material. Hazards associated with hot work can include fire and explosions, burns, exposure to fumes and gases, electricity and radiation.

9.7.1 Welding

Hot work must only be performed when a hot work permit is in place as is required by the *Code of Construction Safety Practice*. Method statements and risk assessments must be completed and approved to ensure that hazards and equipment are assessed and effective procedures and controls measures are in place to manage hot work operations. Hot work must only be performed when welders, cutters and supervisors are trained in the safe operation of their equipment, safe welding and cutting practices and the use of respiratory and fire protection.

Welding equipment must be inspected daily and defective equipment removed from service, replaced or repaired. Qualified Competent Personnel must inspect equipment again before use once it has been returned to service. The *Code of Construction Safety Practice* must be consulted for additional requirements relating to fire prevention and protection, personal protection equipment requirements, health protection and ventilation requirements and specific welding practices.

When conducting welding, oxy-acetylene cutting and grinding operations in elevated areas, fireproof blankets must be used to minimise sparks, reduce the risk of fire and protect surrounding structures. When welding is being carried out at ground level, welding screens and/or fireproof blankets must be used to minimise sparks, reduce the risk of fire and protect nearby workers from a flash or penetrating eye injury.

If there is a potential for the outbreak of fire, consideration must be given to the use of a firewatcher. Fully operational fire extinguishers must be accessible within easy reach of the hot work area. Welding equipment must be inspected before use and in good condition. Flashback arresters must be fitted to oxy-acetylene units at the regulator. Flashback arresters must also be fitted at the torch end.

Welding shall not be carried out without appropriate PPE, i.e. welding shields, safety glasses, dry welding gloves, welding apron, long sleeve shirt, long trousers and safety helmet. Good ventilation in the work area is of primary importance for the safe performance of this type of work. Additionally, an exclusion zone must be considered to exclude non-essential access.

Metal cutting, grinding, oxygen–fuel gas cutting, brazing, soldering or welding must not be permitted within 10.7m of a point of transfer while filling operations of LPG are in progress (see Chapter 11 of the *Fire and Life Safety Code of Practice*).

9.7.2 Grinding and Cutting

All electrically-supplied portable equipment and power cables must be checked for defects before its use. Portable equipment for grinding and cutting must be maintained on a regular basis in order to verify the condition of electrical isolation. Particular precautions must be taken when working in a wet environment for the risk of electrical shock and when grinding/cutting in elevated positions or overhead for the risks of falling parts on to personnel working below.

Gloves, protective equipment and appropriate goggles must be used in all grinding and cutting work. Grinding wheels must be inspected at frequent intervals for wear or damage with correct discs to be fitted for the job. The speed of replaced wheels must be checked for compatibility to match the speed of the machine. Right rotation must be checked at the beginning of each operation and pressure used on the grinder must not slow the motor. The machine must be disconnected after use. Portable equipment must not be left unsecured on scaffold flooring or other positions above transit areas to prevent accidental falling onto personnel working below.

Particular attention must be given to the possibility of overheating metallic grinded particles which could drop onto combustible materials and initiate a fire in the surrounded area. All electrical hand tools and equipment must be inspected by a Competent Person and require colour coding with a visible sticker. An inspection sticker using proper colour coding must be placed on machinery, power cables and hand tools. Competent Personnel must use a standard checklist for inspecting machinery, equipment, hand tools and documented records must be maintained. Training must be given by a Competent Person for the safe use of hand tools, and a safe working procedure implemented by the Contractor.

In Construction, detailed requirements for welding and cutting activities must be in accordance with specifications in Chapter 15 of the *Code of Construction Safety Practice*.

9.8 Hazardous Substances

Employers shall not carry out any task that is liable to expose any of their workers to hazardous substances unless a suitable and sufficient assessment of the risks and mitigating steps are taken to meet HSE regulatory requirements. Control measures by engineering methods (e.g. scrubber systems connected to the building's exhaust ventilation in industrial units) and the use of appropriate PPE are to be implemented.

An inventory list of all hazardous substances must be compiled and available for inspection and audit purposes. For the Jewellery & Gemplex, all unit Owners must keep the inventory list up to date and submit a copy to the OAM for record.

Health surveillance and monitoring for employees working directly with hazardous chemicals must be undertaken periodically by the employee. Biological monitoring of workers must be performed for workers with a substantial risk of exposure. According to the *DM Guidelines for Safe use of Industrial Organic Solvents* (DM-PH&SD-P4-TG16), employees engaged in handling and using organic solvents must be medically examined at least once every twelve (12) months.

Exposure limits to organic solvents must be kept to the Threshold Limit Values adopted by the American Conference of Governmental Industrial Hygienists (ACGIH) and followed by DM.

Employers shall comply with Applicable Legislation, DMCC Rules and Regulations and these HSE Guidelines, in order to assure safety in the use of chemicals at work.

The major focus of such measures which provide for safety of employees are, in particular:

- the handling of hazardous chemicals;
- the storage of hazardous chemicals;
- the transport of hazardous chemicals, consistent with Applicable Legislation; and

- the disposal and treatment of hazardous chemicals and hazardous waste products, consistent with Applicable Legislation.

When receiving chemicals from suppliers, employers shall ensure that:

- such chemicals have been classified;
- such chemicals are marked;
- hazardous chemicals are labelled;
- MSDS for hazardous chemicals are provided; and
- such chemicals are stored, secured and transported properly.

If employees could potentially be exposed to hazardous chemicals, such employees must be safeguarded against the risk of injury or disease from these chemicals. Exposure must not exceed international exposure limits or other exposure criteria for the evaluation and control of the working environment, established by DMCC or any other Relevant Authority, or by a body approved or recognised by DMCC or any other Relevant Authority in accordance with Applicable Legislation and/or international standards.

Control measures to provide protection for employees may be any combination of the following:

- good design and installation practice;
- totally enclosed process and handling systems;
- segregation of the hazardous process from the operators or from other processes;
- plant processes or work systems which minimize generation of, or suppress or contain, hazardous dust, fumes, etc., and which limit the area of contamination in the event of spills and leaks;
- partial enclosure, with maintained scrubber systems connected to the buildings exhaust system;
- sufficient general ventilation; and
- emergency eye wash and safety shower station.

Work systems and practices include:

- reduction in the number of employees exposed and exclusion of non-essential access;
- reduction in the period of exposure to workers;
- regular cleaning of contaminated walls, surfaces, etc.;
- use and proper maintenance of engineering control measures;
- provision of means for safe storage and disposal of chemicals hazardous to health;
- personal protection (where the above measures do not suffice, suitable PPE must be provided until such time as the risk is eliminated or minimised to a level that would not pose a threat to health);
- prohibition of eating, chewing, drinking and smoking in contaminated areas;
- use of signs and notices;
- adequate arrangements in the event of an emergency (e.g. eye wash stations or showers); and
- strict control of chemicals known to have carcinogenic, mutagenic or teratogenic health effects.

Solvent-resistant gloves (PVC) or gloves that are effective against the specific solvent and solvent-resistant boots and aprons must always be worn. When handling organic solvents, safety glasses, goggles or face shields must be worn.

9.8.1 Material Safety Data Sheets (MSDSs)

An MSDS is a document that gives detailed information about the nature of a chemical product, such as its physical and chemical properties, health, safety, fire and environmental hazards. In addition to giving information about the nature of a chemical, an MSDS also indicates how to work safely with a chemical and what to do if there is an accidental spill.

MSDSs are designed for:

- employees who may be exposed to hazardous materials; and
- emergency personnel (e.g. firefighters), who may have to clean up a spill or release.

MSDSs contain the same basic kinds of information, such as:

- chemical identity;
- name of the product;
- Manufacturer's information: name, address, phone number and emergency phone number of the Manufacturer;
- hazardous ingredients/identity information;
- all common (trade) names (since chemicals are often known by different names);
- the permissible exposure limit for each hazardous ingredient;
- physical/chemical characteristics, including boiling point, vapour pressure and density, melting point and evaporation rate;
- fire and explosion hazard data, including flash point, flammability limits, ways to extinguish, special firefighting procedures and unusual fire and explosion hazards;
- reactivity data, including how certain materials react with others when mixed or stored together;
- health hazard data, including health effects (acute = immediate; chronic = long-term), ways the hazard can enter the body (lungs, skin or mouth), symptoms of exposure and emergency and first aid procedures;
- precautions of safe handling and use, including what to do in case materials spill or leak, how to dispose of waste safely and how to handle and store materials in a safe manner; and
- control measures, including ventilation, type of respirator/filter to use and PPE.

All hazardous substances must be received and transported with an accompanying MSDS from the vendor. Employers must request the MSDS from the distributor that sold the hazardous substance; employees may also request the MSDS.

The MSDS must be available with the chemical in the workplace and understood by the employees using the substances. All employees must have easy access to the MSDSs at the workplace.

A register of all relevant MSDSs must be maintained and kept up to date, and all MSDSs must be available for inspection by the inspectors or officers from DM.

9.8.2 Record Keeping

Record keeping is an essential element of the work practices which provide a safe use of chemicals.

Records must be kept by employers on measurements of airborne hazardous chemicals. Personal sampling measurements, including the exposures calculated, must be recorded. Such records must be clearly marked by date, work area and plant location.

The employees, DMCC, any other Relevant Authority and the OAMs for the particular building, where applicable, must have access to these records.

In addition to the numerical results of measurements, the monitoring data should include, for example:

- the marking of the hazardous chemical;
- the location, nature, dimensions and other distinctive features of the workplace where static measurements were made;
- the exact location at which personal monitoring measurements were made with the names and job titles of the workers involved;
- the source or sources of airborne Emissions, their location and the type of work and operations being performed during sampling;

- relevant information on the functioning of the process, engineering controls, ventilation and weather conditions with respect to the Emissions;
- the sampling instrument used, its accessories and the method of analysis;
- the date and exact time of sampling;
- the duration of the workers' exposure, the use or non-use of respiratory protection and other comments relating to the exposure evaluation; and
- the names of the individuals responsible for the sampling and for the analytical determinations.

Signed records of attendance of training courses must be kept for a specified period of time of at least five (5) years.

9.8.3 Information and Training

The provision of correct information and quality training are essential components of a successful chemical hazard communication program.

Employers must ensure that their employees are:

- informed of the hazards associated with chemicals used at their workplace;
- instructed on how to obtain and use the information provided on labels and material safety data sheets;
- trained in the correct and effective use of the control measures, in particular the engineering control measures and measures for personal protection provided, and made aware of their significance;
- instructed on how to use chemical safety data sheets, along with information specific to the workplace, as a basis for the preparation of instruction to employees, which must be in writing if appropriate; and
- trained on a continuing basis in the working systems and practices to be followed and their significance for safety in the use of chemicals at work, and in how to deal with emergencies.

The extent of the training and instruction received and required must be reviewed and updated simultaneously with the review of the working systems and practices.

Such review must include the consideration of:

- whether employees understand when protective equipment is required and its limitations;
- whether employees understand the most effective use of the engineering control measures provided;
- whether employees are familiar with procedures in the event of an emergency involving a hazardous chemical; and
- procedures for the exchange of information between shift workers.

A chemical hazard communication program must take into consideration the recommendations in Chapter 18 of the *Code of Construction Safety Practice*.

9.9 Manual Handling

Manual handling is defined as the lifting, lowering, carrying, pushing and pulling of any object. If inappropriately executed, manual handling can result in musculoskeletal disorders that cause injury, damage or disorder of the joints or other tissues in the upper/lower limbs or the back. Staff that are

particularly at risk are bellmen, office boys, Construction workers, storekeepers, delivery personnel, housekeepers and laundry and kitchen staff who perform manual handling activities regularly.

Manual handling activities must be avoided as far as reasonably practicable or a suitable, and sufficient risk assessment performed if it cannot be avoided. When developing and implementing preventative and protective control measures, the task, load, working environment and individual capabilities must be considered.

When using lifting equipment or accessories, the risks must be assessed and control measures implemented to prevent injury to people who might be exposed to such activities.

Employers must train their employees in the use of lifting equipment and notify them of the hazards of slipping, rolling, falling and pinching. Furthermore, a qualified individual must be present during any lifts to ensure proper preparation and safe execution, as well as clear communication with the operators of the lifting equipment.

9.10 Working at Height

Working at height is defined as work where there is a risk of an employee falling from height through, into or onto a place or structure. Working at height activities may arise from roof work, use of ladders, working platforms or scaffolds, use of tower cranes or use of building maintenance units (**BMUs**) for cleaning or maintenance activities. Each site must be evaluated individually to assess fall hazards and to ensure that risk management practices are in place and suitably controlled.

Injuries from falling objects must be prevented by establishing exclusion zones, erecting warning signs and using bolt bags and tool carriers. Hard hats must be worn where appropriate.

Harnesses, lines and safety belts must be provided to protect employees who may be affected by hazards from using elevated platforms in compliance with the *Environment Protection Regulations*. Safety belts must be used to prevent falls when working at height that exceed 3m and the work platform is not provided with standard railing and toe boards. Safety belts or harnesses must also be worn when scaffolding is erected or dismantled and the scaffold platform is not provided with a proper railing. Specifications for safety harnesses are detailed in the *DM Guidelines for Personal Protective Equipment - Fall Protection/Safety Lines* (DM-PH&SD-P4-TG14).

Where fall arrest systems are being used, emergency planning procedures must be implemented as suggested in these HSE Guidelines with a specific rescue plan and incident response procedures. Rescue equipment must be available to retrieve employees in case of an incident to prevent possible suspension trauma incidents. PPE must be selected as appropriate to the task and inspected regularly.

Walkways, stairways and crossways installed at levels exceeding 1.8m must be provided with handrails and toe boards.

Metal ladders, metal scaffolds and metallic floorings on support structures must never be used for electrical work or when working on electrical equipment.

Statutory inspections of equipment and accessories used when working at height must follow DM requirements.

Employees working at height must be trained by an approved training provider and refresher training conducted where appropriate.

9.10.1 Ladders and Steps

Access must be carried by the scaffold platform at all times. Ladders must only be used to access platforms and must be securely fastened to stable structures to prevent slipping or falling. Steps must not

be used. Exceptional use of steps may only be considered after it is determined that the space is too small for a scaffold.

Ladder misuse is the cause of many serious Accidents, though many Accidents could be prevented, including by more frequent inspection of the ladder prior to use; adequate securing of the ladder before use; and the application of safe work methods whilst using a ladder. Defective or provisionally repaired ladders, homemade wooden ladders, scaffolds, walkways and stairways must never be used for reaching elevated positions.

Hand tools and small equipment must be securely held in an appropriate bag and never carried by hand while climbing or descending a ladder. Heavy or bulky equipment or tools must be raised and lowered by means of hand lines and never carried while climbing or descending a ladder.

Personnel placing and using ladders for access on site must comply fully with the legislative provisions and the minimum standards in relation to developing procedures for safe use, selection and maintenance.

9.10.2 Elevated Work Platforms

Any personnel required to operate an elevated work platform (**EWP**) 'Boom Type' must have the appropriate operator certificate of competency from a DAC-registered 3rd party approved by DMCC.

All personnel intending to operate on the EWP must ensure that all safe work procedures are followed. Pre-start safety checks must be completed and logbooks filled in prior to use.

Where personnel are required to enter or exit from a raised EWP, a risk assessment and/or a job safety analysis must be conducted. The responsible supervisor must be notified on each occasion and ensure the appropriate procedures are in place before giving consent for this activity to take place.

Double lanyards appropriately attached to a secure attachment points must be used at all times. Full body harnesses fitted with the appropriate lanyard attached to a secure anchor point must be worn correctly at all times by personnel operating on the EWP.

Workers using man baskets must have proof of appropriate instruction and be competent to use the unit safely. The instruction to use a man basket and the permit to work necessary must be detailed in a specific procedure prepared by the Contractor.

9.10.3 Scaffold and Work Platforms

The erection, use and dismantling of scaffolding creates hazards and must be considered and controlled.

Detailed information and requirements must be defined by the Contractor in a specific scaffolding procedure. The application of such procedure extends to the management of all mobile, independent, suspended and cantilever scaffolding on site. The erecting of scaffolding on site must be in compliance with Applicable Legislation, DMCC Rules and Regulations and the minimum requirements detailed in the contractor's procedure. This section describes the minimum requirements to be adopted to manage the level of risk and ensure compliance with legislative requirements.

All scaffolds used on site must be erected, modified and dismantled by a certified scaffolder and inspected and signed off fit for use by a competent, certified scaffolding inspector, with a training certificate received from a provider approved by DMCC, DAC and DM.

Unauthorised persons must not interfere with completed scaffold at any time. Drums and similar items must not be used as components of scaffolds or work platforms. Mobile scaffolds and work platforms must have wheels locked while in use and must not be moved while people occupy the scaffold or platform.

A scaff-tag system must be used on all scaffolds to show the condition of the scaffold. All work platforms must have appropriate edge protection, with unrestricted safe access. The scaffold supervisor/inspector/foreman or a suitably qualified designated person must conduct routine daily inspections, in particular after bad weather or when the scaffold has not been in use for a prolonged period site, to ensure the scaffold has not been altered and remains in a safe condition.

All scaffolds must be inspected on weekly basis by a certified scaffolding inspector. Separate third-party training by a DAC- and DMCC-approved provider must be undertaken for the scaffold workers who erect or dismantle any type of scaffold, and records of such training must be kept.

All temporary platforms/walkways must be equipped with a solid decking that is free of openings and with standard guardrail systems. Personnel working or travelling on temporary elevated platforms must wear an approved safety harness/lanyard system at all times. Personnel working/travelling on temporary platforms with fall exposure must secure their lanyards to an anchorage point capable of supporting at least 5,000 pounds (2,500 kg) or designed as part of a complete personal fall arrest system that maintains a safety factor of at least two (2).

Personnel working or travelling on completed temporary platforms that are free from deck openings and equipped with standard guardrails are not required to secure their lanyards if they remain within the confines of the temporary platform and guardrail system. All temporary platforms must meet engineering and manufacturing specifications prior to any employee usage of the platform.

Work platforms must be erected with appropriate toe boards to prevent falling objects. Temporary work platforms must be verified daily by designated Competent Personnel prior to use by any personnel. A coloured tag shall be placed on the platform to readily identify the platform as periodically Inspected and safe for use. Every temporary work platform must be provided with a safe means of access/egress. Retractable lifelines must be used while ascending or descending access ladders to temporary work platforms or walkways with a fall hazard exceeding 3m.

9.11 Lifting Operations

Lifting operations is defined as the operation of lifting and lowering a load using lifting equipment. Devices used to perform lifting operations includes mobile cranes, tower cranes, gantry cranes, hoists and elevating platforms.

Chains, ropes and lifting gear must be tested every six (6) months by a Competent Person from a DAC-approved third-party company approved by the DM. The certificate from this inspection must specify the safe working load and available for inspection by DMCC or DM. All rigging equipment must be inspected before each shift and throughout to ensure its suitability and that it is safe to use. Prior to any lifting operation, an approved exclusion zone must be put in place.

Cranes, hoists, lifts, lifting appliances and gears and forklifts must be tested and certified every twelve (12) months by a Competent Person according to the DM *Guidelines for Examination and Certification of Cranes, Hoists, Lifts and other Lifting Appliances* (DM-PH&SD-P4-TG 21).

Lifting equipment must be clearly identifiable including safe working loads and stored on racks within clean and well-ventilated areas. If lifting gear has been modified (e.g. lengthened, repaired or welded), such gear must be retested and examined by a Competent Person and issued a valid testing certificate.

A register of all lifting equipment and lifting accessories must be maintained at each facility. A planned and preventative maintenance program must be developed according to manufacturing recommendations to ensure that risks associated with the deterioration of lifting equipment and accessories are reduced.

When using slings made of alloy steel chain, wire rope, natural rope and synthetic fiber, the specifications defined in the *Code of Construction Safety Practice* must be adhered to at all times.

Employees operating lifting equipment must hold the appropriate licences as required under Applicable Legislation. Employees using lifting equipment and accessories must be trained in general safe working practices as well as how to recognise and respond to hazards.

9.12 Legionella Control

Legionella bacteria can colonize in water in distribution systems that can result in Legionnaires disease which is progressive and sometimes fatal.

Areas that are particularly at risk include water systems with temperatures ranging from 20°C to 45°C, cooling towers, evaporate condensers, hot and cold water systems, spas, fountains, waterfall systems, evaporate air coolers, misters, air washers and humidifiers, dead legs and part of water systems used intermittently.

Employers must ensure that risks of exposure to legionella are minimised through the introduction of safe operating procedures and sufficient maintenance and monitoring practices of building water systems where cooling water systems, hot and cold water and all types of water features are operational.

Maintenance practices must be implemented to ensure that water systems are kept clean and are monitored regularly, including through regular visual inspections (wherever possible).

Records to be maintained include the following:

- names of personnel responsible for system operation and shutdown;
- operations and maintenance manuals, including water systems schematics;
- system water volume, date and method of determination;
- inspections, maintenance, infection control dates and results of each inspection;
- details of treatment procedures, including type and use of biocide;
- MSDSs for all chemicals used; and
- result of any testing of the systems and microbiological testing of water samples.

The following must be maintained, cleaned, disinfected and checked periodically:

- all equipment and devices used with irrigation systems, swimming pools, spa pools, whirlpool baths, hydrotherapy pools and jacuzzis; and
- water features with a water storage volume of over 1,000 litres and which create a water spray or aerosol (e.g. waterfalls, ponds and streams),

in order to minimize the risk of legionella bacteria or germs contamination and ensure that maximum limits outlined in the *Guideline for the Control of Legionella in Water Systems* are not exceeded.

Microbial levels in all water systems must be monitored quarterly for both aerobic count and legionella except that aerobic count in cooling towers must be monitored monthly. Laboratories used for analysis of microbiological samples must be accredited by DAC and DM.

If microbiological testing of water from cooling water systems, hot, warm and cold-water systems indicate the presence of 1000 or more colony forming units of legionella per litre of water, the report must be submitted to the DMCC and any other Relevant Authority as required within twenty-four (24) hours of receiving such report.

Inspection and cleaning frequencies, adherence to the action level requirements and testing and subsequent treatment regimes must be in accordance with the *Guideline for the Control of Legionella in Water Systems*.

An emergency plan, including emergency decontamination protocols, must be established by employers in line with the *Guideline for the Control of Legionella in Water Systems* to protect the public health and prevent further infection or major outbreaks of Legionnaires disease.

9.13 Kitchens

Food and health safety requirements are controlled and managed by the Managing Agent and DM. Sectors handling and preparing food must adhere to regulations of the Food Control Department of DM and requirements from the DM *Food Code*. Food safety is beyond the scope of these HSE Guidelines.

General HSE hazards associated with food handling and preparation, including burns, unguarded machinery, slips and trips and cuts, must be identified and suitably controlled. Specific requirements for machinery within food preparation areas, gas safety, fume ventilations, deep fat fryer, cold stores, PPE, first aid and specific firefighting requirements must be implemented in accordance with the DM *Guidelines for Health & Safety in Kitchens & Food Preparation Areas* (DM-PH&SD-P4-TG19).

Pests cause food safety problems and transmit pathogenic organisms and diseases to humans. Food preparation facilities must be kept clear of pests such as rodents, insects, birds and animals.

Facilities and surrounding areas must be regularly inspected to identify signs of pest infestation. Immediate controls must be implemented whenever pests are detected. Pests must be controlled by a specialist pest control company that is approved to deliver such services, ensuring that pesticides and control methods used conform to Applicable Legislation and specifications. Records of pest control inspections, surveys and services must be maintained and must include details of contracts with the pest control company; name of qualified technician performing the service; chemicals, procedures and methods used with frequency of application; and inspection and monitoring practices.

Kitchens must be fitted with carbon monoxide alarms and gas detectors suitable for the particular environment. Such alarms and detectors must be regularly inspected as part of a maintenance regime in line with the Manufacturer's recommendations and UAE Civil Defence requirements to ensure they remain operational. Kitchen hoods must be provided with fusible link heat detection and alarm systems (pre-engineered systems are acceptable) as per Section 3.6 (Chapter 8) of the *Fire and Life Safety Code of Practice* as well as fire suppression systems.

Additionally, adequate and effective ventilation systems must be provided to ensure complete combustion of gas and removal of combustion products along with regular maintenance of all kitchen appliances by a Competent Person. Ventilation systems for cooking operations and inspections of kitchen hood ventilation systems must adhere to requirements in, respectively, Sections 2.18 and 5.2 (Chapter 10) of the *Fire and Life Safety Code of Practice*. Inspection records must be retained for the purpose of inspection and audit by DMCC and any other Relevant Authority.

9.14 Use of Liquid Petroleum Gas (LPG) Cylinders

The use and storage of LPG is strictly prohibited inside buildings. LPGs may only be used with a NOC from UAE Civil Defence. LPG cylinder and pipe installations are not permitted in locations specified in Section 2.2 (Chapter 11) of the *Fire and Life Safety Code of Practice*. A list of LPG cylinders must be provided and approved by UAE Civil Defence.

The use of LPG-filled cylinders has the potential risk of fire and explosion as a result of gas escaping. Employees and the public need to be protected by implementing suitable handling, storage and transporting practices. LPGs must only be sourced from distributors that are authorised and approved by DM.

Gas cylinders must be regularly examined for their general condition, any corrosion effects and damaged valves. LPG cylinders must be hydrostatically tested and LPG tanks must be inspected and revalidated by LPG manufacturers and suppliers every five (5) years. Cylinders must be colour coded as red (Class

2.1 Flammable gas hazard warning label). The date of manufacture and hydro testing information must be clearly stamped on the cylinder in accordance with the DM *Guidelines for Liquefied Petroleum Gas Cylinders* (DM-PH&SD-P4-TG27).

All LPG installations must be inspected and maintained every three (3) months by installation and maintenance companies approved by UAE Civil Defence. Inspection and maintenance manuals must be kept at the facility and available for inspection by DMCC, UAE Civil Defence and any other applicable Relevant Authorities.

Table 11.14 (Chapter 11) of the *Fire and Life Safety Code of Practice* must be consulted for the specific inspection and maintenance requirements and frequencies for:

- tanks;
- pressure relief valves;
- shutoff valves;
- gauges;
- pressure regulation valves;
- filling points;
- piping joints; and
- LPG detection and alarm systems.

Additional specifications for inspection and maintenance regimes of LPG system equipment must be in accordance with Section 2.3 (Chapter 11) of the *Fire and Life Safety Code of Practice*.

When working with compressed gas cylinders, the following must be adhered to:

- a maximum quantity of four (4) cylinders of 44 kg in one group in allowed outdoors in an enclosure for commercial usage. Two cylinders shall be main and two cylinders shall be reserve in a common manifold with isolation valves;
- compressed gas cylinders must be secured within a protection cage in an upright position at all times, except for short periods when being carried or hoisted;
- compressed gas cylinders must not be used as, or placed where they may become, part of an electrical circuit;
- the valves of compressed gas cylinders must be completely closed when not in use; and
- compressed gas cylinders must not be transported with the gauges attached. The gauges must be removed from the cylinders and valve protective caps put in place during any long transportation.

At Construction sites, the following additional requirements must be adhered to:

- gauges must be removed from compressed gas cylinders and valve protection caps put in place before moving any such cylinders, except where the cylinders are secured in a carrier designed for such use;
- gas bottles must be fitted with flame arresters;
- compressed gas cylinders must not be hoisted by the valve cap or by means of magnets/slings;
- compressed gas cylinders must be transported in an upright position with appropriate cage arrangement and must not be hauled in equipment beds or truck beds on their side. Cylinders lifted from one elevation to another must be lifted only in racks or containers designed for that purpose;
- a special trolley equipped with a fire extinguisher must be used for the transportation within the site and during the usage;

- compressed gas cylinders must not be taken into a confined space;
- compressed gas cylinders must never be used as rollers;
- oxygen cylinders must be kept free of oil and grease;
- cylinders must be secured with rope or strong plastic band strips, with such securing around the body of the cylinder, midway between top and bottom. Securing around the cylinder neck or by the valve cap is prohibited;
- cylinders must not be tied to any part of any scaffolding structure;
- cylinders whether in use or not must not be exposed to direct sunlight for long periods of time. Wet 'burlap' sacking material must be used to keep cylinders shaded and covered to prevent overheating of the contents; and
- if a key wrench is required, it must be placed on the valve of acetylene bottles at all times during use.

Gas cylinders must be stored in designated dry and well-ventilated storage facilities where oxygen cylinders are appropriately segregated from any other gas cylinders.

The storage of gas cylinders with other incompatible gas cylinders must be avoided and 'No Smoking' signs must be displayed. Empty cylinders must be removed immediately from the work area and returned to the main storage area.

Compressed gas cylinders must be stored/located to avoid exposure to sparks, hot slag or flames. If these cannot be avoided, fire-resistant shields must be provided.

Cylinders must be stored away from highly combustible materials and egress routes (e.g. stairways and elevators) and with appropriate fire extinguishers provided.

LPG cylinder storage, bulk gas and centralized distribution and infrastructure installations must be evaluated by UAE Civil Defence-approved Contractors. All LPG designers, installers, commissioners and maintenance personnel must be qualified, approved and licensed by UAE Civil Defence. This is to ensure that LPG systems are installed in safe locations and distances to buildings, materials and equipment used are according to set test standards and approvals and access to such LPG installations for firefighting purposes are appropriate.

Particular attention must be given to LPG transfer operations with respect to location and access, qualifications of operation personnel, sources of ignition, storage and distribution facilities and parking requirements.

Additional requirements must be adhered to at Construction sites:

- welding gases must be stored in isolated areas and segregated by type of gas and according to status; and
- damaged or defective cylinders must not be used, and must be tagged, stored in a safe quarantined area and returned to the vendor as soon as possible.

Additional and detailed use, handling and storage requirements are summarised in the *DM Technical Guidelines for Industrial Compressed Gas Cylinders* (DM-PH&SD-P4-TG01) and the *Code of Construction Safety Practice*.

All materials, systems, assemblies, cylinders, tanks, pipes and fittings, equipment, controls, devices, products and accessories used for LPG systems and management must be listed, approved and registered by the Material Approval Department of UAE Civil Defence and meet standards specified in Section 6 (Chapter 11) of the *Fire and Life Safety Code of Practice*.

9.15 Heating, Ventilation and Air Conditioning

Well-maintained HVAC systems are vital to the safety and well-being of all Occupants. Inspection and maintenance programs must be in place to prevent breakdowns, malfunctions, outages and property loss. Such programs are also essential to prevent exposure to Legionnaires disease and carbon monoxide exposure, among other HSE issues.

The cleanliness of HVAC equipment must be maintained and all parts must be inspected in accordance with the applicable indoor air quality requirements in the *Green Building Regulations*. Air conditioning ducts must be cleaned every year and filters must be cleaned every month with details recorded and records retained as specified in the *DM Guidelines for Shopping Malls & Centers* (DM-PH&SD-P7-WI14).

Inspection and cleaning of HVAC systems must be performed by specialised companies that are approved by DM and DMCC.

Thermal comfort for buildings must be provided at least 95% of the year following dry bulb temperature ranging between 22.5°C and 25.5°C. Relative humidity must be between 30% and 60% in accordance with the applicable indoor air quality requirements in the *Green Building Regulations*.

9.16 Boilers and Pressure Vessels

Boilers and pressure vessels are potentially dangerous and Accidents can happen when they are poorly designed, incorrectly sited and not properly operated and maintained.

Consideration must be given to a boiler's specification and condition, the manner in which the boiler is operated and maintained, safe systems of work, awareness and competency of operators, reliability of the electronic control system, inspection and examination frequency and Manufacturer's instruction for operation and maintenance.

In accordance with the *DM Guidelines for Examination and Certification of Boilers and Pressure Vessels* (DM-PH&SD-P4-TG20), thorough inspections must be performed at the time of installation and then once every twelve (12) months. Examinations and inspections must be completed by Competent Personnel approved by the DM Health & Safety Department. External inspections must include steam or water leakage, checks of pressure gauge, water level gauges, safety relief valves, low water level fuel cut off or feed controls, piping, connections and fitting and blow off piping. Internal inspections and hydrostatic and steam tests must meet the requirements outlined in the *DM Guidelines for Examination and Certification of Boilers and Pressure Vessels* (DM-PH&SD-P4-TG20).

Upon successful inspection and examination, a safety certificate must be issued by the Competent Person reflecting the repairs, alteration and re-rating of working pressure made to the vessel. The safety certificate must be retained and available for inspections or audits.

9.17 Confined Space

A confined space is defined as any space of an enclosed nature where there is a risk of death or serious injury from hazardous substances or dangerous conditions (e.g. lack of oxygen or only one means of access and egress).

Some confined spaces are fairly easy to identify, including:

- enclosures with limited openings;
- storage tanks;
- silos;
- reaction vessels;
- enclosed drains and sewers; and

- vessels or tanks of more than 1 metre in depth.

Others may be less obvious, but can be equally dangerous, including:

- open-topped chambers;
- vats;
- combustion chambers in furnaces etc.;
- ductwork;
- unventilated or poorly ventilated rooms; and
- water tanks.

It is not possible to provide a comprehensive list of confined spaces. Some places may become confined spaces when work is carried out or during their Construction, fabrication or subsequent modification. A suitable and sufficient assessment of the risks for all work activities is required for the purpose of deciding what measures are necessary to ensure safety.

A list of confined spaces on the site must be prepared by the Contractor and updated if new confined spaces are discovered. Appropriate warning signs must be posted on all confined space working areas within the site to warn employees of the dangers and that confined spaces require a permit to work.

Dangers can arise in confined spaces, including due to lack of oxygen, poisonous gas, fume or vapour, ingress of liquids and solids, fire and explosions, residues, dust or temperature. Drinking water and washing facilities must be provided by the Contractor in the confined space work area.

Specific third-party training for work in confined spaces is required for all personnel involved in this type of work. The risk assessment must highlight the need to check that the atmosphere is free from both toxic and flammable vapours and that there is an adequate concentration of oxygen prior to entry. A competently trained (by a DMCC-approved third party) person using a suitable gas detector, which is correctly calibrated and third party-tested, must carry out the testing.

A permit to work system must be used to control entry into a confined space specifying the type of work, possible hazards, PPE, tools and equipment to be used, gas monitoring, isolations and all other safety precautions that were considered and are to be understood by the workers involved.

Permission to enter confined spaces may only be given by a person who:

- has received appropriate (DMCC-approved) third party training; and
- is authorised and competent to sign a confined-space permit to work.

Personnel required to enter confined spaces must:

- be mentally suitable (e.g. not claustrophobic) and physically fit; and
- have received appropriate (DMCC-approved) third party training in the hazards presented by confined spaces and the procedures to be followed.

Confined space work may only be undertaken where approved plans for the rescue of people in an emergency are in place and understood emergency. Consideration must be given to Accidents arising out of specified risks as well as any other Accident in which a person may need to be recovered.

Confined space entry must be supervised at all times and a buddy system utilised. Self-containing breathing apparatus must be used when the condition of the atmosphere is unsafe or is likely to change. Additional requirements for confined space entry must be adhered to as specified in the *DM Guidelines for Entry into Confined Spaces (DM-PH&SD-P4-TG04)*.

9.18 Heat Stress

Heat stress refers to employees working in high-temperature environments relating to the weather, especially in the summer months, or site operations that include exposure to furnaces, ovens or other

high-temperature operations. Wearing certain PPE, as required, could also result in the elevation of body temperature that could result in heat exhaustion or heat stroke.

It is important to be able to recognise signs and symptoms for heat cramps, heat exhaustion and heat strokes to ensure appropriate treatment is administered. Specific signs and symptoms of heat stress related conditions are summarised in the *DM Guidelines for Heat Stress at Work* (DM-PH&SD-P4-TG 03).

Employees must be encouraged to increase their water intake and take regular breaks during the hottest part of the day. Work schedules must be planned in order to ensure employees can adapt to heat for better acclimatisation. Heat protective clothing must be provided where necessary, and lightweight clothing provided to cover most areas of the body. Adequate medical facilities must be available to deal with heat stress emergencies.

9.19 Lone working

Lone working is prohibited by DMCC. Employers are responsible for the health, safety and welfare at work of all of their employees. Lone working includes a person working alone in the following circumstances:

- in a small workshop, kiosk or shop;
- for a long period, such as in factories, warehouses or leisure centres;
- outside normal hours (e.g. cleaners, security and maintenance or repair staff).

9.20 Furniture and Storage

Materials must be handled and stored efficiently to ensure that improper handling and storing do not result in costly injuries and that stored materials do not create a hazard for employees.

The accessibility of stored materials to the user and the condition of the containers where the materials are being stored when stacking and piling materials must be considered. Storage areas must be kept free from accumulated materials that can cause tripping, fires or explosions or that may contribute to the harbouring of rats and other pests.

Additional furniture and storage requirements that must be adhered to are set out below.

9.20.1 Storage within the Master Community

Goods or equipment must be properly stored without requiring the creation of mezzanine levels or the use of false ceilings for storage purposes. If either type of storage is required, approval must be sought from DMCC or any other Relevant Authority. Heavy loads must not be suspended from ceilings or the main structure, and floors must not be loaded with weights exceeding their safety limits.

Storage on balconies must be limited to outdoor or balcony furniture, and no goods or materials may be left, stored, placed or hung on balconies. High winds can cause objects to be blown from balconies; all goods or equipment stored on balconies must be secured to prevent the risk of them falling from the balcony.

Barbecues on balconies are prohibited and additional restrictions must be adhered to for the storage of barbecues in relation to window, balconies and building facades. Potted plants on balconies must be secured such that there is no risk of such plants falling off the balcony (Section 5 of the Master Community Rules).

Furniture and personal items that could cause slip and trip hazards must not be left in the Common Use Facilities and must not hinder or obstruct regular maintenance and cleaning operations or interfere with reasonable access and use.

9.20.2 Hazardous Substances

All handlers of hazardous substances must be trained on the safe handling, storing, transport and use, as well as the disposal and containment procedure in the event of an accidental spill.

Hazardous materials and waste must be stored in a manner that reduces the risks of worker exposure, spills, fires and explosions. A safe working procedure and hazardous substances assessment must be completed by the employer.

A hazardous substance storage facility must be placed on site, lockable and ventilated, and controlled by a Competent Person.

Chemicals and organic solvents must be labelled according to their class of risk. The approved class label must be affixed to the container, as well as any subsidiary risk labels for secondary risks.

Labels, tags and warning signs on hazardous substances must be written in Arabic and English (see Chapter 18 of the *Code of Construction Safety Practice*).

Additional storage and handling practices must be in accordance with the *DM Guidelines for Safe use of Industrial Organic Solvents* (DM-PH&SD-P4-TG16).

9.20.3 Identification, Segregation and Storage of Waste

Employers are responsible for the correct management of waste, dangerous and otherwise, produced by them in line with Applicable Legislation. The management of waste must be documented, from the transport/disposal authorisation to that testifying that disposal has taken place, and such documentation must always be available in the workplace.

All costs related to the correct, final disposal of the waste generated during an employer's activities will be at the employer's charge.

The employer must maintain the workplace for which he is responsible. The workplace must be kept clean and tidy, and a special area, segregated and made impermeable, must be designated for the separation and differentiated collection of waste, complete with appropriately labelled containers. The employer must also organize waste disposal activities in such a manner that they comply with the time and management conditions dictated by the DMCC Rules and Regulations and Applicable Legislation.

The correct identification, segregation (see the *Technical Guidelines No. 7 Mandatory Waste Segregation*, 2015 Revision, of the Waste Management Department of DM) and storage of waste prior to disposal is essential to ensure that the most suitable method of disposal is selected.

Waste classification (non-hazardous, domestic and municipal, hazardous waste – see *Technical Guidelines No 5. Waste Classification*, 2015 Revision, of the Waste Management Department of DM for guidance) must be in accordance with Applicable Legislation.

9.21 Slips, Trips and Falls

Slips and trips are a major cause of injury in the workplace, and injuries must be prevented by taking reasonable precautions after assessing the risks.

The following steps may be taken to prevent Accidents resulting from slips and trips:

- prevent the contamination of floors by fixing leaks from machinery or buildings and ensuring plant and equipment are maintained;
- plan pedestrian and vehicle routes to avoid contaminated areas;

- use effective cleaning procedures appropriate to the type of floor, use detergent mixed at the correct concentration, ensure that smooth-cleaned floors are not left wet and exclude pedestrians until the floors are dry;
- maintain flooring in work environments by checking for and replacing loose or damaged flooring, ensuring that lighting is sufficient and ensuring that slopes and steps are clearly visible;
- provide slip-resistant footwear where floors cannot be kept clean or dry and ensure footwear selected is suitable for the environment;
- organise work in ways that is organised and managed to avoid rushing, overcrowding or trailing cables;
- ensure that floor surfaces do not have holes, are not uneven or slippery and are kept free of obstructions or any article or substance that may cause a person to slip, trip or fall;
- clean floor surfaces after individuals wash their vehicles and remove residues; and
- clean up spills quickly and effectively and keep floors free from contamination.

Employees must report to their employers immediately when a Near Miss or Accident happens or if they see a spillage or items on floors that could cause trips to ensure they are removed to prevent future Accidents.

CHAPTER 10 FIRE PREVENTION, PROTECTION AND CONTROL

Employers must proactively organize and manage their workplace at all times to prevent the risk of fire so far as is reasonably practicable.

Employers' fire prevention program must be in place for the workplace, and fire safety awareness must be cultivated among employees. Fire safety training must be conducted.

Fire detection and alarm systems must be installed in specific areas within the buildings and must not be tampered with or modified without prior approval from UAE Civil Defence. Fire detection systems must be periodically inspected by a UAE Civil Defence-approved third party and kept well maintained at all times.

Fire points must be established in all facilities, equipped with fire extinguishers and clearly marked. Fire protection equipment is critical and so must be tested on a regular basis and subjected to regular preventive maintenance system checks to ensure that the system remains fully operational at all times.

Emergency response teams must be formed and trained to handle emergencies. The employer is responsible for establishing and monitoring appropriate fire prevention and protection, personnel escape and emergency response arrangements.

Fire safety services must only be provided by suppliers approved by DMCC and the Managing Agent.

Fire protection/prevention systems must include the designation of fire marshals for each facility. Drills must be conducted on a regular basis in order to test the efficiency of the emergency response plan and to familiarise employees with emergency escape routes and procedures.

General fire protection/prevention measures to be adopted include:

- procedures that are to be followed when fire occurs must be written in Arabic, English and the other most common language on site, and must be displayed at entrances and exits and near telephone sets. These procedures must include important telephone numbers and details on how to evacuate the building correctly;
- smoking is prohibited and signs placed in areas where appropriate;
- locking of fire doors at any time is prohibited; and
- all routes and passageways must be maintained free of any obstacles.

If a fire occurs, the employer must report it to DMCC as per the reporting procedure in these HSE Guidelines and the employer, Owners Association and OAMs must produce a report highlighting the root cause and corrective and preventive actions which must be submitted to DMCC in the Event of any fire occurring.

Employees must be provided training on:

- what they must do in case of a fire in the workplace, including the steps to be taken should an emergency occur, how to safely evacuate the building and the location of the assembly points; and
- basic measures in respect of firefighting, as required by UAE Civil Defence, including the correct use of fire protection equipment; and
- fire safety rules and regulations.

Where applicable, gas appliances, fuel and installation pipes work must be regularly inspected and maintained in a safe condition. All inspections, tests, repairs or maintenance work on such installation must be carried out by a Competent Person certified by UAE Civil Defence. UAE Civil Defence, DMCC and the appropriate Relevant Authority must be immediately notified of any leak from a gas appliance or pipe work.

Carbon monoxide (CO) detection systems must be provided in all enclosed parking structures, retail units and industrial units. Such CO detection system must be electrically operated, complete with control panel and interfacing with ventilation system (Table 3.37 (Chapter 3) of *Fire and Life Safety Code of Practice*). In accordance with the applicable indoor air quality requirements in the *Green Building Regulations*, one CO sensor must be installed per 400 m² area of an enclosed parking structure. The monitoring equipment must be checked and recalibrated every six (6) months by a DM-certified company, and test results and calibration certificates must be retained for inspection by applicable Relevant Authorities.

10.1 Fire Service Vehicle and Personnel Accessibility

Every facility, structure and under-construction building must have a UAE Civil Defense fire access roadway. Detached retail units remotely located from predominant occupancy, less than 100 m² in size, are exempted from this requirement. Fire access roadways must comply with specifications outlined in Table 2.1 (Chapter 2) of the *Fire and Life Safety Code of Practice*.

Access way and fire engine access roads must be kept clear of obstructions and appropriately signed. The extent for fire vehicle access around the buildings must be considered and compliance ensured according to specific requirements from Chapter 2 of the *Fire and Life Safety Code of Practice*:

- low-rise buildings (<15m) – Figure 2.11;
- mid-rise buildings (>15m but <23m and not sprinkler protected) – Table 2.3;
- mid-rise and high-rise buildings (15m to 90m and sprinkler protected) – Table 2.4;
- super high-rise buildings (>90m and sprinkler protected) – Table 2.5;
- storage and industrial buildings without sprinkler protection – Table 2.6; and
- storage and industrial buildings with sprinkler protection – Table 2.7.

UAE Civil Defense fire vehicles must be able to park within 15m of a building, and access to the Breeching Inlet must be limited to one hose length of 18m.

In high-rise buildings (23m or more), an emergency command centre must be provided as specified in Chapter 1 of the *Fire and Life Safety Code of Practice* and must adhere to the specific requirements outlined in Section 2.9 of the *Fire and Life Safety Code of Practice*. High-rise buildings must have at least one fire lift in a dedicated shaft in compliance with Section 2.9.4 of the *Fire and Life Safety Code of Practice*.

All super high-rise buildings (greater than 90 m from the fire access level) must also have a "fire fighter's lift lobby" that must be enclosed with a smoke barrier having a minimum one (1) hour fire resistance rating. Additional specifications for the fire fighter's lift lobby and fire exit stairs must be in accordance with Sections 2.9.5 and 2.9.6 of the *Fire and Life Safety Code of Practice*, respectively.

Yard fire hydrants must be provided for the use by fire fighters to refill fire vehicle water tanks or to fight fires. Yard fire hydrants must be able to deliver 500 gpm through a single hydrant or 250 gpm through two outlets. Private fire hydrants must deliver a minimum pressure of 6.9 bars. Two separate Breeching Inlets are required to provide optional access to fire hydrants in case one is compromised by fire or smoke.

Additional requirements with respect to design, pipe sizes, pump and tank capacities, distance between hydrants and other fire system components are set out in Chapter 9 of the *Fire and Life Safety Code of Practice*.

10.2 Means of Egress

Means of egress can be achieved through doors, stairs, corridors, passageways, horizontal exits, bridges between buildings, ramps, elevators or escalators, area of refuge or escape slide and ladders. Requirements of these means of egress must comply with Table 3.1 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

At least two means of egress must be provided in every occupied building and such means of egress must be maintained free and unobstructed. The Occupant Load and exit capacities must not be exceeded and must be in accordance with Table 3.13 (Chapter 3) of the *Fire and Life Safety Code of Practice*. Additional requirements based on occupancy load and regarding the minimum number of egress or exits are defined in Table 3.14 (Chapter 3) of the *Fire and Life Safety Code of Practice*. Specific occupancy requirements are specified for:

- businesses – Table 3.19;
- residential (Group A - apartments, flats and residential units) – Table 3.24;
- hotels (Group A, C – hotels, hotel apartments, resorts) – Table 3.30;
- mercantile (Group A, B and C - retail, wholesale, supermarkets and stores) – Table 3.32;
- industrial (Group A, B, C – process, manufacturing, workshops) – Table 3.36; and
- parking structures, open and enclosed – Table 3.37.

The route to reach the exit, as well as every exit, must be clearly visible and marked to guide the Occupants to safety. Once constructed, buildings may not be occupied, until the building has been inspected and approved and a completion certificate obtained as per UAE Civil Defence requirements.

Stairs used for means of egress must comply with the requirements in Table 3.5 (Chapter 5) of the *Fire and Life Safety Code of Practice*, including considerations for individual occupancies as per Section 5 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

Fire resistance rating of doors must adhere to the requirements of Table 3.3 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

Areas of refuge are not mandatory; however, super high-rise buildings (>90m) and complex large buildings must consider providing areas of refuge as part of the fire strategy. Any areas of refuge must comply with requirements in Table 3.10 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

Elevators are considered as a means of egress by UAE Civil Defense for delayed egress, phased evacuation and controlled evacuations during emergencies under the supervision of UAE Civil Defence or trained facility management. Elevators used for means of egress must comply with the requirements in Table 3.11 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

Dead Ends are not allowed for exit access and must be within the allowable length in corridors. Dead Ends, travel distances and Common Paths of Travel must adhere with requirements from Table 3.16 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

All components of means of egress must be maintained, inspected and repaired to ensure they serve their intended purpose during emergencies. Daily inspections of doors, corridors and stairs must be performed to ensure they are not obstructed or blocked.

Doors must be inspected by competent inspectors or “House of Expertise”. Inspections must be in accordance with standard international inspection criteria and the *Fire and Life Safety Code of Practice*. All life and fire safety and emergency services materials, systems, equipment and accessories must be listed, registered and approved by the Material Approval Department of UAE Civil Defence and be in accordance with requirements from Section 7 (Chapter 3) of the *Fire and Life Safety Code of Practice*.

10.3 Fire extinguishers

Fire extinguishers must only be used for manageable scale fires and only by trained personnel. Physical conditions, such as gross weight, corrosion, agent reaction, wheeled units, wind and draft and availability of personnel, must be considered when a fire extinguisher is selected. Fire extinguishers must be readily identifiable and situated near a door or exit that can be used as an escape route. Obsolete extinguishers, as specified in Section 2.2.8 (Chapter 4) of the *Fire and Life Safety Code of Practice* must not be in use.

Training on basic fire awareness and on types, use and operation of fire extinguishers in emergency situations must be provided to at least 10% of the security personnel, Occupants, employees and supervisory personnel of each building occupancy. Such training must be provided by UAE Civil Defence department personnel or by an authorised agency approved by UAE Civil Defence.

Table 4.1 (Chapter 4) of the *Fire and Life Safety Code of Practice* specifies the general requirements for extinguisher rating, classification, planning and installation, safety precautions, operation and use of such fire extinguishers that must be considered.

The type of fire extinguishers that may be selected and for which application must be in accordance with, respectively, Tables 4.3 and 4.4 (Chapter 4) in the *Fire and Life Safety Code of Practice*.

Fire extinguishers must be installed only by UAE Civil Defence-approved and licensed Contractors and such work must not be commenced before receiving UAE Civil Defence-stamped and approved drawings.

Fire extinguishers in the facility must be inspected regularly, maintained, charged and repaired to serve their intended purpose during fire Accidents. Once every year, fire extinguishers must be serviced and maintained. Minimum guidelines for inspection and maintenance regimes are described in Table 4.4 (Chapter 4) of the *Fire and Life Safety Code of Practice*.

Extinguishers, extinguishing agents, materials, systems, assemblies, hose, pipes, nozzles and fittings, equipment, products and accessories must be in accordance with acceptable test standards and criteria specified in Section 4.1 (Chapter 4) of the *Fire and Life Safety Code of Practice*.

10.4 Exit Signs

All exits and exit routes must be identifiable, visible and clearly marked with noticeable signs to enable people to find their way out during fire emergencies. Every exit on every floor must be clearly indicated by an exit sign placed over the exit door. Directional signs must be placed to indicate the path and direction to exits. Exit signs must be illuminated while the building has normal electrical power and the building is occupied. Photo luminescent emergency lighting must be provided to indicate the path and direction to exits in case of loss of power.

Chapter 5 of the *Fire and Life Safety Code of Practice* outlines minimum guidelines and must be referenced for requirements regarding:

- exit and directional sign specifications – Table 5.1;
- installation of exit and directional signs – Table 5.2; and
- application of exit signs and directional markings – Table 5.3.

Exit signs, directional signs and evacuation plans must only be installed by a Contractor under the supervision of a Consultants.

Exit and directional signs must be inspected for damage, wear and tear and the operation of illumination sources checked every thirty (30) days. Battery-operated emergency illumination sources must be maintained in accordance with Chapter 6 of the *Fire and Life Safety Code of Practice*.

Signage materials, systems, assemblies, products and accessories must be installed and be of acceptable test standards and criteria as specified in Section 5.1 (Chapter 5) of the *Fire and Life Safety Code of Practice*.

10.5 Emergency Lighting

Emergency lighting provides illumination along safe routes towards and through the exits provided and must clearly indicate the escape routes, fire alarm call points and firefighting equipment along these escape routes upon interruption of power.

Depending on the occupancy, UAE Civil Defence permits the following types of emergency lighting as outlined in Chapter 6 of the *Fire and Life Safety Code of Practice*:

- central battery system – Table 6.2;
- monitored-type self-contained emergency lighting system – Table 6.3; and
- self-contained, standalone emergency lighting system – Table 6.4.

Specifications for the type of emergency lighting mentioned above must be considered where applicable. General minimum requirements with respect to location, Lux, duration and distribution of luminaires for emergency lighting must be in accordance with specifications outlined in Table 6.1 (Chapter 6) of the *Fire and Life Safety Code of Practice*.

The selection and application of emergency lighting systems must be based on occupancy and shall be in accordance with Table 6.5 (Chapter 6) of the *Fire and Life Safety Code of Practice*.

Table 6.6 (Chapter 6) of the *Fire and Life Safety Code of Practice* must be consulted for emergency lighting installation, testing, maintenance and inspection specifications to be performed by UAE Civil Defence approved and licensed Contractors.

Monthly and annual inspection requirements, including requirements for battery replacements of emergency lighting are detailed in Table 6.7 (Chapter 6) of the *Fire and Life Safety Code of Practice* and must be included in emergency provisions and inspection regimes.

All luminaires, batteries, fixtures, materials, systems, assemblies, fittings, equipment, products and accessories must be in accordance with acceptable test standards and criteria specified in Section 8.1 (Chapter 6) of the *Fire and Life Safety Code of Practice*.

10.6 Emergency Voice & Evacuation Systems

Voice evacuation or communications systems can be used to communicate to Occupants in the event of an emergency, especially in high-rise and super high-rise buildings. Voice messages must be in both English and Arabic and in a familiar and intelligible accent. Upon receipt of a confirmed fire alarm signal, emergency voice evacuation or communications systems may be triggered automatically or manually.

When emergency voice evacuation or communication systems are used, such systems must comply with specifications in Table 7.1 (Chapter 7) of the *Fire and Life Safety Code of Practice*. Two-way communication systems or two-way telephone systems must be provided for UAE Civil Defence personnel use as per Table 7.2 (Chapter 7) of the *Fire and Life Safety Code of Practice*.

Voice evacuation system and two-way telephone systems must only be installed, inspected and maintained by Contractors approved and licensed by UAE Civil Defence with respect to fire detection and alarm systems.

All the speakers, voice equipment, control systems, materials, assemblies, wiring, fittings, products and accessories must comply with acceptable test standards and criteria specified in Section 6.1 (Chapter 7) of the *Fire and Life Safety Code of Practice*.

10.7 Fire detection and fire alarm systems

Fire detection and alarm systems must be provided to warn Occupants about fire emergencies and to ensure that Occupants evacuate to safety quickly.

Fire detection systems can include:

- smoke detectors;
- heat detectors;
- radiant energy detectors;
- multi-sensing detectors;
- manual detectors;
- supervisory detectors; and
- gas detectors.

Table 8.1 (Chapter 8) of the *Fire and Life Safety Code of Practice* must be consulted for general requirements of the following fire detection and supporting systems:

- | | |
|--|--|
| <ul style="list-style-type: none"> • Equipment and Materials – only listed and approved equipment to be used. • Design basis – based on size and occupancy • Detectors (Initiating devices) • Manual call points • Coverage • Stairs and Elevator shafts • Partitions • HVAC – air handling systems • Explosive atmospheres • Detection zones • Wiring • Fire Alarm Control Panel (FACP) • Power supplies • Detectors in air ducts | <ul style="list-style-type: none"> • Notification devices (bells and sounders) • Visual Notification Devices • Notification Zones • Notification combined with public address system • Suppression system actuation through FACP • Elevator recall for fire fighters' services • Visual warning for elevators • Elevator shutdown • HVAC shutdown • Door release service • Water level, pressure and control valve supervisory • Smoke control systems |
|--|--|

The selection and placement of smoke detectors must take into account:

- the performance characteristics of the detector; and
- the areas into which the detectors are to be installed,

to prevent nuisance and unintentional alarms or improper operation after installation.

Additional requirements for smoke detection systems (see Table 8.2 (Chapter 8) of the *Fire and Life Safety Code of Practice*), their installation and spacing requirements (Tables 8.3, 8.4 and 8.5 (Chapter 8) of the *Fire and Life Safety Code of Practice*) must be considered.

Heat detection and alarm systems must be listed and approved by UAE Civil Defense and must comply with Table 8.6 (Chapter 8) of the *Fire and Life Safety Code of Practice*. Colour coding must be used to identify heat-sensing fire detectors of the fixed temperature or rate-compensated, spot type (see Table 8.6a (Chapter 8) of the *Fire and Life Safety Code of Practice*).

Manual call points must comply with the design, installation and spacing specifications of Table 8.10 (Chapter 8) of the *Fire and Life Safety Code of Practice*, including:

- secure mounting at 1200mm from the finished floor;
- use only for fire alarm initiating purposes;
- red in color; and
- location within 1.5m of each exit doorway on each floor, with the maximum travel distance to the nearest fire alarm box not exceeding 61m when measured horizontally.

Building type and occupancy will determine where fire detection and alarm systems must be applied and located. Applicable requirements for the specific building/occupancy types must be consulted in Table 8.13 (Chapter 8) of the *Fire and Life Safety Code of Practice*.

Specific requirements for fire detection and alarm systems for computer rooms, electrical rooms, lift machine rooms, server rooms, stairs, elevator shafts, laundry, storage, pump and any other auxiliary rooms are set out in Table 8.14 (Chapter 8) of the *Fire and Life Safety Code of Practice* and fire detection and alarm system for equipment must be in accordance with Table 8.15 (Chapter 8) of the *Fire and Life Safety Code of Practice*.

Fire detection and alarm systems installation must only be carried out by Contractors. Minimum guidelines for inspecting and maintenance of fire detection and alarm systems are specified in Table 8.17 (Chapter 8) of the *Fire and Life Safety Code of Practice*.

All devices, controls, wiring, modules, materials, systems, assemblies, equipment, products, components and accessories used for life safety, fire safety and emergency services must be listed, approved and registered by the Material Approval Department of UAE Civil Defence and must be in accordance with acceptable test standards and criteria specified in Section 6 (Chapter 8) of the *Fire and Life Safety Code of Practice*.

10.8 Fire protection services

Fire protection systems can include fire pumps, fire hose systems, automatic sprinkler systems, foam systems, water spray systems, yard hydrant systems, clean agent systems, dry and wet chemical systems and water mist systems (see Chapter 9 of the *Fire and Life Safety Code of Practice* for individual requirements). Such systems can either be manually activated or automatically operated to extinguish fires. The selection, design and application of fire protection systems must consider building type, occupancies and MSDSs of materials involved in the hazard. Section 1.1.13 (Chapter 19) of the *Fire and Life Safety Code of Practice*, must be considered for hazard classification for sprinkler protection systems.

Application of fire protection systems for the following occupancies must be in compliance with requirements from Chapter 19 of the *Fire and Life Safety Code of Practice*:

- super high-rise building – Table 9.18;
- high-rise building – Table 9.19;
- mid-rise building – Table 9.20;
- low-rise building – Table 9.21;
- business – Tables 9.20, 9.21 and 9.29;
- residential building – Tables 9.21 and 9.29;
- hotel – Tables 9.20, 9.21 and 9.29;
- industrial building – Table 9.27;
- parking facility – Table 9.24;
- auxiliary rooms – Table 9.30; and
- equipment and machinery selection – Table 9.31.

Contractors must install, maintain, inspect and repair fire protection systems. Inspection and maintenance frequencies for the following fire protection systems must be in accordance with Chapter 9 of the *Fire and Life Safety Code of Practice*:

- fire pumps – Table 9.32;
- standpipe (dry and wet riser) – Table 9.33;
- sprinkler and deluge testing – Table 9.34;
- foam systems testing – Table 9.35; and
- clean agents systems – Table 9.36.

Firewater tanks must have a filling connection directly from the power utility company with a float operated valve for automatic refilling. Furthermore, firewater tanks must have drain arrangement, overflow

connection, access manhole, ladders, level indicators and low level switch. Fire water tanks must comply with Table 9.3.3 (Chapter 9) of the *Fire and Life Safety Code of Practice*.

All valves, pumps, piping, hose, nozzles, devices, sprinklers, motors, materials, systems, assemblies, equipment, products and accessories used for Fire and Life Safety and emergency services must be listed, approved and registered by the Material Approval Department of UAE Civil Defence and meet standards specified in Section 6 (Chapter 9) of the *Fire and Life Safety Code of Practice*.

10.9 Smoke Control and Smoke Management Systems

Smoke control systems are essential to prevent smoke from entering stairwells, means of egress, smoke refuge areas, elevator shafts or similar areas where evacuees are in the process of egress during fire emergencies.

The spreading of fire through the air ducts used as part of heating and ventilation and air conditioning systems must be restricted. Ignition sources and combustible elements of the air duct systems must be considered as part of the design stage and minimized as far as possible.

Smoke control and HVAC system components must be in accordance with Table 10.1 (Chapter 10) of the *Fire and Life Safety Code of Practice*. HVAC systems must automatically shut down during a fire unless such system is an integral part of the smoke exhaust and control systems. General requirements for HVAC systems with respect to duct integrity, inlet and outlet locations, shafts, wiring, manual operation mechanisms and air duct smoke detectors must adhere to the requirements specified in Table 10.2 (Chapter 10) of the *Fire and Life Safety Code of Practice*.

Smoke can be controlled through smoke containment and smoke management, and such approaches must be considered during the design and engineering stage as set out in Section 2.4 (Chapter 10) of the *Fire and Life Safety Code of Practice*. Smoke control systems and stair pressurization used to limit smoke entering stairwells must adhere to the requirements specified in, respectively, Tables 10.3 and 10.4 (Chapter 10) of the *Fire and Life Safety Code of Practice*.

Smoke and grease laden vapours can accumulate in ventilation systems in kitchens and in exhaust equipment and such vapours could be fuel for fires. Smoke ventilation systems for cooking operations must adhere to the requirements for smoke exhaust fans, ducts, grease filters, dampers and hoods specified in Table 10.16 (Chapter 10) of the *Fire and Life Safety Code of Practice* to prevent smoke from spreading.

Flammable and hazardous material storage rooms must have ventilation systems to maintain the flammable concentration in the room at acceptable levels and serve as smoke exhaust systems during fire emergencies. The make-up air, exhaust dusts, dampers, fans, control and power requirements for ventilation of storage rooms must be designed to adhere to the requirements specified in Table 10.18 (Chapter 10) of the *Fire and Life Safety Code of Practice*.

Smoke control and management systems for the following Occupancy Loads must adhere to the requirements specified in Chapter 10 of the *Fire and Life Safety Code of Practice*:

- super high-rise building – Table 10.19;
- high-rise building – Table 10.20;
- mid-rise building – Table 10.21;
- underground and basement areas other than parking usage – Table 10.22;
- parking facility – Table 10.23;
- factories and warehouses – Table 10.23; and
- various occupancies and auxiliary rooms – Table 10.27.

Smoke control systems must be installed, maintained and inspected by Contractors.

Inspection and maintenance of kitchen hoods must meet the following minimums:

	Monthly Inspections	Quarterly inspections	Semi-annual inspections	Annual inspections
What systems	Systems serving solid fuel cooking operations	High-volume cooking operations, such as 24-hour cooking, charbroiling, or wok cooking, at commercial kitchens, hotel and hospital kitchens.	Moderate-volume cooking operations such as restaurants, labor and staff accommodation.	Low-volume cooking operations, such as residential, day camps, seasonal businesses, or Event centers.
Inspected for	Grease accumulation	Grease accumulation and ventilation system operation.	Grease accumulation and ventilation system operation.	Grease accumulation Hood ventilation system of all kitchens All cooking equipment shall be inspected and serviced for proper functioning.

Disposable filters must be inspected, cleaned and periodically replaced as per the Manufacturer's specifications and with the requirements specified in Table 10.29 (Chapter 10) of the *Fire and Life Safety Code of Practice*.

All materials, systems, assemblies, control systems, ducts, fans, insulation, pipes and fittings, equipment, products and accessories used for smoke control and management must be listed, approved and registered by the Material Approval Department of UAE Civil Defence and meet the standards specified in Section 6 (Chapter 10) of the *Fire and Life Safety Code of Practice*.

10.10 Flammable liquid usage

The storage, use and handling of flammable and combustible liquids have risks that must be evaluated and appropriate emergency response procedures implemented to reduce fire or explosion-related incidents. Specific conditions of exposure to and from adjacent properties and exposure to floods, earthquakes and windstorms must be assessed.

When storing, using, handling and dispensing flammable and combustible liquids, precautions must be taken to prevent the ignition of flammable vapours from various ignition sources. Indoor liquid storage rooms must not have an area in excess of 46 m². Storage racks used must adhere to the specifications in Table 13.1 (Chapter 13) of the *Fire and Life Safety Code of Practice*, and storage rooms provided with adequate warning signs such as "NO SMOKING", "FLAMMABLE LIQUID, KEEP AWAY", "NO OPEN FLAMES", etc.

When considering flammable and combustible liquid storage, the "Electrical Area Classification" must comply with Table 13.1a (Chapter 13) of the *Fire and Life Safety Code of Practice* for Class I liquid storage areas and areas where Class II or Class III liquids are stored or handled at or above their flash points.

Incompatible liquids must be separated, and Table 13.1c (Chapter 13) of the *Fire and Life Safety Code of Practice* provides minimum guidelines for their safe storage and separation distance requirements.

Employers must adhere to the specific requirements for storing flammable and combustible liquids in containers indoors in terms of type of containers, storage room limitations and maximum allowable quantities as set out in Tables 13.2. and 13.2a (Chapter 13) of the *Fire and Life Safety Code of Practice*. Industrial occupancies have additional requirements as set out in Tables 13.3 and 13.3b (Chapter 13) of the *Fire and Life Safety Code of Practice*.

The storage of liquids in outdoor fixed tanks must comply with the restrictions on design and Construction, venting and corrosion protection in Table 13.4 (Chapter 13) of the *Fire and Life Safety Code of Practice*. All tanks must be tested before they are placed in service, listed and approved with standard marking on the tanks as evidence of compliance ensuring that permanent test records and test results are maintained by the Owner. Tanks must be tested periodically as per Manufacturer's instructions and as required by applicable standards to ensure the integrity of the tank.

Employers must comply with Table 13.10 (Chapter 13) of the *Fire and Life Safety Code of Practice*, which details the operational safety requirements related to flammable and combustible liquid storage, handling, usage and management methodology used to identify, evaluate and control hazards.

All materials, systems, assemblies, wiring, fittings, equipment, products and accessories used for storage of flammable and combustible materials must be listed, approved and registered by the Material Approval Department of UAE Civil Defence and meet the standards specified in Section 6 (Chapter 13) of the *Fire and Life Safety Code of Practice*.

10.11 Accessibility

Owners, Owners Association and OAMs must ensure that buildings, structures, facilities, elements and spaces, both exterior or interior, are accessible to differently abled people (also referred to as people with physical disabilities or special needs) so that they can maneuver, evacuate and find refuge as safely as possible. Access routes, including walking surfaces, turning spaces, protruding objects, clear width and doors, ramps and elevator access for differently abled individuals, must be assessed and included in emergency evacuation provisions. Emergency evacuation strategies for the differently abled must include considerations for emergency notification and means of egress ensuring compliance with specific requirements for each category of physical disability as outlined in Section 5 (Chapter 15) of the *Fire and Life Safety Code of Practice*.

Similarly, the following requirements must be consulted and implemented to ensure safe access for differently abled persons as per Chapter 15 of the *Fire and Life Safety Code of Practice*:

- accessible parking – Table 15.2;
- accessible stairs – Table 15.3;
- accessible audio-visual alarms and signs – Table 15.4;
- visible character and letters specifications – Table 15.4a;
- accessible special rooms and spaces – Table 15.5;
- accessible dwelling and sleeping units – Table 15.6; and
- accessible features in a building – Table 15.7.

10.12 Direct Alarm Systems

Every building in UAE, including private villas, warehouses and factories, must be fitted with smart monitoring systems that connect building Fire and Life Safety systems signals directly to UAE Civil Defence monitoring systems. Such systems must detect and report alarms in real time, from Fire and Life Safety systems, firewater tanks, elevators and LPG detection systems of the buildings, directly to UAE Civil Defence control and monitoring rooms. Smart monitoring systems must adhere to the requirements for specific building occupancies set out in Table 16.1 (Chapter 16) of the *Fire and Life Safety Code of Practice*.

10.13 Fire Risk Assessment

Fire risk assessment is an assessment of any building, the activities performed and the likelihood that a fire could start and cause harm to those in or around the premises. Fire risk assessments aim to:

- identify fire hazards;
- eliminate or reduce the risk of those hazards causing harm to as low as reasonable; and
- identify fire precautions and management arrangements necessary to ensure the safety of people in case of a fire.

Guidelines for the performance of fire risk assessments, the methodology of risk assessments and the specifications for risk assessment studies and reports are outlined in, respectively, Tables 17.1, Table 17a and Table 17.2 (Chapter 17) of the *Fire and Life Safety Code of Practice* must be considered and implemented to ensure compliance with UAE Civil Defence requirements. Fire risk assessments must be performed by a house of expertise or Fire Consultant approved by UAE Civil Defence.

The fire risk assessment must be submitted to UAE Civil Defence for approval. An operation and maintenance manual must be maintained by the Owner, operator, tenant or the stakeholder responsible for the facility management. Such manual must include:

- conditions and limitations on use or inspection;
- inspection, testing, and maintenance requirements;
- validity of the fire risk assessment;
- violations of fire risk assessment to identify changes could impact the fire risk assessment (Table 17.3 (Chapter 17) of the *Fire and Life Safety Code of Practice*); and
- asset register including hazardous material that must also be submitted to DMCC Community Management.

10.14 Responsibilities of Stakeholders

The mandatory duties of individual stakeholders in their individual occupancies and their role in executing the regulations of UAE Civil Defence in creating fire safe buildings and cities are outlined in the Tables specified below in Chapter 18 of the *Fire and Life Safety Code of Practice*:

Stakeholder	Table
Owner's Representative	18.1
Sub-Developer	18.2
Consultant (Lead/Main Consultant)	18.3
Contractor's (Installation and Maintenance)	18.4
Engineers and Technicians for Installation and Maintenance Company	18.4a
Fit Out Contractor	18.5
Fire Consultant (House of Expertise)	18.6
Facilities Management Company (also see Section 6.8 of these HSE Guidelines)	18.11
High-rise Building Management	18.14

Hotel Management	18.15
Mall Management	18.18
Event Organizer's	18.19
Residents' and Tenants'	18.20

The information provided in this section is not exhaustive and must be considered as minimum guidelines. The *Fire and Life Safety Code of Practice* and supporting NFPA, EN, the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the Society of Fire Protection Engineers (SFPE) guidelines and Manufacturer's specifications must be consulted for additional requirements.

Owner/Owner's Representative

The Owner's Representative is nominated by the Owner to deliver and perform the Owner's duties. The Owner is responsible to evaluate the Owner's Representative in terms of qualification, capability and commitment.

The Owner shall evaluate the Consultant, House of Expertise, Contractor, Fit Out Contractor(s), Manufacturer, supplier, testing laboratories and certification body's qualifications and ensure all valid UAE Civil Defence approvals are in place before awarding any contracts.

The Owner shall ensure that:

- Fire and Life Safety systems are functioning;
- means of egress components, such as doors, stairs and exits, are as per acceptance criteria;
- fire extinguishers, exit signs, emergency lighting system, voice evacuation system, fire detection and alarm system, fire protection systems, smoke control system, LPG system (if any) and kitchen hood suppression systems (if any) are as per acceptable criteria;
- facility management and the Consultant jointly commission the emergency evacuation plans, verifying the authenticity and applicability of such evacuation plans as per site conditions, furniture layouts, etc.;
- Occupants do not occupy the building, in part or whole, without UAE Civil Defence final commissioning and clearance; and
- a UAE Civil Defence-approved and listed maintenance contractor is appointed immediately upon commissioning to periodically inspect and maintain the Fire and Life Safety systems of the facility.

Additional responsibilities are outlined in Table 18.1 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Sub-Developer

The Sub-Developer is responsible for appointing and designating at least one Fire Consultant who is qualified and experienced in Fire and Life Safety, the *Fire and Life Safety Code of Practice* and UAE Civil Defence laws and regulations.

The Sub-Developer is responsible for:

- evaluating the Consultant, House of Expertise, Contractor, Fit Out Contractor(s), Manufacturer, supplier, testing laboratories and certification body's qualification and valid approval from UAE Civil Defence before awarding any contracts;

- inspecting and maintaining the Fire and Life Safety systems (hydrant network, LPG network, fire water tanks and fire pump room) serving multiple Owners;
- ensuring the road network satisfies the fire access road requirements;
- ensuring the fire hydrant system throughout the development is complete with fire pump room and fire water tanks in accordance to the requirements within the Fire and Life Safety Code of Practice; and
- ensuring that the appointed Consultant is responsible for the Fire and Life Safety of the property during Construction activities.

Additional responsibilities are outlined in Table 18.2 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Consultant (Main Consultant)

The Consultant is responsible for appointing permanent fire engineers who are qualified, competent and experienced in Fire and Life Safety.

The Consultant is responsible for:

- clearly conveying to the Owners and developers about Fire and Life Safety requirements of the Project in the early stages of Project planning and to approach UAE Civil Defence to clarify any complicated issues very early in the planning stage;
- submitting full details for Fire and Life Safety systems, cladding, roofing, fire doors, etc. in the submission;
- complying in full to the "drawing submission" requirements as per Annexure 2, Drawing Submission Requirements of the Fire and Life Safety Code of Practice;
- complying with online drawing submission procedures;
- ensuring every Contractor has appointed a dedicated fire safety supervisor to monitor the onsite work by their team of workers;
- inspecting Construction and installation work and supervise Contractors;
- verifying the materials and components being used in Construction and installation are same as specified and approved;
- inspecting fire stopping, cladding voids, concealed piping, underground installations, etc. while they are exposed for inspections and certify before these are concealed permanently;
- inspecting and verifying each and every aspect of Fire and Life Safety features of the building as part of the handover process;
- ensuring that all Fire and Life Safety systems are functioning as intended;
- ensuring that fire extinguishers, exit signs, emergency lighting system, voice evacuation system, fire detection and alarm system, fire protection systems, smoke control system, LPG system (if any) and kitchen hood suppression systems (if any) are as per acceptance criteria; and
- preparing the emergency evacuation plan.

Additional responsibilities are outlined in Table 18.3 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Contractors (Installation and Maintenance)

Contractors are responsible for ensuring that qualified, experienced and UAE Civil Defence licensed engineers are employed to perform design, installation and inspection activities. Contractors shall ensure that contracting companies are licensed based on categories specified in Table 18.4 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

The Contractor is responsible for:

- evaluating Manufacturers' and suppliers' qualifications and valid approval for products and company registration from UAE Civil Defence, before placing order for products and making any agreement with them;
- applying to UAE Civil Defence for Project approvals;
- cooperating and coordinating with other contractors and their scope and systems, where interfacing or interaction arises between different types of systems and different parties involved in execution;
- complying with complete installation guidelines from Manufacturers along with full compliance of installation guidelines from the *Fire and Life Safety Code of Practice*;
- inspecting and verifying each and every aspect of Fire and Life Safety features of the building and shall document the same in detailed reports;
- coordinating and cooperating with the Consultant in handing over Fire and Life Safety system operating manual, maintenance manuals, testing reports and required spare parts to the Consultant;
- ensuring that fire extinguishers are as per acceptance criteria and exit signs, emergency lighting system, voice evacuation system, fire detection and alarm system, fire protection systems, smoke control system, LPG system (if any) and kitchen hood suppression systems (if any) are acceptable and maintained; and
- signing off and handing over "installation certificates" and "maintenance certificates" to the Consultant, when installation is the contractual agreement.

Additional responsibilities are outlined in Table 18.4 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Fit Out Contractors

Fit Out Contractors shall use qualified and experienced fire engineers and fit out/refurbishment engineers that are licenced by UAE Civil Defence to perform fit out works.

Fit Out Contractors are responsible for:

- evaluating Manufacturers' and suppliers' qualifications, valid approval for their products and their company registration by UAE Civil Defence, before placing order for products and entering any agreement with them;
- verifying material test certificates and specifications are in accordance with latest edition of the *Fire and Life Safety Code of Practice*;
- applying to UAE Civil Defence for fit out and décor Project approvals;
- appointing dedicated fire safety supervisor to monitor the onsite work by their team of workers;

- interacting and coordinating with the Consultant to inspect Construction and installation work to ensure that the onsite proceedings are in compliance with UAE Civil Defence approved drawings and specifications;
- appointing a third party to ensure the Fire and Life Safety systems of the facility are delivering their intended purpose and are functioning before inviting UAE Civil Defence for commissioning; and
- ensuring that fire extinguishers are as per acceptance criteria and exit signs, emergency lighting system, voice evacuation system, fire detection and alarm system, fire protection systems, smoke control system, LPG system (if any) and kitchen hood suppression systems (if any) are acceptable.

Additional responsibilities are outlined in Table 18.5 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Fire Consultant (“House of Expertise”)

House of Expertise categories can range from Fire and Life Safety, LPG gas and natural gas, hazardous materials and fire safety providers. House of Expertise companies must be registered and approved by UAE Civil Defence and use engineers that are licenced by UAE Civil Defence.

The House of Expertise is responsible for:

- informing and obtaining permission from UAE Civil Defence to execute their scope of work;
- producing Fire and Life Safety design drawings and reports; fire protection and suppression system design, inspection and evaluation; fire detection, voice alarm system design; emergency lighting and sign system design, inspection and evaluation; risk assessment of new and existing facilities; and preparation of emergency action plans and procedures;
- submitting approvals to UAE Civil Defence through the Main Consultant or Fit Out Contractor;
- inspecting and verifying each and every aspect of Fire and Life Safety features of the building and shall document the same;
- verifying that means of egress components, such as doors, stairs and exits, fire extinguishers, exit signs, emergency lighting system, voice evacuation system, fire detection and alarm system, fire protection systems, smoke control system, LPG system (if any) and kitchen hood suppression systems (if any) are as per acceptance criteria;
- inspecting the fire stopping systems, including progressive inspections during installations; and
- evaluating cladding systems, smoke control systems and full installation methods, material specifications, product and system test certifications, installer's qualifications, etc. for compliance to the *Fire and Life Safety Code of Practice*.

The House of Expertise is primarily responsible for the overall code compliance evaluation of the Project, when appointed to do so.

Additional responsibilities are outlined in Table 18.6 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

High-rise Building Management Responsibilities

Owners of high-rise buildings shall ensure that the Facilities Management Company appoints or designate a minimum of two (2) Fire and Life Safety managers who obtained training from, and are certified and licensed by, UAE Civil Defence. The employees of every Facilities Management Company for a high-rise building must be trained in appropriate fire extinguisher usage.

Appointed Fire and Life Safety managers are responsible for:

- monitoring, recording and ensuring that the Facilities Management Company executes their responsibilities in line with the Fire and Life Safety Code of Practice;
- preparing a written emergency action plan according to the Fire and Life Safety Code of Practice;
- providing emergency reporting and coordinate with UAE Civil Defence; and
- understanding the operation and suitability of elevators to be used during emergency situations and include detailed procedures to be incorporated into the emergency action plans.

Additional responsibilities are outlined in Table 18.14 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Hotel Management

Emergency response teams in hotels must consist of a minimum of two (2) Fire and Life Safety managers from their own staff who obtained training from, and are certified and licensed by, UAE Civil Defence. Every hotel employee must be trained in appropriate fire extinguisher usage.

Appointed Fire and Life Safety managers have responsibilities as mentioned in the previous section.

Additionally, they are responsible for:

- assisting with children, elderly and physically challenged to execute hotel evacuation smoothly;
- coordinating and managing evacuation and leading evacuees to designated assembly points; and
- evaluating and assessing initial stages of fire and usage of extinguishers and hose reel system, if it is assessed as safe to do so.

Additional responsibilities are outlined in Table 18.15 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Mall Management

Emergency response teams in malls must consist of a minimum of two (2) Fire and Life Safety managers and two (2) crowd managers from their own staff who obtained training from, and are certified and licensed by, UAE Civil Defence. If the Occupant Load is more than 250 people, there must be an additional one (1) crowd manager for every 250 people.

Every member of the mall emergency response team and staff must be trained in appropriate fire extinguisher usage, with refresher trainings annually.

Appointed Fire and Life Safety managers have responsibilities as mentioned in the previous section with crowd managers having the following responsibilities:

- being fully aware and familiar with mall emergency evacuations plans and emergency evacuation procedures;
- coordinating with Fire and Life Safety managers, facility management, tenant staff, food court staff, supermarket staff and play area staff to pre-plan the specific roles and duties of each tenants and incorporate the crowd management strategies into the emergency action plans; and
- having control over the Occupant Load and capacity of the mall and shall have strategies to control crowd entry into mall or specific areas, when crowd exceeds the safety level and exit capacities.

Additional responsibilities are outlined in Table 18.18 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Event Organizers

The Event organizer is responsible for preparing the application for the Event NOC to be submitted to UAE Civil Defence a minimum of seven (7) days before the Event.

The Event organiser is further responsible for:

- complying with all LPG/natural gas requirements, if LPG/natural gas is intended to be used in the Event either for cooking or for flame shows or any of such activities;
- allowing only UAE Civil Defence-approved food trucks at Events;
- appointing UAE Civil Defence-approved and listed LPG/natural gas contractor to design, install, inspect and maintain the LPG/natural gas applications in compliance with the *Fire and Life Safety Code of Practice*;
- providing full details of the pyrotechnics/flame show/fireworks, if any, to UAE Civil Defence in the NOC;
- ensuring no pyrotechnics or flame shows or fireworks are permitted without UAE Civil Defence approvals;
- discussing the Event with the Operations Department of UAE Civil Defence to jointly evaluate the nature of Event, number of people involved in organizing the Event, number of people gathering in the Event and the risk involved and whether UAE Civil Defence trucks and apparatus are required;
- ensuring that all electrical installations, cables, lighting, generators, etc. are installed by professional electrical contractor in accordance with electrical safety regulations of DEWA;
- ensuring that the structural aspect of the Event, such as tents, stages, grandstands, seating arrangements, platforms, etc., are installed by experienced professionals; and
- obtaining material test certificates from the suppliers of tents, pre-engineered grandstands and kiosks to be submitted to UAE Civil Defence along with the permission application.

Emergency response teams at Events must consist of a minimum of two (2) Fire and Life Safety managers and two (2) crown managers from their own staff who obtained training from, and are certified and licensed by, UAE Civil Defence. If the Occupant Load is more than 250 people, there must be an additional one (1) crowd manager for every 250 people.

Every member of Event emergency response team and staff must be trained in appropriate fire extinguisher usage, with refresher trainings annually.

Appointed Fire and Life Safety managers and crowd managers have responsibilities as mentioned in the previous section.

Additional responsibilities are outlined in Table 18.19 (Chapter 18) of the *Fire and Life Safety Code of Practice*.

Residents and Tenants

Every tenant must follow fire safety rules and regulations and participate actively in safeguarding the premises from fire Accidents. Tenants must be aware of emergency evacuation plans of the building and be aware of exits, exit access corridors and stairs to the outside and locations of assembly points of the building. When any discrepancies and violations of fire safety in the building are witnessed, tenants must report this to facility management.

Residents and tenants are responsible for:

- ensuring that children, special needs people and mentally challenged and unstable or elderly people are not left unattended and unsupervised near the balconies, near windows, at railings or terraces;
- inspecting their balconies, railings and windows for any signs of damage and inform facility management immediately, demanding corrective actions;
- providing safety locks for balcony access, sliding windows and window panes opening more than 125mm;
- ensuring that barbeques are not held on balconies, in basements, indoors and on flammable surfaces;
- not discarding cigarette butts in public areas, on roads or from balconies;
- not leaving cooking unattended;
- not overloading electrical sockets and extension cords causes electrical fires; and
- replacing faulty electrical appliances, such as cooking range, microwave, grills, fryers, heaters, grinders, blowers, vacuum cleaners, ironing devices, air-conditioning units, lamps, etc., which can cause not only fires but can also be sources of electrical shocks.

Residents and tenants must take every fire alarm and fire sounders seriously and must verify the fire alarm with facility management. Upon fire alarm intimation, it is the resident's responsibility to leave the home without delay and evacuate the building in an orderly and smooth manner without panicking or causing stampede or obstructing fire and rescue operations by UAE Civil Defence.

CHAPTER 11 OCCUPATIONAL HEALTH AND WELFARE

Employers shall provide health and welfare facilities/services aimed at ensuring that workers do not have their health put at risk as a result of the conditions under which they are required to work. This will include matters such as temperature in the workplace, ventilation, lighting, toilets, washing facilities, change rooms, mess rooms, halls, pest control, etc.

Employers shall ensure that all personnel have completed occupational health screening as required by the *Environment Protection Regulations* in a DM-approved clinic and must have their cards available at all times.

Employers shall ensure that all personnel required to perform certain tasks are medically fit to do such tasks, including working at height, rope access work or confined space. Workplace environmental and health hazards must be identified and risks assessed.

Employers shall make educational materials on personal health and well-being available to employees.

The following are specific restrictions for Construction sites:

- the use of portacabins or structures from wood or flammable materials is not allowed, and appropriate fire prevention devices must be available, according to the *Health Requirements for Construction Sites*;
- the provision of housing is prohibited, except for site guards, and then such housing must be in compliance with specifications in the *Health Requirements for Construction Sites*;
- the use of gas cylinders for cooking is strictly prohibited; and
- potable drinking water must be provided with water tanks and coolers sheltered, protected and well-maintained and filters provided and kept clean and tested by a third party.

11.1 First Aid

First aid is the provision of prompt attention to injuries normally minor in nature.

Employers shall provide access to adequate health and medical facilities, including clearly marked first aid provisions and trained first-aid personnel, and put appropriate procedures in place for transportation to local medical facilities in the case of a medical emergency. First aid boxes must be provided in every workplace and must be readily accessible during working hours. At least one (1) first aid box must be provided per 150 employees and one (1) additional complete set for up to 250 employees. Each first aid box must include, at a minimum, the prescribed contents as specified in Table (1) of *DM Guidelines for First-aid Requirement* (DM-PH&SD-P4-TG17) and the Dubai Ministry of Health requirements.

Where more than 250 employees work, first aid room with an area of at least a 20m² and the prescribed equipment described in Table (2) of the *DM Guidelines for First-aid Requirement* (DM-PH&SD-P4-TG17) must be provided. The first aid room must be controlled by a qualified first aider with DM-approved certification.

Regular checks must be performed to ensure first aid boxes remain fully stocked. Construction sites must also be provided with a first aid room with first aid kits and required medicine in accordance with the *Health Requirements for Construction Sites*.

Records must be retained for all first aid treatment cases and be available for inspections or audits by DMCC or any other Relevant Authorities, as applicable.

11.2 Medical Surveillance

According to the International Labour Organisation, medical surveillance of workers must be arranged for the assessment of the health of workers in relation to risks caused by exposure to chemicals; for the early diagnosis of work-related diseases and injuries caused by exposure to hazardous chemicals; and for the assessment of the workers' ability to wear or use required respiratory or other personal protective equipment.

As defined by Article 38 of the *Environment Protection Regulations*, employers shall conduct periodical medical examination for workers to ensure they are not affected by occupational illness. Employees engaged in handling and using organic solvents must be medically examined at least once every twelve (12) months.

Medical surveillance may be required if employees are exposed to the following:

- chemicals that have a recognised systemic toxicity, i.e. an insidious poisonous effect;
- chemicals known to cause chronic effects (e.g. occupational asthma);
- chemicals known to cause severe dermatitis;
- chemicals that are known or suspected carcinogens, teratogens or mutagens; and
- other chemicals where there is a likelihood that the disease or effect may occur under particular conditions of the work activity.

Medical surveillance data must be evaluated annually to determine whether workplace activities cause or contribute to employee injuries or illness and whether control measures must be implemented to limit exposure.

Employees must be informed of medical surveillance results and counselling and assistance provided where required.

Medical records must be maintained in a secure location for a period of thirty (30) years and must only be available to authorized personnel.

11.3 Drinking Water

Drinking water needs to be provided with water sources and stations regularly inspected. Laboratory testing of drinking water is required to ensure conformity to DM specifications and standards.

According to Article 23 of the *Public Health and Safety Regulations*, the Occupant is responsible for the cleanliness and safety of drinking water tankers in the building and must verify the efficiency of such water systems. Water coolers with filters need to be regularly inspected and replaced and maintained in a clean condition.

CHAPTER 12 EMERGENCY EVACUATION PLAN

Emergency evacuation plans must be in compliance with requirements defined in Chapter 19 of the *Fire and Life Safety Code*. Emergency evacuation plans must be specific to each building and must be available on each floor and at multiple locations, unobstructed and clearly visible, in English and Arabic.

Emergency evacuation plans' design and layout must be in compliance with the requirements of Chapter 5 of the *Fire and Life Safety Code*. The number of evacuation plans will depend on the complexity of the floor design of the building.

A "No Evacuation (Remain in Place) Strategy" must be considered and must be evaluated and certified by UAE Civil Defence. A partial evacuation strategy that could be used in high-rise or super high-rise buildings must also be considered.

Evacuation routes and exits must be prominently displayed. Emergency exits and evacuation routes must comply with UAE Civil Defence requirements. The sequence of an evacuation can be divided into the following phases:

1. detection;
2. decision;
3. alarm;
4. reaction; and
5. movement to an assembly point.

Occupants of buildings must be aware of the emergency evacuation plan and their responsibilities. They must be trained in the location of the manual call points, stairs and exit routes, exit signage, assembly points, refuge areas, fire extinguishers, fire hose reels, etc.

According to Table 19.1 (Chapter 19) of the *Fire and Life Safety Code of Practice*, the emergency evacuation plan must be prepared by the building Owners, management company and the Facilities Management Company. The implementation of the documented emergency guidelines and procedures is the responsibility of the appointed facilities management team, who must provide each tenant (resident/employee/Occupant) with the "Fire Safety at Home/Office/Hotel etc." awareness brochure.

Evacuation scenarios may include but are not limited to:

- incidents leading to serious injuries/fatalities or ill health;
- explosion/fire;
- release of hazardous materials or substances;
- natural disasters (e.g. earthquakes, storms or floods);
- bomb treat or terrorism; and
- pandemic or infectious disease.

Evacuation scenarios must clearly highlight points of exit, emergency contact details and the identity of the first aiders. The procedures by which individuals within the building will egress during emergency situations must also be described in detail. An assembly point must also be identified on the plan and be part of the emergency evacuation procedure.

Consideration for personal situations that may affect an individual's ability to evacuate must be taken into account, including alarm signals that use both aural and visual alerts and also evacuation equipment such as sleds, pads and chairs for non-ambulatory people. Proper planning must implement an all-hazards approach so that plans can be reused for multiple hazards that may occur. Responsibilities pertaining to the evacuation plan must be clearly defined, and appointed persons shall include:

- incident fire commander;

- assistant fire commander;
- fire warden;
- assistant fire warden; and
- response team of minimum four (4) people (fire responder, first aider, assembly point coordinator and drill observer).

Emergency response teams must be identifiable through appropriate yellow fluorescent jacket/vests with specific designations inscribed on them with capital letters (e.g. FIRE WARDEN, FIRST AIDER, etc.)

The emergency evacuation plan must be documented and tested in the form of drills. Emergency drills must be conducted periodically. The frequency of such drills (see the summary in table 3 below) must be in accordance with Chapters 18 and 19 of the *Fire and Life Safety Code of Practice*. Additional considerations based on occupancy and risks involved must be assessed.

Formal evacuation Events must be notified to the DMCC HSE or the Managing Agent, prior to the Events taking place.

UAE Civil Defence must be notified of planned drills 48 hours prior to the scheduled drill and again one (1) hour before. In the case of towers, tower managers must notify the UAE Civil Defence one (1) month prior to planned drills.

Lessons learned from tests or actual incidents must be used to review and improve emergency evacuation procedures.

Concerns about product theft during emergency drills can be addressed by planning drills in advance and holding them after all products have been safely secured.

Emergency evacuation plans must be reviewed and revised annually to include changes in the building changes in the floor plans, number of Occupants, changes in usage, changes in management, changes in staff and changes in emergency services contact details.

As a minimum, emergency management systems must consider the following:

- emergency management roles and responsibilities;
- risk-based emergency scenarios;
- emergency actions;
- emergency evacuation plans;
- list of available resources;
- communication plan and procedures;
- periodic tests, drills and exercise requirements; and
- monitoring and review of emergency management systems.

Table - Emergency Evacuation Drill Frequencies

Drills for Occupancies and Management	Frequency	Who should be involved
Facility management	Every three (3) months	Facility management team and shall not be for the Occupants.
Assembly occupancy	Twice every year	Drills shall not be required to involve general public of the assembly occupancy
Business high-rise and super high-rise building management	Every six (6) months	Entire Occupants, with total evacuation alarm
Hotel high-rise and super high-rise building management	Every three (3) months	Drills shall not be required to involve hotel guests and visitors.
Residential high-rise and super high-rise building management	Every year	Involve entire Occupants, with total evacuation alarm.
Healthcare management	Every month	Drills shall not be required to involve Occupants, patients or visitors
Mall management	Every month	Drills shall not be required to involve the general public.

Emergency reporting procedures and communicating plans must be established and must include:

- information about the alarm system and other emergency communication facilities;
- emergency contact details of the facility;
- procedure for the dissemination of relevant information; and
- procedure for reporting of incidents and outcomes.

Where required, the emergency reporting procedures and communicating plans must be coordinated with UAE Civil Defence (Table 13.11 (Chapter 13) of the *Fire and Life Safety Code of Practice*).

Additionally, the *DM Emergency Preparedness Guidelines* (DM-PH&SD-P7-TG6) must be consulted for further information.

A copy of the emergency evacuation plan must be sent to and registered with the DMCC Community Management.

CHAPTER 13 RISK MANAGEMENT

Employers shall identify hazards and potentially hazardous activities and conduct a risk assessment.

A method statement and risk assessment that detail the way the task or process should be performed must be completed prior to the work commencing. The method statement and risk assessment must:

- define the hazards involved and provide guidance on how to do the job safely;
- include details on which control measures have been introduced to ensure the safety of anyone who is affected by the task or process; and
- be approved by the supervising Consultant prior to the work commencing.

13.1 Job Specific Hazards

Employers and Owners shall identify specific job-related hazards, including hazardous materials, and prepare emergency plans and standard operating procedures applicable to the work being undertaken. Employers shall make all reasonable efforts to ensure that the information provided is complete and correct. Employees must be trained to understand risks associated with their work activities and be aware of applicable control measures.

13.2 Risk Assessment

Employers and Owners shall, before the commencement of and during any work activities, ensure risk assessments are performed by a Competent Person.

According to UAE Federal Law No. (29) of 2006 Concerning the Rights of People of Determination, equal care rights and opportunities must be provided for people with special needs. Owners, Owners Association and OAMs must perform risk assessments to determine requirements for persons with special needs and prepare action plans identifying how they are going to rectify any aspect identified as being a barrier to access or could affect use of facilities. Compliance must be in accordance with the accessibility requirements outlined in Section 10.1 of these HSE Guidelines.

The risk assessment must include, at a minimum:

- a description of the operation or activities to be performed in the sequence of the basic job steps;
- the identification of the risks and hazards to which individuals may be exposed to;
- the analysis and evaluation of the risks and hazards identified;
- a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- a monitoring plan;
- a review plan;
- during the period of the work, the employer or the employee may identify additional hazardous operations; and
- for each such newly identified hazardous operation or activity, the employer shall prepare revised risk assessments described above.

Employers and Owners shall ensure that a copy of the risk assessments is available on site for inspection by an employee, DMCC and any other relevant local authorities. Employers shall ensure that all employees under their control are informed, instructed and trained by a Competent Person regarding any hazard and the related work procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

Employers and Owners shall ensure that all personnel are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

No employer shall allow or permit any employee or individual to enter the workplace, unless such employee or individual has undergone health and safety induction training pertaining to the hazards prevalent in the workplace at the time of entry. The employer shall ensure that all visitors undergo health and safety inductions whilst also being provided with the necessary PPE.

CHAPTER 14 ACCIDENT / INCIDENT INVESTIGATION AND REPORTING

Reporting Accidents and ill health at work is a legal requirement. The information in this section enables employers to identify where and how risks arise and to investigate serious Accidents.

Employers shall inform DMCC immediately and submit a detailed Accident report for all incidents, as per the DMCC incident investigation and reporting procedure.

14.1 Definitions

Major Incident

A Major Incident is an incident, including a security incident, involving any of the following:

- fatality or permanent total disability;
- multiple permanent partial disabilities;
- extensive damages;
- serious impact on company reputation;
- extensive adverse attention;
- environmental incidents with significant or major negative impact; and
- significant adverse reactions from other authorities, media or the general public.

Dangerous Occurrence HIPO

A Dangerous Occurrence HIPO is a high potential Near Miss occurrence that under slightly different circumstances could easily have resulted in a major incident.

Serious Incident

A Serious Incident is an incident, including a security incident, involving any of but not limited to the following:

- medical treatment within forty-eight (48) hours of exposure to a substance;
- immediate medical treatment as an inpatient in hospital;
- loss of distinct part or organ body, including amputation;
- loss of consciousness and/or requiring resuscitation;
- serious head injury;
- serious eye injury, including temporary loss of sight;
- separation of skin from any underlying tissue, such as scalping or de-gloving;
- electric shock;
- spinal injury;
- fracture other than to fingers, thumbs or toes;
- employee being absent for more than six (6) days;
- second or third-degree burns;
- inhalation, ingestion or skin absorption endangering health;
- environmental incident with serious negative impact; and
- substantial damages costing above AED 500,000 /-.

Dangerous Occurrence

A Dangerous Occurrence is an incident without injury or damage involving any of but not limited to the following:

- explosion or fire;
- collapse of equipment;

- machinery damage;
- collapse of a building / structure;
- escape/leakage of flammable substances;
- escape/leakage of hazardous substances;
- electrical contact;
- struck by (falling/flying object, moving machinery); and
- caught between (moving parts of machinery/objects).

Significant Incident

A Significant Incident is an incident, including a security incident, involving any of but not limited to the following:

- fracture of the fingers, thumbs or toes;
- any injury resulting in work restriction;
- significant damages costing above AED 100,000 /- (but less than AED 500,000 /-);
- minor impact on company reputation;
- external medical attention for more than twenty-four (24) hours;
- reportable environmental incidents; and
- reactions from other authorities or the general public.

Minor Incident

A Minor Incident is a recordable incident, including a security incident, involving any of but not limited to the following:

- minor injuries which can't be treated by first aid;
- any Near Miss;
- damages in excess of AED 10,000 /-;
- external medical attention for less than twenty-four (24) hours; and
- recordable environmental incidents.

Slight Incidents

A Slight Incident is a recordable incident, involving any of but not limited to the following:

- first aid treatment;
- damages in excess of AED 1,000 /-; and
- any other recordable occurrence.

14.2 Incident Classification

Categories	HARM TO PEOPLE	ASSETS DAMAGE	NEAR MISS
Level			
Major	<ul style="list-style-type: none"> Fatality or permanent total disability Multiple permanent disabilities Major environmental incident 	<ul style="list-style-type: none"> Extensive damages – in excess of 2,000,000 AED 	<ul style="list-style-type: none"> Dangerous occurrence HIPO with potential of: major harm or loss catastrophic impact on reputation extensive adverse attention
Serious	<ul style="list-style-type: none"> Single permanent partial disability Lost time incident (LTI) Serious environmental incident 	<ul style="list-style-type: none"> Substantial loss in excess of 500,000 AED Any incident related to serious occurrences 	<ul style="list-style-type: none"> Dangerous occurrence with potential of: Serious harm or loss
Significant	<ul style="list-style-type: none"> Restricted work case Significant environmental incident 	<ul style="list-style-type: none"> Substantial loss in excess of 100,000 AED 	<ul style="list-style-type: none"> Occurrence with potential of: Significant harm or loss
Minor	<ul style="list-style-type: none"> Medical treatment case Minor environmental incident 	<ul style="list-style-type: none"> Damages in excess of 10,000 AED 	<ul style="list-style-type: none"> Occurrence with reasonable potential of: reportable harm or loss
Slight	<ul style="list-style-type: none"> First aid case 	<ul style="list-style-type: none"> Damages in excess of 1000 AED 	<ul style="list-style-type: none"> Any other occurrence

14.3 Notification and Communication Process

Time frame	Immediate	Within twenty-four (24) hours	Within three (3) days	Within ten (10) days	Monthly Reporting
Level					
Major	Reportable notification to DMCC by phone 04 4232999	Notification report	Investigation report and review meeting with DMCC	Updated report and action plan	Monthly statistical report
Serious	Reportable notification to DMCC by phone 04 4232999	Notification report and First aid report	Investigation report and medical certificate	Updated report, action plan and review meeting with DMCC	Monthly statistical report
Significant	Reportable notification to DMCC by phone 04 4232999	Notification report and First aid report	Investigation report. Medical certificate	Action plan and meeting upon request by DMCC	Monthly statistical report
Minor	Recordable report on request	Notification report on request	Investigation report. Medical certificate on request	Monthly statistical report	
Slight	Recordable report on request	To be recorded	To be kept on record	Monthly statistical report	

Further contact details for any non-emergency are:

email ccc.jlt@dmcc.ae AND HSE@dmcc.ae

or phone: 04 4232995 and for emergency: 04 4232999.

14.4 Sharing Lessons Learned

Sharing key findings and lessons learned with a wider audience is fundamental in order to allow other industrial units/personnel to avoid similar Accidents by taking targeted action.

Employers must submit a report containing details of the lesson learned to DMCC within seven (7) days of the incident investigation completion.

Such report must include a brief description of the following:

- what happened and the actual/potential loss;
- key contributing factors/critical factors;
- direct and system causes;
- corrective actions; and
- key lessons learned.

CHAPTER 15 SAFETY WARNINGS, NOTICES AND FINES

DMCC has a process for warnings and violations for HSE issues within the DMCC Free Zone and the Master Community. If an HSE violation occurs, a warning with financial penalty may occur.

If an employer's HSE performance is unacceptable to DMCC, a formal warning system will be used.

The warning system is as follows:

1. Step One – Warning issued by DMCC from an inspection or incident with potential fine for serious breaches;
2. Step Two – Improvement notice/final warning and financial penalty;
3. Step Three - Prohibition notice/stop work notice and financial penalty; and
4. Step Four – Termination of licence/contractor.

A total of three (3) HSE warnings in any twelve-month period will result in further sanctions being implemented by DMCC.

Should any failure to adhere to prescribed standards be discovered during any HSE inspection, the employer responsible for the deficiencies will be notified verbally at the time and sent a written violation notice within three (3) days of the inspection taking place.

Should the written notice issued from DMCC not be addressed and responded to within the given timeframe, the employer shall face further sanctions.

DMCC shall complete a follow-up inspection after issuing the written notice. If this second inspection reveals the same repeated observations, a prohibition notice and further financial penalty will be issued. If a prohibition notice is issued, no work or operations can continue until all fines are paid, the workplace has been rectified to a suitable safe condition and the prohibition notice officially lifted by DMCC.

Once a fine is issued, payment must be made in the timeframe given in the written notice in order to avoid further sanctions which may result in termination of license. No fine that has been issued will be rescinded or reduced by DMCC.

CHAPTER 16 MONITORING AND PERFORMANCE MEASUREMENT

16.1 HSE System Implementation

The level of compliance to these HSE Guidelines will be measured through audits and inspections, both internal, conducted by the employer, and externally, by DMCC or its nominated representative as required. Specific audits will be conducted to measure the effectiveness of the employers' HSE program and compliance with these HSE Guidelines.

Action plans must be developed by the employer based on audit and inspection findings highlighting the detailed steps required for corrective and preventive actions. Actions will be tracked and monitored via an action tracking registry.

All HSE statistical reports including key issues/highlights must be reported to DMCC without fail on a monthly basis.

16.2 Industrial Annual Fitness Certificate Inspections (IAOFC)

The process of IAOFC inspections ensures that each company operating from any industrial facility within the DMCC Free Zone and the Master Community complies with all the requirements set forth by Applicable Legislation. IAOFC inspection request forms must be submitted prior to the commencement of any operations/activities carried out in an industrial facility.

IAOFC inspections shall be carried out bi-annually by the DMCC nominated representative. Employers shall provide the nominated representative unrestricted access to their units to undertake these inspections. Industrial facilities who fail to pass the IAOFC inspection will not be able to renew their DMCC trade license. Industrial units who fail to meet the requirements set out by the IAOFC inspection and/or fail to allow the inspections to be undertaken shall have their DMCC licenses suspended.

16.3 Inspections by DMCC

DMCC may at any time, in its absolute discretion, enter any property within the DMCC Free Zone and the Master Community for the purposes of conducting an HSE inspection of that premises to investigate whether the unit is in compliance with DMCC requirements and any other Applicable Legislation.

All employers/Owners or their representatives shall, on demand, provide DMCC with immediate access to their premises so that DMCC may undertake an inspection.

An employer/Owner, or its representative, shall not in any way restrict or hinder DMCC access to the premises. On completion of an inspection, DMCC will issue a report or written notification which must be addressed and closed out by the employer/Owner or their representatives in the time frame stipulated by the report to avoid further action being taken by DMCC.

16.4 Inspections for Retail

The appointed Managing Agent's role is to conduct "food and health safety" inspections for all retailers to ensure that they are in line with DM regulations with regard to public health and safety. This reduces hazards and enhances the consistency of good practices.

There are different stages of these inspections:

Stage (1): Layout and Design Inspection must be conducted after completion of fit out work to verify and ensure that the work has been completed in accordance with design and food and health safety requirements.

Stage (2): Unannounced Operations Inspections must be conducted in order to verify and ensure that all operational procedures and practices are carried out in accordance with food and health safety requirements.

In parallel, DM's "Food Control Department - Inspectors" and "Health Control Department - Inspectors" will conduct random, unannounced inspections of all food premises and retail in order to control food and health safety in the DMCC Free Zone and the Master Community.

Both parties, DM and the Managing Agent, will issue inspection reports to retailers to give them the opportunity to take appropriate action in response to the comments. Follow-up inspections will be conducted by both parties to ensure that all required actions have been taken. Should retailers not take remedial action, or repeat the violations, they will be fined.

Reports issued by DM's inspectors will include the inspector's name, email address and contact number at the end of the report, so they can be approached directly with queries.

DMCC's compliance inspectors will additionally carry out inspections. The focus of their inspections is to ensure that DMCC members comply with the DMCC Rules and Regulations as they apply to licensing, operations, offices, visas and other areas covered by the DMCC Rules and Regulations.

16.5 Inspections of Hotels, Guest Houses and Furnished Apartments

The DTCM and any other applicable authorities may:

- inspect hotels, guesthouses and furnished apartments for the purposes of licensing and classification and their renewal;
- conduct sudden inspection of any hospitality establishment to verify its compliance with DTCM's Administrative Order No. (3) of 1998 concerning the Rules of Inspection on Hotels, Guesthouses and Furnished Apartments; and
- investigate complaints submitted by guests or others against the establishment or any of its facilities.

Inspections must only be conducted on vacant units and the number of units to be inspected must follow DTCM's Administrative Order No. (3) of 1998 *Concerning the Rules of Inspection of Hotels, Guesthouses and Furnished Apartments*.

Documents that may be reviewed during inspections include:

- reports on the occupancy of rooms;
- table of staff shifts;
- tables of attendance of workers and employees;
- reports on maintenance and cleaning of rooms; and
- cards of safety deposit boxes.

16.6 HSE Performance, Measurements, Statistics and Charts

Incident counts and frequency rates must be monitored, measured and reported to DMCC on a monthly basis. The monthly report must be submitted to DMCC without fail within four (4) days of the next month. As a minimum, the employer/Owner/Owner's Representative in certain sectors shall include in the monthly report the following HSE performance statistics for the month:

- man hours;
- man power;
- reportable incidents;
- work days lost due to incidents;
- recordable incidents;
- lost workday cases, restricted workday injuries and medical treatment case;
- all fires and explosions;
- property damage;
- dangerous occurrences;
- Near Misses;
- any unusual incident that needs to be reported to protect DMCC from adverse publicity;
- lost time incident (LTI) frequency rate;
- number of inductions, tool box talks, training, drills;
- HSE meetings;
- inspections and audits;
- number of observations and enforcements; and
- waste management.

CHAPTER 17 ENVIRONMENTAL REQUIREMENTS

The employer/Owner/Owner's Representative is responsible for compliance with all environmental requirements in Applicable Legislation and the DMCC Rules and Regulations in place from time to time.

DMCC believes strongly in the following actions:

- reuse;
- reduce;
- recycle;
- treatment; and
- disposal

17.1 Environmental Protection

All employers/Owners/Owner's Representatives are required to produce an environmental plan. This environmental plan must cover environmental impacts such as control of industrial activities and definitions of all environmental aspects related to the industrial activities highlighted in the environmental impact assessment (EIA) or which can have significant environmental impact, and for which it is required to take adequate protective and preventive action, in line with the applicable environmental laws, including those mentioned in Appendix II of these HSE Guidelines.

The environmental plan must reflect the findings for industrial activities and address the following:

- spill prevention and response;
- waste management;
- indoor air quality;
- Noise and vibration control;
- environmental protection training; and
- environmental monitoring.

17.2 Environmental Monitoring

There are a number of specific environmental issues to be considered where applicable:

- Noise and vibrations;
- atmospheric pollution;
- control of potential spills;
- energy management;
- waste management; and
- housekeeping.

17.3 Noise and Vibrations

The general objective for the management of potential environmental impacts in respect of Noise and vibration shall be to control and limit Noise and vibration levels at their source. This can be achieved by the use of best practicable means (BPM) (e.g. by careful selection of machinery and equipment, maintenance and location of that machinery and equipment and use of Noise barriers/screening) and ensuring compliance with Applicable Legislation and municipal/local Noise limits and through the workplace environmental impact assessment.

Noise must be controlled in accordance with the employer's procedure and with an environmental monitoring and mitigation plan in line with the relevant requirements in Applicable Legislation.

Noise emanating from hotels and bars must not interfere with the peace and comfort of their neighbours. According to Article 75 of the *Environment Protection Regulations*, Noise from any form of entertainment must not exceed 55dBA from 7:00am to 8:00pm and 45dBA from 8:00pm to 7:00am. *Guidelines for the Control of Entertainment Noise* state that car park areas must not be closer than 50m from residential premises and proper sound proofing of the building shall be provided to eliminate the migration of loud Noise.

17.3.1 Noise During Construction

During Construction, building and demolition works, Noise has the potential to exceed allowable limits. Noise can range from Noise affecting the general public and neighbours to Noise affecting employees in the workplace.

Allowable limits for Noise levels in different areas and at different times must be in accordance with requirements specified with the *Environment Protection Regulations* and the *Code of Construction Safety Practice*.

Permitted hours of work imposed by DM are that no work is allowed on Fridays and public holidays and Saturday to Thursday hours restricted to between 7:00am and 8:00pm. Work outside these hours requires prior approval.

Heavy gavels can cause impact or impulsive Noise and must not exceed 140 dBA peak sound pressure levels and permitted number of impacts, as outlined in the *Code of Construction Safety Practice*.

In the case of night work (8:00pm to 6:00am), the Contractor shall obtain a night work permit from DM and DMCC. Contractors shall inform neighbours about the time and duration, type of work to be performed and emergency contact numbers of technical supervision personnel.

Construction work must be scheduled to limit disruption and reduce its effects on its neighbours as far as possible. Technical, engineering and administrative control measures must be implemented, where practical, to reduce and limit Noise of site machinery, Noise from dewatering pumps or electrical pumps or other sources of Noise. When Noise cannot be sufficiently reduced by careful site of Noise sources, acoustic barriers or walls must be constructed.

Table 4 below specifies the Noise allowable limits to be adhered to during Construction activities. Further Noise control and Noise measurement requirements are specified in the Technical Guideline Number (9) *Requirements For The Reduction of Construction and Demolition Noise*, April 2011, of the Environment Department.

Table - Noise Allowable Limits in Different Areas

Area	Allowable Limits for Noise Level (dBA)	
	Day (7 a.m. – 8 p.m.)	Night (8 p.m. – 7 a.m.)
Residential area with light traffic	40-50	30-40

Residential areas in Downtown	45-55	35-45
Residential areas which include some workshops and commercial business or residential areas near the highways	50-60	40-50
Commercial areas and downtown	55-65	45-55
Industrial areas (heavy industry)	60-70	50-60

17.3.2 Noise within Master Community

Noise levels must be kept to a reasonable level and care must be exercised when operating vehicles, radios, televisions, musical instruments, music centres, tools and other devices that generate or produce Noise.

Construction Noise within the DMCC Free Zone and the Master Community is regulated by the DMCC and its Managing Agent and must be in accordance with Applicable Legislation.

Noise generated by garden and power equipment is considered acceptable during the following times:

- Saturday to Thursday between 7:00am to 8:00pm; and
- Fridays and public holidays between 9:00am and 5:00pm.

17.4 Atmospheric Pollution

During all activities, consideration is to be given to atmospheric pollution which involves any potential nuisance and the release of air pollutants associated with aerial Emissions. The general objective for the management of potential impacts in respect of atmospheric pollution shall be to carry out activities, so far as is reasonably practicable, to minimize Emissions to the air from pollutants, including odour, in accordance with Applicable Legislation and by the use of best practicable means.

To avoid the creation of any nuisance, the employer/Owner/Owner's Representative must take all reasonable steps to avoid the creation of pollution by fitting a scrubber system within applicable ventilation systems. Periodic air quality testing is required by DMCC or any other Relevant Authority, as applicable, to monitor indoor air quality. Records must be kept and available for review during any inspection, and a log of air quality testing that must be kept up to date and submitted to DMCC during the licence renewal process.

During Construction activities, consideration must be given to atmospheric pollution which involve potential dust nuisance and the release of other air pollutants associated with aerial Emissions. Refer to Section 4.6.5 of these HSE Guidelines for further details.

To avoid the creation of any nuisance, the Contractor shall take all reasonable steps to avoid the creation of dust by:

- making provision for the screening, enclosure and spraying of stockpiles of soil, rubble and Construction materials, especially in dry, windy conditions;
- damping down soil/other materials before depositing;
- ensuring that adequate sheeting is provided on each spoil load to prevent the spoil falling;
- minimising the time that earth/soil is stored;
- employing dust controls for "special operations", e.g. soft remediation, soil transport and mixing operations; and
- sealing and/or re-vegetating completed earthworks as soon as possible after completion.

The Contractor shall also implement the following measures:

- provide easily cleaned hard standings for vehicles entering, parking on and leaving the site, where practicable;
- perform regular inspections for on- and off-site activities to assess the effectiveness of dust mitigation measures; and
- implement a dust monitoring program.

17.5 Control of Potential Spills

The employer/Owner/Owner's Representative or Managing Agents within the Master Community must have an emergency spill kit available, which contains the following:

- oil/chemical absorbent material (mats, booms, sand etc.);
- hand or electric pump;
- chemical resistant gloves;
- chemical resistant overalls;
- chemical resistant calf length boots;
- chemical resistant face shield;
- respirators with cartridges suitable for chemical mist; and
- hazard warning tape.

Employees must be trained to be aware of the dangers of spills and how to respond in a safe manner. Spill response teams must be trained to handle a range of spill materials and scenarios and be aware of waste disposal requirements of Applicable Legislation.

17.6 Energy Management

Employers shall consider energy management issues as an on-going part of their responsibilities. Wherever possible, efficient use of energy must be encouraged through appropriate instruction and training of personnel.

Portable electrical equipment must conform to Applicable Legislation with respect to efficiency and testing. Trained personnel must be expected to work efficiently to minimize the use of fuel gases. Diesel generators must also be used as efficiently as possible.

17.7 Waste Management

As part of most activities, waste is generated daily. In the Emirate of Dubai, waste is classified into 4 categories as outlined in *Technical Guidelines No 1. Waste Storage Requirements for Municipal Solid Waste*, 2015 Revision, by the Waste Management Department of DM, and waste must be handled, transported and disposed of according to environmental hierarchy of controls to protect human health and the environment

The purpose of waste management is to ensure that:

- disposal of waste is conducted in a safe and environmentally friendly manner;
- all options are considered to minimize, eliminate, prevent and reuse waste materials; and
- method of disposal is suitable and sufficient for the waste generated.

The correct identification, segregation and storage of waste is fundamental to proper waste management in order to identify which of the waste disposal options is best suited to the waste generated by the operation. Employers/Owners/Owner's Representatives are responsible for the management and disposal of its waste in accordance with these HSE Guidelines.

Potential sources of waste generation are:

- general industrial and Construction activities;
- provision and maintenance of mess halls;
- workshops; and
- materials store.

In accordance with *Technical Guidelines no 2. Waste Collection and Transport*, 2015 Revision, by the Waste Management Department of DM, containers must be emptied at least three (3) times a week for waste with organic contents (putrescible components) and at least once a week for waste with only non-organic contents or as often as necessary when required to prevent health hazards and odour/pollution. The frequency of collection/emptying must be adjusted to prevent waste overflow and in response to public complaints.

Waste collection must only be performed by DM-approved waste collectors.

17.7.1 Garbage and Solid Waste

Garbage

Garbage includes wood, plastic, paper, food waste, packaging materials, etc. These wastes must be collected in different containers: one for plastic and metal, one for wood, one for glass, and one for the other ones.

All garbage must be placed in general waste collection bins located at the specific points around to facilitate material re-use and recycling to their maximum extent.

All garbage waste must be transported to an approved dump or recycling site.

Scrap Metal and Wood

Scrap metal and wood must be segregated and placed in a designated area prior to disposal at the approved landfill site, as non-hazardous waste.

Hazardous waste

Where hazardous waste is produced, a register shall be kept, and must include methods of disposal and parties contracted to receive the waste. The hazardous waste must be transported to an authorised dump site, maintaining a documented manifest.

According to the DM Circular No. (5) of 2014 *Regarding Management and Controlling the Handling and Disposal processes of Hazardous Waste*, employers shall obtain prior approval from DM for consignment of any recyclable hazardous waste to a material recovery facility or waste recycling or disposal site.

Proposed methods for storage and disposal may include:

- waste oil must be placed in metal containers located at worksite and subsequently transferred to a waste oil contractor;
- oily rags must be placed in a separate metal container provided within each workspace. They must not be mixed with other combustible materials or stored in direct sunlight;
- used oil filters must be drained into a waste oil container, placed in the waste collection bin marked as "filters" and subsequently transferred for disposal;
- all used batteries must be returned to the materials yard. Arrangements for disposal must be made; and
- all soil/underground water that is contaminated must be treated and disposal as defined in the soil remediation study and plan, as indicated in local laws.

Disposal of hazardous waste must be in accordance with UAE Federal Law No. (24) of 1999 *for the Protection and Development of the Environment* and the DM *Technical Guideline Number (6) Disposal of Hazardous Wastes*, May 2017.

Drums and containers

Drums and containers include metal and plastic containers, crates and packaging. Metal and plastic containers, used for a wide range of chemicals, can present problems for storage and disposal as they accumulate.

All chemical drums and containers (empty or partially full) must be segregated and stored in a special designed storage area.

All drums and containers must be securely closed to avoid any possible leakage of variable quantities of residues.

If transfer of materials is necessary, steps must be taken to identify the contents and any associated handling hazards, the suitable protective equipment that must be worn and precautions taken to minimize the risk.

Non-refillable containers must be returned to the supplier. Where this is impracticable, arrangements must be made for suitable disposal.

Wherever possible, crates and packaging may be reused. Damaged crates and unsuitable packing must be broken down and incinerated as garbage.

17.8 Water Emissions and Discharges

Ground water from any well point must be cleaned prior to discharge if the chemical parameters do not meet the locally set limits for the discharge or collected in the municipal black water system.

All water discharges from the Construction site directly collected into the surface water municipal black system shall, as a minimum, be free from visible oil. The Waste Water from the site facilities must be

collected and disposed of in a suitable way by a sewage truck or directly in the municipal black water system. Owners/Owner's Representatives shall monitor the discharge from these systems for its own facilities.

The Relevant Authority involved shall be consulted, particularly in respect of the need for appropriate consents and/or licenses. Drip trays or suitable bunds must be utilized by the Contractor in conjunction with items of fixed and portable (mobile) plant (e.g. generators) to prevent contamination of surface soils and run-off. Drip trays must be positioned away from any watercourse or drains and surrounded by an earth or sand bund with an impervious base of plastic sheet and inspected daily and emptied when required.

Any spillage must be cleaned up and contaminated soil removed from site for disposal. Direct access by mechanical plant to a watercourse must be kept to an absolute minimum. Where it is necessary that such machinery be used in a watercourse, then it must be delivered to the site in a clean condition and must be maintained to the highest standard in respect of fuel, lubrication and hydraulic system to ensure no leakage.

17.9 Housekeeping

The objective of pursuing good housekeeping is to:

- minimize personnel injury hazards and fire hazards;
- conserve space, time, materials and effort;
- create and maintain good working conditions; and
- protect the environment.

General

All materials and equipment must be kept in an orderly and safe manner. This applies equally to stores, work areas and offices.

All surfaces outside or inside an industrial unit's area must be kept free from litter, refuse, spills of chemicals and other liquids which might cause slipping or constitute a fire hazard.

External space must be free of nails, steel cut-offs or other sharp objects liable to cause injury to persons or damage to equipment tires and the like. These materials must be confined to the space dedicated to relative activities, where correct means of disposal must be applied.

Walkways and staircases must be kept free from obstructions at all times.

Trash

Trash containers collected as part of the Master Community must be placed at the areas designated in the workplace. The containers must be collected, loaded and removed regularly.

Any hazardous material waste must be removed as quickly as possible. A specific waste management plan must cover the proper disposal of wastes of all kind.

Used cotton waste, oily rags and similar waste are liable to spontaneous combustion if left exposed to the air. Such waste must always be deposited in metal containers, which have closed fitting lids. These containers must be emptied on a regular basis.

Wood removed from packing cases, shuttering, etc., must have all nails removed or hammered flat before being kept for future use or disposed of in any other way. All nails must be collected and not allowed to lie on the ground where they might cause injury to persons stepping on them. Injuries from nails can be serious and all injuries due to them should receive medical attention without delay.

Refuse must not be allowed to accumulate on or around machines, but must be collected and deposited in the appropriate place for disposal. Persons clearing refuse or other scrap metal must take extreme care against injury and must wear hand and foot protection. Where necessary, eye protection must also be worn.

Food

All food waste, empty drink cans, etc. must be disposed in the correct containers/bins provided for this purpose. Collection of such waste from the workplace must be done daily. Under no circumstances shall food waste be permitted to accumulate so as to pose a health hazard or nuisance.

Paper recycling

Used paper disposal must be deposited in special containers /bins designated for recycling purposes.

Employers must prepare a procedure for housekeeping and recycling.

CHAPTER 18 GREEN BUILDING REGULATIONS

DMCC is committed to ensure that all stakeholders are engaging in their business activities without directly impacting the environment and to ensure sustainable design and Construction practices are implemented in accordance with the *Green Building Regulations*.

The *Green Building Regulations* aim to improve the performance of buildings in Dubai by reducing the consumption of energy, water and materials. The intention of the *Green Building Regulations* is also to improve public health, safety and general welfare by enhancing the planning, design, Construction and operation of buildings.

The *Green Building Regulations* apply to villas, residential/commercial buildings, public and industrial buildings, all new buildings, additions, extensions and refurbishment of existing buildings which require a building permit from DM and existing buildings, when specified.

18.1 Ecology and Planning

Access and Mobility

Designated preferred parking must be provided for:

- a combination of low-emitting, fuel-efficient and carpool vehicles for at least 5% of the total vehicle parking spaces, applicable to buildings with more than 20 parking spaces; and
- people with special needs.

Secure and covered racks or shaded storage areas for bicycles must also be provided.

Ecology and Landscaping

Plant and tree species which are indigenous or adapted to Dubai's climate and region must be planted for all new buildings.

Neighbourhood pollution

Exterior lighting must be installed to limit disruption to the neighbours and fitted with automatic controls to ensure they do not operate during daylight hours.

For microclimate and outdoor comfort specific requirements for urban heat island effect, green roofs, light colours on the outside of buildings, orientation of glazed facades, hardscape and shading of public access areas must be adhered to, as specified in Section 3 (Chapter 4) of the *Green Building Regulations*.

As part of responsible Construction, the impact of Construction, demolition and operational activities must be limited to avoid land disturbances or soil erosion, pollution of watercourses or groundwater, dust generation, excessive or uncontrolled Construction waste, Construction Noise, storage of chemicals, fuels and hazardous materials and light pollution.

EIAs and construction environmental management plans for buildings intended for industrial use or buildings that have the potential to generate hazardous or toxic wastes, such as laboratories, waste recycling or waste treatment facilities, must be submitted to the Environment Department for approval.

18.2 Building Vitality

Ventilation and Air Quality

Building Occupants must be protected from airborne contaminants and toxic substances during Construction, renovation or decoration. Where appropriate, all ducts and related air distribution components must be covered to prevent dust from collecting in the system.

Air inlets and exhausts must be located at appropriate distances from potential sources of contamination to reduce the possibility of odor, smoke or other air contaminants entering the ventilation system.

Separate extraction systems must be provided for activities producing hazardous fumes or chemicals.

Indoor Air Quality

Contaminants within buildings can range from formaldehyde, total volatile organic compounds (TVOC), respirable dust (<10 microns), ozone, carbon dioxide, carbon monoxide, bacteria and fungi. Indoor air testing must be performed to ensure that the maximum limit of contaminants is not exceeded as defined within the applicable indoor air quality requirements in the *Green Building Regulations*.

Testing for air quality must be carried out by an air testing company or DM-accredited laboratories. Results must be submitted to DMCC and DM.

Equipment used to perform air quality testing must be calibrated and initial and periodical calibration certificates maintained. As a minimum, annual calibration must be performed by external calibration facilities and records retained for future inspections by DMCC or DM. Control practices for indoor air quality must be in compliance with the applicable indoor air quality requirements in the *Green Building Regulations*.

Smoking

Article 7 of the UAE Federal Law No. (15) of 2009 *Regarding Tobacco Control* states that smoking is prohibited in closed public places. According to the *Public Health and Safety Regulations*, smoking is strictly prohibited in the following public spaces, unless annual permits are obtained from the Public Health and Safety Department of DM:

- shopping centres;
- hotels;
- restaurants;
- government buildings;
- hospitals;
- healthcare facilities;
- commercial buildings;
- common accommodation;
- coffee shops; and
- amusement and entertainment or any other places determined by DM.

Shisha smoking in parks, beaches and all public recreational areas is banned by DM. Shisha cafes are not allowed to operate within 150m of residential areas, schools and mosques, unless a special license has been provided by DM.

Hazardous Material

All paints and coatings, adhesives, adhesive bonding primers, adhesive primers, sealants and sealant primers used in buildings must not exceed allowed limits of volatile organic compounds (VOCs) and must be accredited/certified by the Dubai Central Laboratory or DM-approved sources.

Carpets must be certified by the Dubai Central Laboratory or DM-approved sources and are not allowed in labor accommodation or other areas specified by DM.

Day Lighting and Visual Comfort

Day lighting and visual comfort must be achieved by providing adequate daylight to improve conditions for the building Occupants and to reduce their dependence on electrical lighting.

18.3 Energy

Building Fabric and Systems

All new air-conditioned buildings must adhere to specific requirements specified in Section 5 of the *Green Building Regulations* for:

- Thermal Transmittance (also known as U Value);
- Shading Coefficients (SC);
- light transmittance value;
- Thermal Bridging;
- design parameters;
- air loss from entrance and exit; and
- air leakage.

HVAC equipment and systems for new air-conditioned buildings must comply with the minimum energy efficiency requirements and test procedures listed in Reference Tables 502.01(1) and 502.01(2) of Section 5 of the *Green Building Regulations*.

Demand Control Ventilation

Demand Controlled Ventilation (DCV) must be used in spaces larger than 100 m² with maximum design occupancy of 25 people per 100 m². CO² levels must remain below 800 ppm and, if such levels rise above 1000 ppm, an alarm must be audibly or visibly triggered. CO² sensors and systems must be checked and recalibrated as per Manufacturer's recommendations, but not to exceed twelve (12) months, by a DM-approved contractor.

Elevators and Escalators

Escalators must be fitted with controls to reduce speed or to stop when no traffic is detected and designed and fitted with energy-saving features. Elevators (lifts) must be provided with controls like AC variable voltage or variable frequency drives and energy efficient lighting to reduce the energy demand.

Lighting Power Density

Lighting power density for interior and exterior connected lighting load must be according to Table 502.04 (1) and 502.05 (1), respectively, of the *Green Building Regulations*.

Occupants must be provided with lighting controls to allow lights to be switched on or off as and when required or when spaces are unoccupied. Occupant sensor-controlled lighting must be fitted in offices, corridors and lobbies.

Hotel rooms must be fitted with controls systems that are able to turn off the lighting, air conditioning and power when the room is not occupied.

Pipes and Ducts

To minimize heat loss and air leakage and prevent condensation, all pipes carrying refrigerant, hot water or chilled water and ducts, including prefabricated ducts, supplying conditioned air must be insulated.

Minimum insulation thickness for pipes passing through unconditioned spaces must be in accordance with requirements specified in Tables 502.11(1) and 502.11(2) of the *Green Building Regulations*.

Mechanical-electrical and plumbing systems in air-conditioned buildings must be serviced and maintained regularly. Such systems must be accessible to allow for regular inspection, maintenance and cleaning according to a preventative maintenance schedule as per Manufacturer's recommendations. Inspection and maintenance must be performed by a DM-approved maintenance contractor, with records and service log books retained on site for inspection by the DMCC or any other Relevant Authorities, as applicable.

Commissioning and Management

Air-conditioned buildings with a cooling load of 2 MW or greater, re-commissioning of ventilation, water systems central plant, lighting and control systems must be carried out every five (5) years.

Re-commissioning must be carried out in accordance with the requirements of Regulation 503.01 and 503.02 of the *Green Building Regulations*. Commissioning must be performed by DM-certified contractors and results recorded and be made available for inspection by DMCC or DM.

Electricity Meters

Electricity meters must be fitted to measure and record electricity demand and consumption of a facility. All major energy consuming systems with a load of 100 kW or greater must be sub-metered. Electricity demand and consumption records must be retained for five (5) years. Metering must be connected to allow real-time profiling and management of energy consumption, where a building management system (BMS) or central control and monitoring system (CCMS) is installed. Electricity meters must be approved by DEWA and be capable of data logging and remote data access.

Air Conditioning Meters

Air conditioning meters must be fitted to measure and record chilled water supply to air conditioning units and to provide accurate records of consumption, where central air conditioning is provided to several customers. Meters used must be specifically designed for the measurement of chilled water rather than for hot water and must allow data logging and remote data access.

Central control and monitoring systems

Central control and monitoring systems must be available to ensure that the building's technical systems operate as designed and as required during all operating conditions if buildings have a cooling load of 1 MW or gross floor area of 5,000 m² or greater. Such monitoring systems must also allow for full control and monitoring of system operations and for diagnostic reporting.

Additional lighting load must be powered entirely through renewable electricity sources where the exterior lighting power density exceeds specifications in Regulation 502.05 of the *Green Building Regulations*.

18.4 Water

Water-conserving fixtures, such as dual flush toilets, flow-controlled showerheads, hand wash basins, kitchen sinks or urinals, must be installed in new buildings. Flow rates must meet requirements specified in Table 601.01(1) in the *Green Building Regulations*.

During the operation of air conditioning equipment, condensate is produced in all buildings. All condensate must be collected and disposed of and, if it cannot be reused, it must be discharged to the wastewater system through a properly sized water trap. This applies to new and existing buildings. Condensate water accumulating from building with a cooling load equal to or greater than 350kW must be recovered and used for irrigation or for purposes where it does not come in contact with the human body.

Water meters must be fitted to measure and record water demand and consumption of the facility as a whole and to provide accurate records of consumption. Water consumption must be recorded by the building operation and records retained for five (5) years. Submetering is required for larger buildings with cooling loads of 1 MW or gross floor area of 5,000 m² or greater.

If a system is installed for the collection and reuse of greywater produced within the building or for the use of Treated Sewage Effluent (TSE) from an external source, the requirements specified in Regulation 603.01 of the *Green Building Regulations* must be adhered to.

18.5 Materials and Waste

Thermal and acoustical insulation materials incorporated into buildings must be CFC-free, non-toxic and not releasing toxic fumes during combustion, contain less than 0.05ppm formaldehyde, have VOCs less than 0.1 TLV, fire resistant as per DCD requirements, accredited and certified by Dubai Central Laboratory and approved by DM.

Timber and timber-based products (at least 25%) used during Construction and permanently installed in the building must be approved by DM.

According to Regulation 701.03 of the *Green Building Regulations*, ACM must not be used for any new buildings or for the maintenance, addition or alteration of existing buildings.

Only Dubai Central Laboratory-accredited or DM-approved paints and materials containing lead or other heavy metals may be used for the maintenance, addition or alteration of existing buildings.

Ozone Depletion Potential (ODP) Material Management

HVAC and refrigeration equipment must contain refrigerants with zero ozone depletion potential (ODP) or with Global Warming Potential (GWP) less than 100. Equipment containing less than 0.23 kg of refrigerants are exempted.

Ozone-depleting substances (Chlorofluorocarbons [CFCs], Hydrochlorofluorocarbons [HCFCs] or Halons) are not permitted for use in fire depression systems.

The following requirements for existing equipment must be adhered to:

- CFC and halon-based materials are permitted; and
- HCFC based materials or any other material having any ODP are not to be used for any purposes as from 1 January 2030.

During equipment maintenance, the venting or direct discharging of any refrigerants is strictly prohibited. The recovery, reclamation, recycling and reuse of refrigerants must be practiced at all times.

Recycled content and regionally sourced materials must account for at least 5% of the total volume of materials used in the Construction of a new building.

Composite wood products used in the interior of the building must not contain added urea-formaldehyde resins in new buildings.

Waste Management

At least 50%, by volume or weight, of waste material generated during the Construction and/ or demolition of buildings must be diverted from disposal in landfills and diverted materials must be recycled or reused.

Excavated soil and land-clearing debris and hazardous waste are exempt from the calculation of the percentage of waste diverted from disposal at landfill facilities.

Bulk waste storage areas must be provided for waste, such as furniture, electrical appliances and sanitary ware. These storage areas must be reachable and must not restrict access to the building and comply with DM safety and fire requirements.

All new buildings that require chutes for general waste must comply to specifications in Regulation 702.04 of the *Green Building Regulations*, and if no chute is required, garbage rooms on each floor must have a minimum floor area of 3 m² for waste to be stored in designated receptacles until waste collection.

Sorting and storage facilities for recyclable materials must be provided and be easily accessible and comply with the DM Building Regulations in terms of location, access and specifications of general waste areas.

CHAPTER 19 CORRESPONDENCE AND COMMUNICATION

All correspondence relating to industrial HSE issues should be addressed to:

- Security: Ccc.jlt@dmcc.ae
- HSE: HSE@dmcc.ae

All written correspondence must be accompanied with a cover letter addressed to the Executive Director of Property.

The following telephone numbers should be used for dealing with HSE issues:

- Emergency Tel: 04 4232999
- Non-Emergency Tel: 04 4232995

APPENDIX I - HEALTH AND SAFETY LEGAL REQUIREMENTS

Federal Law No 8 1980											
Description	Central piece of labour legislation and contains general duties of employers to ensure the Health and Safety of all persons in their employment.										
Key Objectives	Health and Safety legislation covering all workplaces and employees, UAE national and Expatriates										
How it applies to DMCC Free Zone and Master Community	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #e1f5fe;">Reference</th> <th style="background-color: #e1f5fe;">Requirement</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e1f5fe;">Article 91</td> <td>Every employer must provide adequate means of protection for the employee from the hazards of injuries and vocational diseases that may occur during work as well as the hazards of fire and other hazards arising from use of machines and other tools. All means of protection applied must be approved by the Ministry of Labour and Social Affairs. The employee must use protective equipment and clothing provided to him for such purpose. 1. The employee must abide by all instructions of the employer aiming at his protection from dangers and must not act in a way that may obstruct the application of said instruction.</td> </tr> <tr> <td style="background-color: #e1f5fe;">Article 92</td> <td>Instructions concerning methods to prevent fire and protect employees from dangers while they perform their duties must be displayed by every employer at a conspicuous point in the place of business Instructions shall be in Arabic and, if necessary, in another language understood by the employees.</td> </tr> <tr> <td style="background-color: #e1f5fe;">Article 93</td> <td>One medical aid box(s), supplied with medicines, bandages disinfectants and other relief aids should be fixed in a conspicuous place within the reach of employees. Medical aid boxes should be used by a specialist in handling First Aid. Every one hundred employees should be provided with a First Aid box. Each First Aid box shall be sufficient for every 100 employees.</td> </tr> <tr> <td style="background-color: #e1f5fe;">Article 94</td> <td>The employer must provide proper cleanliness and ventilation in each place of business, without prejudice to the provisions of by-laws and regulations issued by concerned government authorities. Adequate illumination, potable water and toilets must be provided in each place of business.</td> </tr> </tbody> </table>	Reference	Requirement	Article 91	Every employer must provide adequate means of protection for the employee from the hazards of injuries and vocational diseases that may occur during work as well as the hazards of fire and other hazards arising from use of machines and other tools. All means of protection applied must be approved by the Ministry of Labour and Social Affairs. The employee must use protective equipment and clothing provided to him for such purpose. 1. The employee must abide by all instructions of the employer aiming at his protection from dangers and must not act in a way that may obstruct the application of said instruction.	Article 92	Instructions concerning methods to prevent fire and protect employees from dangers while they perform their duties must be displayed by every employer at a conspicuous point in the place of business Instructions shall be in Arabic and, if necessary, in another language understood by the employees.	Article 93	One medical aid box(s) , supplied with medicines, bandages disinfectants and other relief aids should be fixed in a conspicuous place within the reach of employees. Medical aid boxes should be used by a specialist in handling First Aid. Every one hundred employees should be provided with a First Aid box. Each First Aid box shall be sufficient for every 100 employees.	Article 94	The employer must provide proper cleanliness and ventilation in each place of business, without prejudice to the provisions of by-laws and regulations issued by concerned government authorities. Adequate illumination, potable water and toilets must be provided in each place of business.
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	Article 95	<p>One physicians(s) to do full medical check-ups at least once every six (6) months must be appointed by the employer for employees who are exposed to the danger of infection with any of the occupational diseases reserved in the schedule attached hereto.</p> <p>Results are to be recorded in registers and in the personal files of such employees and the cases of occupational diseases must be reported instantly by the doctors to the employers and the Labour Department after these become certain through medical and laboratory analysis.</p> <p>The physician in charge of regular medical check-ups may ask for second medical check-ups for any employee who is exposed to occupational diseases before the lapse of the time limit stated in the paragraph. Under this article if the case of the employee so requires.</p>
	Article 96	<p>Medical care must be provided by the employer to the employees according to the standards decided by the Minister of Labour and Social Affairs in collaboration with the Minister of Health.</p> <p>The Minister of Labour and Social Affairs has the capacity in consultation with the Ministry of Health, to determine the general measures for health prevention applicable to all establishments having staff and in particular such measures relating to safety, illumination, ventilation and dining rooms, as well as supply of potable and cleaning water and measures relating to purification of atmosphere form dust and smoke and to stipulate precautionary measures against fire and electric current.</p>
	Article 98	<p>Employees need to be kept informed by the employer of the dangers at the time of appointment related to their profession and preventive measures they have to take.</p> <p>Detailed written instructions in this respect need to be displayed at places of business by the employer.</p>
	Article 99	<p>Employers, Agents of the employers or any other persons having authority on employees may not permit entry of any kind of alcoholic drinks into the places of business for consumption threat, and they may not permit entrance into or stay at the establishment or any intoxicated person.</p>

	<p>Article 100</p>	<p>The employee shall abide by instructions and orders related to business safety and precautions, and adopt precautionary methods and pledge to care for items thereof in his possession.</p> <p>It is prohibited for an employee to act in any way that may contravene enforcement of said instructions or misuse methods placed for Health and Safety protection of employees or which may cause loss or damage to the same.</p>
	<p>Article 101</p>	<p>Employees working in areas that are remote from cities where there is no access to normal means of transportation shall be provided with the following by the employer:</p> <ul style="list-style-type: none"> - adequate means of transport; - adequate accommodation; - drinking water; - proper food stuff; - medical aid equipment; and - entertainment and sports amenities. <p>Areas to which all or part of the provisions of this Article applies shall be stated by decision of the Minister of Labour and Social Affairs.</p> <p>With exception of foodstuff, all services referred to in this Article shall be at the expense of the employer and nothing hereof is to be borne by the employee.</p>

Federal Law No 15 2009		
Description	Legislation regarding Tobacco Control	
Key Objectives	Legislation covering all workplaces and employees, UAE national and Expatriates	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (5)	Tobacco or tobacco products should not be sold to persons under the age of 18. The seller can ask for prove of age.
	Article (6)	Tobacco should be sold only by premises that are licenced by the competent authority
	Article (7)	Smoking shall be prohibited in the closed public places
	Article (8)	Smoking shall be prohibited in the public places prescribed in the executive regulation of this Law in coordination with the Competent Authority.

Federal Law No 29 2006		
Description	Legislation Concerning the Rights of People with Special Needs	
Key Objectives	Legislation to protect the rights of people with special needs	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (2)	A person's special needs shall not be a reason to deprive him/her of their rights and services especially in welfare as well as social, economic, health, educational, professional, cultural and leisure services.
	Article (23)	The concerned authorities shall coordinate with each other to specify the engineering standards and specifications for facilities and public utilities in order to ensure their appropriateness for the use, requirements and safety of people with special needs. For this purpose, a resolution shall be made by the cabinet based on the proposal of the Minister of Social Affairs. The resolution shall set the regulations necessary to implement these standards, specifications and their exceptions.

UAE Ministry of Labour Occupational Health and Safety		
Description	Ministerial Resolutions and Orders Under Federal Law	
Key Objectives	Applies more detail to the Labour Law	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Ministerial Resolution No. (4/1) for 1981	<p>Workers may not be made to work for more than seven hours a day in the following works and industries:</p> <ul style="list-style-type: none"> • working in front of ovens at bakeries; • oil refining; • manufacturing cement; • manufacturing ice; • working at cooling stores and warehouses; • manufacturing fertilizers, mineral acids coefficients, chemical crops; • working in filling cylinders with pressurised gases; • processes for melting fat and making wax; • work at mines and quarries; • manufacturing dyes and varnish; • foundry; • making glue; • making glass; • sugar manufacturing and refining; • making and packaging bleach and chalk; and • oil squeezing industry using mechanical methods.

	<p>Ministerial Resolution No. (5/1) for 1981 on defining works that are hazardous, arduous or harmful to the health and where minors are prohibited to work</p>	<p>Employing minors under the age of seventeen in the industries detailed within this resolution, is strictly prohibited.</p>
	<p>Ministerial Resolution No. (6/1) for 1981 on defining work that is hazardous, tiresome, or harmful to health or morals, and where women should not be employed therein</p>	<p>Employing women in the hazardous occupations listed in this resolution is not allowed.</p>
	<p>Ministerial Resolution No. (37/2) for 1982 Regarding the level of medical attention the employer is obliged to provide to his workers</p>	<p>The commitment of the employer to treating the workers must be according to the levels of medical attention shown in the articles of this resolution and within the limitation of the methods available for treatment in the country.</p> <p>The employer in whose facility the number of workers doesn't exceed fifty workers at one place, one country, or a radius of twenty kilometres must provide First Aid means at the workplaces in his facility</p> <p>The employer whose number of workers exceeds fifty workers but less than two hundred workers in one place, one country, or a radius of twenty kilometres, in addition to his commitment to provide First Aid means, shall use a nurse holding a nursing certificate recognised by the Ministry of Health.</p> <p>The nurse shall administer the said aid, and shall assign a physician to the workers clinic and their treatment at the place prepared by the employer for that purpose, providing them with the necessary medications for treatment for free.</p> <p>If the treatment requires a specialist physician, the facility doctor shall advise in writing to treat the worker at a specialist physician. Cost of treatment in this case should be shared equally between the employer and worker.</p>
	<p>Ministerial Order 49/1 1980</p>	<p>Determines activities which require non-stop work and continuous regulating methods for granting workers periods for resting, eating and praying</p>

Ministerial Order 32/1982 The determination of retentive methods and measures for the protection of workers from risks at work.

How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article 1	<p>Appropriate preventive measures shall be provided by every employer for the protection of workers from risks of injuries or occupational diseases which may occur during working hours and against fire risks and other risks that may result from the use of machineries and other equipment.</p> <p>The employer shall also adopt other preventive measures specified by the Ministry of Labour and Social Affairs.</p> <p>The worker shall use the protective equipment and clothes supplied for this purpose and shall comply with all the instructions of the employer aiming to protect him from risks. The worker shall refrain from doing any work which impedes the implementation of such instructions.</p>
	Article 2	<p>Detailed and clear instructions on measures for the prevention of fire and the protection of workers from the dangers which they may be exposed to during the performance of their work and ways and means of dealing with occurring Accident shall display at prominent and conspicuous places by every employer.</p> <p>Displayed instructions shall be written in Arabic and in other language understood by workers if necessary.</p> <p>The employer shall place warning signs in front of dangerous sites.</p>
	Article 3	<p>Employees shall be briefed before they assume work on the occupational risks such as fire and machinery risks, dangers of falling and relevant occupational diseases and other risks by every employer or his representative.</p>
	Article 4	<p>The task of supervising First Aid treatment shall be assigned to a specialist in First Aid treatment and every employer shall provide for the First Aid box.</p>
	Article 5	<p>Necessary measures to ensure that the conditions prevailing in the place of work provide sufficient protection for the Health and Safety of the worker working in the establishment shall be provided by every employer giving special attention to the following:</p> <ul style="list-style-type: none"> • the space assigned to each person shall not be less than 400 cubic feet. This measurement, however, shall exclude any height of over 14 feet; • avoid any insufficiency in the necessary amount of clean air or delays in renewing this air, and keep out all harmful air drafts or sudden changes in temperature and, as far as possible,

		<p>eliminate excessive humidity, excessive high or low temperatures and bad-smelling air currents;</p> <ul style="list-style-type: none"> • provide sufficient and appropriate lighting, natural or artificial, by ensuring that windows and other accesses to natural lights are open and that the sources of natural or artificial lighting avoid direct forceful illumination and appreciable difference in the distribution of lights in close quarters; • provide appropriate lighting for operations varying in the degree of their accuracy, using the guiding measures provided; • prevent or reduce the Noise and tremors which may endanger the health of workers in compliance with the permissible scientific standards; • provide a place for meals in cases where it is prohibited for workers to have their meals at the workplace. Food shall not be served in the place of work under any of the following conditions: When the work involves the use or handling of poisonous or harmful substances which may spread in the workplace in the form of dust, smoke or vapour; and
		<ul style="list-style-type: none"> • provide adequate number of washing basins for the workers to wash their hands and apply the appropriate cleaning materials for that purpose. Also supplying sufficient and adequate toilets for workers and suitable places for dressing and keeping clothes and ensuring that the clothes are regularly clean and kept in good condition. And in all cases separate facilities of such kind shall be assigned to each sex of workers.
	<p>Article 7</p>	<p>Every employer shall also give particular attention to the following conditions at the workplace:</p> <ul style="list-style-type: none"> • the floor of the work room shall have an even surface made of material suitable for the work in progress; • the passages shall be free of holes of unfixed manhole covers, Projecting nails, pipes or other installations which may cause a risk of collision, and the floors of the passages shall not be made of substances that may cause slipping; • passages shall not be damped with materials, work equipment, products or objects that may impede the movement of the workers and subject them to the risks of collisions or falling; • staircases, elevated passages and similar places must be made of floors which do not cause slipping; • staircases shall be surrounded by side-railings made of bars set at narrow distances to prevent object passing through the openings, or to have such opening covered by hinged metallic covers to prevent the fall of objects on persons below, which may endanger their safety; and • the steps of the staircases shall be of sufficient strength and wide enough to allow safe passage and shall be surrounded by side-railings from both sides when one of its sides is not a wall.

	<p>Article 8</p>	<p>Necessary facilities for the prevention of fire and fire-extinguishers appropriate for the type of materials used in the establishment shall be provided by the including observing the following:</p> <ul style="list-style-type: none"> • provide entry, exit and ladders in the workplace in order to facilitate the speedy exit of workers when fire breaks out in the establishment or in any part of it without stampeding; • the fire-extinguishing equipment must be always kept in a condition suitable for the purpose they are designated for and must be placed in locations of easy access, and a sufficient number of workers must be trained to use them; and • there must be a fire alarming (warning) system and the workers must be trained to respond to fire warnings. <p>Where there are several work-rooms or chambers at the workplace connected to one another they must be separated by doors which prevent the spread of fire from one room to the other.</p> <p>Signs containing instructions for the prevention of fire shall be displayed at the inflammable places of work. Such signs shall be Projected in conspicuous positions indicating the places of exits and written in Arabic and in other language understood by the workers, if necessary</p>
	<p>Article 9</p>	<p>The employer shall undertake necessary precautionary measures to protect workers from the dangers of falling, falling objects, flying metals or sharp bodies or caustic liquid materials, or hot or inflammable or explosive materials or other harmful materials.</p> <p>The employer shall also take appropriate precautions for protection of workers from dangers of compressed gases and electricity and means of providing persons protection equipment designated for such purpose or by providing personal protection facilities such as protective glasses, gloves, belts, uniforms, mask or other protective clothes suitable for the kind of work.</p>
	<p>Article 10</p>	<p>The employer shall always provide constant protective barriers to be installed around the exposed mobile parts of generators or motors and around dangerous machinery, mobile or immobile, except when such parts are designed in a manner providing the required safety standard.</p>
	<p>Article 11</p>	<p>The employer when installing barriers referred to in the preceding article, shall observe the following:</p> <ul style="list-style-type: none"> • provide full protection against the dangers for which they installed; • prevent the contact of worker or part of his body with the dangerous area throughout the period of work and at the same time do not impede his performance; • they do not impede production or the work of the machine; and • they do not impede the adjustment or repair of the machine or its inspection with the least service.

		They must be fire-resistant and rust-proof. They may not be a possible cause for Accident which may result from the barrier, protruding parts or because of its sharp edges or rough extensions.
	Article 14	The employer shall display instruction signboards at the locations of machinery or operations stating the necessary technical measures and such instructions shall be written in Arabic or other language understood by the workers, if necessary.
	Article 15	<p>Each worker shall comply with the orders and instructions related to the precautions taken for his safety and security of work. The workers shall use safety equipment and shall care for such equipment in his possession. The worker shall be prohibited from doing any act which prevents the implementation of the said instructions or misuse the equipment designed for protecting the Health and Safety of the workers or damages such equipment.</p> <p>The employer may impose disciplinary punishments for any worker who violates the regulations stated in the preceding paragraph.</p>
	Article 18	The employer shall take precautionary measures to protect the workers from dangerous materials by keeping them stored safely in special places or by placing such materials inside suitable barriers or fences. When such materials are kept in containers, such containers must be closed tightly bearing labels displaying the name of the contents and the correct method of using them, and the appropriate warnings against their dangers which must be written in Arabic and in other language understood by the workers if necessary.
	Article 24	<p>The employer shall notify the competent labour department on Accidents which that may occur during working hours in his establishment and which may cause the following:</p> <ul style="list-style-type: none"> • the death of a worker; • fires or explosions; and • rendering any of the workers unfit to perform his work for three (3) or more days. <p>The employer shall give notice of such Accident provided that notification shall be as follows:</p> <ul style="list-style-type: none"> • in case of the death of a worker, fire or explosion, notice must be given immediately after the occurrence of the Accident through the fastest means of communication available. <p>When a worker becomes unable to do his work for three (3) or more days, notice must be given within twenty-four (24) hours following the occurrence of the Accident.</p>
	Article 19	Construction only

		Precautionary measures to be taken to protect workers who are engaged in Construction, demolition, or digging
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UAE Fire and Life Safety Code 2017 Edition	
Description	UAE Fire and Life Safety Code
Key Objectives	Details minimum requirements for Life Safety and Fire Safety Design and Installation.
How it applies to DMCC Free Zone and Master Community	<p>The purpose of this code is to prescribe minimum guidelines for determining Design, Construction, Modification & Installation of Buildings, Structures, Occupancies, Fire detection systems, Fire protection systems, Fire Prevention Systems and Life Safety concerns to achieve safe societies. The property Owners, Designers, Consultants, Décor companies, contracting companies, Suppliers, Installation companies and Maintenance companies are obliged to follow the minimum requirements of these codes and regulations.</p> <p>Ensure Civil Defence approval to ensure compliance with the code.</p>

Local Order No. (3) of 1999		
Description	Regulation of Construction Works in the Emirate of Dubai	
Key Objectives	Specifies responsibilities and working conditions for Health and Safety on Construction sites.	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (4)	A public or private natural or corporate person shall not carry out any complete or partial, Permanent or Temporary Construction Works, or any change to the features of any Plot or property without issuance of the necessary Permit for the same by the Concerned Department.
	Article (19)	The Contractor and the Engineer shall be jointly liable for the implementation and safety of the Construction Works during and after the implementation period, in accordance with the provisions of the applicable laws and the provisions of this Order and its Implementing Regulations. The liability of the Contractor and the Engineer shall extend to the Buildings adjacent to the site in which such works are implemented and to any public facility for any damages which may be sustained by them as a result thereof.

Dubai Municipality Building Code	
Description	Code of Construction Safety Practice
Key Objectives	Specifies responsibilities and working conditions for Health and Safety on Construction sites.
How it applies to DMCC Free Zone and Master Community	The purpose of the code is to set of rules which regulate Construction Projects carried out in the Emirate of Dubai. All rules and appended technical guidelines stipulated shall be applied to all building operations and engineering Construction Projects undertaken by way of trade or for the purpose of residential, commercial or industrial by or on behalf of the private or the public sector which includes the government or any other public authority. The current Construction Safety Code is set out to regulate the working conditions in Construction Projects for all employees who work with contractors or sub-contractors' companies.

Local order (11) of 2003 Concerning Public Health and Safety of the Society in the Emirate of Dubai		
Description	Overarching order for Dubai	
Key Objectives	Linked to environmental protection, but also contains provisions on the Health and Safety of employees, including the reporting of incidents and Accidents, and the obligation of employers to report.	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Articles (3)(4)	No person may cause any Health Hazard in the Emirate. See list of health hazards in Article (4)
	Articles (5) to (19)	Specify the health and technical specifications, restrictions, rules, standards and conditions required for the Health and Safety of foodstuff.
	Articles (20) to (25)	Specify conditions, inspection and control for Drinking water.
	Article (23)	The Occupant shall be responsible for the cleanliness and safety of the drinking water tankers in the Building and shall be responsible also for verifying the efficiency of all the water distribution points in the same.
	Article (24)	If the Concerned Department finds that drinking water is polluted or is not good for human consumption, it must, in this case, issue the necessary resolutions for prohibiting use of such water and must take all measures necessary for preventing the occurrence of any harm to the Public Health, including to obligate the Occupant to take the necessary procedures for securing provision of good drinking water.
	Articles (26)	Concerning health establishment and establishment related to Public Health (Schedule 2 applicable to DMCC)
	Article (27)	No Establishment Relating to Public Health may carry on its activity in the Emirate except after obtaining a permit in this regard from the Concerned Department.
	Article (28)	All workers of Establishments Relating to Public Health shall be subject to health control in accordance with the conditions and requirements determined by the Concerned Department, including the requirement of their obtaining professional health cards showing their clearance from infectious disease.
	Article (32)	Dubai Municipality should notify immediately upon finding or suspecting the occurrence of infectious diseases specified in Schedule (3).

	Article (38)	The Owner and the Contractor shall be, for the term of Construction works, responsible for fighting Public Health Pests and preventing the opportunities of their increasing in the Building, water tankers or Sewerage connections, and shall ensure clearance of the Building and its attachments from such Pests on the completion of the Construction works.
	Article (45)	All Public Health and Safety requirements shall be fulfilled at Entertainment Sites and other places visited by the public. The Occupants of such places and sites shall comply with the said requirements in a manner that secures the operation thereof in a safe manner that does not expose the life or safety of its visitors or the neighbouring persons thereof to any hazards.
	Article (47)	A Swimming Pool may be established in the Emirate only upon obtaining approval of the drawings and design of the Pool from the Concerned Department.
	Article (48)	The Occupant shall be responsible for provision of health conditions and safety requirements at Public Swimming Pools, including provision of the equipment necessary for the safety of users of such Pools and appointment of a qualified rescue guard who shall attend at the Pool on a permanent basis, in addition to carrying out regular maintenance for the same.
	Article (51)	<p>For the purposes of protection of the Public Health in the Emirate, the Concerned Department may establish the restrictions and conditions necessary for restricting Smoking at the following public places:</p> <ul style="list-style-type: none"> • individual and group transportation media; • shopping malls and Entertainment Sites; and • restaurants and coffee shops.
	Article (52)	Tobacco, in all its types, may not be sold in the Emirate for a person who appears to be less than twenty-one.

	Article (53)	The term "Health and Safety of Buildings" shall mean fulfilment by the Building of the health and environmental conditions and safety requirements for proper use that secures protection of the Health and Safety of its residents and maintains its interior and surrounding environments, which includes building materials, drinking water, Sewerage, air-conditioning systems, elevators, emergency exists, firefighting systems, interior air quality and common service facilities.
	Article (56)	<p>The Occupant shall maintain healthy interior air in the Building through:</p> <ul style="list-style-type: none"> • providing proper exhaust means for gas and fumes contaminating the air and the heat resulting from the various activities and facilities in the Building; and • ventilation of the interior air in accordance with the approved standards for interior air quality. <p>Not to exceed the acceptable rates of the interior air quality and to seek monitoring such rates</p>
	Article (58)	The Occupant shall undertake regular maintenance for the Building in a manner that ensures that the Building continues to be fulfilling the conditions and requirements of Public Health and Safety.
	Article (59)	Wastes may not be thrown, left, placed, spilled, shot or discharged at Public Places, or disposed of at any place other than the places prepared for the purpose or in any manner other than in accordance with the terms and conditions approved by the Concerned Department.
	Article (60)	Goods, materials or any other things may not be left, stored, placed or hanged at public places, on house roofs or in balconies in a manner that can be an obstacle for traffic or pedestrians, or can deform the general view of the Emirate, its beauty, front sides and balconies of Buildings, or breach the requirements of Public Health and Safety or environment.
	Article (62)	<p>Private companies and establishments, commercial and residential compounds and hotel establishments shall:</p> <ul style="list-style-type: none"> • provide containers for storage of wastes produced by their activities in accordance with the terms, conditions and standards approved in this respect by the Concerned Department; and • change the wastes containers when the Concerned Department considers that the volume of wastes produced by carrying on the activities of such entities exceeds the capacity of the available containers, or that the resulting wastes become constituting a hazard to the Public Health and environment. <p>Affect a program for cleaning the exterior yards of the public parking spaces serving them.</p>
	Article (80)	Dogs may not enter public beaches and parks, and may not be wondered with without a neckband.

Law No 26. of 2007		
Description	Regulating relationships between Landlords and Tenants in the Emirate of Dubai	
Key Objectives	Regulating relationships between Landlords and Tenants in the Emirate of Dubai	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (16)	Landlord shall, during validity of contract, be liable for handling maintenance of property and shall rectify any defects or faults that affect tenant's targeted benefit from the premises, unless the two parties agree otherwise
	Article (17)	Landlord shall not make any change in the premises, its utilities or ancillaries affecting the intended benefit, and landlord shall be liable for such changes caused by him, or by any person authorised by him, and for any damages, faults or shortages caused to the premises for reasons not relating to the tenant.
	Article (18)	Landlord must provide tenant with all approvals required by competent authorities in the Emirate if he wishes to execute decoration works, or other works, what require such approvals, provided that such works shall not affect the Construction of the premises and provided that tenant has necessary documents evidencing applying for such approvals
	Article (24)	Unless otherwise agreed in the tenancy contract, the tenant shall not assign benefit or sublease premises without obtaining landlord's approval.

Department of Tourism and Commerce Marketing (DTCM)		
Description	Range of guidance and legislation on Events, Governance, Holiday Homes, Hotels, Tourism Establishments, tour guides and tour information.	
Key Objectives	The Department of Tourism and Commerce Marketing (DTCM) is the principal authority for the planning, supervision, development and marketing of tourism in Dubai.	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Decree No. 13 of 2011 Decree regarding the introduction of the e-programme for Hotel and Tourism Establishments in the Emirate of Dubai	The provisions of this decree shall be applied on all establishments in the Emirates including licensed establishments in the Free Zones and special development zones. The establishments may not engage any tourist activities unless they subscribe to the Programme and install all necessary equipment to operate such a programme
	Executive Resolution No. (1) Concerning the Electronic System for Event Permitting Marketing Distribution of Tickets within the Emirates of Dubai	No Event may take place in the Emirate unless necessary permits from all government entities concerned are obtained. Applications to obtain permits to conduct any type of Events in the Emirate shall be made through the Department's E-Permit system. To comply with all the terms and regulations pertinent to subscribing to the E-Permit system; in the manner prescribed by the Department. To provide appropriate systems and measures to secure safety of Event Attendees and other persons present at the venue for purposes related to a particular Event, in accordance with the requirements of concerned authorities within the Emirate and international standards. Event Organisers may apply for Event permits within a timeframe ranging between six (6) months and five (5) working days before the Event date, at the most. Event Organisers may submit urgent applications for Event permits, two (2) to four (4) business days before the date of the Event.
	Administrative Order No. 93 of 1998 Concerning the Rules of Inspection of Hotels, Guesthouses and Furnished Apartments	Provisions for sudden inspections and rules for entry to establishments.

Dubai Electricity and Water Authority (DEWA)		
Description	The Dubai Electricity and Water Authority provide public service infrastructure in the Emirate of Dubai.	
Key Objectives	Requirements for electrical and water installations to be considered for buildings	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Electrical and Water Installations Cir20 (2) Inclusions of Design Requirement for Green Building Specification (SMCS/46/2008)	Requirements should be considered at the initial stage of the building design by Consultants, Consumers and Developers. Efficient lighting fittings and lamps should be used. Control systems for lighting and air conditioning shall be used in buildings. Water services, including low flow faucets and taps, water flow reducers and dual flush systems shall be incorporated as part of the Green Building Design Requirement for Water services.
	Dubai Electricity and Water Authority (DEWA) Regulations for Electrical Installations 2017	The regulations apply to the requirements of design, erection, inspection and testing of all electrical installations within premises and any additions, alterations to the existing buildings and installations therein.

Dubai Municipality Technical Guidelines			
Description	Range of guidance covering a variety of Health and Safety subjects		
Key Objectives	Guidance to protect workers from hazards in the workplace.		
How it applies to DMCC Free Zone and Master Community	Technical Guidelines for Industrial Compressed Gas Cylinders	DM-PH&SD-P4-TG 01	Guidelines outlining procedures for marking, transporting, storage and use of compressed gas cylinders.
	Guidelines for Safety Audit Reports	DM-PH&SD-P4-TG 02	Safety audits will be required for all major industries to ensure compliance with provisions of Local Order No 61 of 1991. Each major industry should have an audit program involving regular audits concerning safety in plant, machinery, equipment and procedures.
	Guidelines for Heat Stress at Work	DM-PH&SD-P4-TG 03	Outlines procedures for controlling heat stress related to high temperature, thermal radiation, high humidity, low air movement and the need to wear PPE that could elevate the body temperature resulting in heat crams, heat exhaustion and stroke.
	Guidelines for Entry into Confined Spaces	DM-PH&SD-P4-TG 04	Outlines procedures for access and egress of confined spaces, gas testing & ventilation and permit to work requirements.
	Guidelines for Electrical Safety at Work	DM-PH&SD-P4-TG 05	Sets out procedures for adequate electrical safety during design, and training and maintenance requirement for electrical equipment.
	Guidelines for Guarding of Dangerous Machinery	DM-PH&SD-P4-TG 06	Provide guidance on safe guarding workers who operated and maintain machinery, management of selecting, purchasing, installing and making use of machinery and equipment.
	Guidelines for Personal Protective Equipment Head Protection	DM-PH&SD-P4-TG 08	Provide guidance on proper selection, use and maintenance of head protection used to protect workers.

	Guidelines for Personal Protective Equipment Eye and Face Protection	DM-PH&SD-P4-TG 09	Provide guidance on proper selection, use and maintenance of Eye and Face Protection used to protect workers.
	Guidelines for Personal Protective Equipment Protective Clothing	DM-PH&SD-P4-TG 11	Provide guidance on proper selection, use and maintenance of Protective Clothing used to protect workers. Every employer shall provide the right type of body protection for the job.
	Guidelines for Personal Protective Equipment Hand Protection	DM-PH&SD-P4-TG 12	Provide guidance on selecting hand protection for chemical, physical and biological hazards.
	Guidelines for Personal Protective Equipment Foot Protection	DM-PH&SD-P4-TG 13	Guidance on the provision of suitable safety footwear the employer should provide to the employee while working in the workplace to protect against foot injuries.
	Guidelines for Personal Protective Equipment Fall Protection Safety Lines	DM-PH&SD-P4-TG 14	Provide guidelines on fall protection required to protect workers from potentially falling from heights, fall into vats, silos, tanks, etc.
	Guidelines for Personal Protective Equipment Respiratory Protection	DM-PH&SD-P4-TG 15	Outlines procedures for employers to provide protective equipment to protect workers against occupational diseases caused by breathing air contaminated with harmful dusts, fumes, mists, gases, smoke, vapour or oxygen deficient atmospheres.
	Guidelines for Safe use of Industrial Organic Solvents	DM-PH&SD-P4-TG 16	Guidance on safe working practices employers need to implement relating to solvent exposures that may occur in processing, manufacturing, or during formulation or use of products and substances.
	Guidelines for First Aid Requirement	DM-PH&SD-P4-TG17	Every employer needs to ensure the protection employees engaged in the workplace by introducing sufficient and appropriate First Aid provisions. Details of the requirements are outlines in these guidelines.

	Guidelines for Health & Safety in Kitchens & Food Preparation Areas	DM-PH&SD-P4-TG 19	Guidelines for kitchens attached to hotels, restaurants or factories on hazards like preparing, cooking and serving food and precautions to be taken against major hazards associated with kitchen activities.
	Guidelines for Examination and Certification of Boilers and Pressure Vessels	DM-PH&SD-P4-TG 20	The guidelines describe the requirement for periodic inspection of pressure vessels by a Competent Person, and requirements for internal and external inspections
	Guidelines for Examination and Certification of Cranes, Hoists, Lifts and other Lifting Appliances	DM-PH&SD-P4-TG 21	Provide guidance on potential dangers of using cranes, lifts, hoists, and other lifting appliances to reduce Accident due to equipment failure.
	Guidelines for Safety in Handling Asbestos	DM-PH&SD-P4-TG 24	Provide guidance on how to prevent risk of exposure to asbestos dust at work to prevent harm to community health and to provide guidelines on asbestos disposal.
	Safety and Health Requirements for Laundry Operations	DM-PH&SD-P4-TG 26	Provide guidance on laundries whether standalone facilities or part of larger establishments like hotels, to consider safety and waste disposal requirements.
	Guidelines for Liquefied Petroleum Gas Cylinders	DM-PH&SD-P4-TG27	Guidance on safeguarding the general public or people at work against potential risk of fire or explosion from gas escaping from cylinders and how to regulate filling, storing and transporting LPG cylinders.
	Technical Guideline for Accident Investigation Reporting	DM-PH&SD-A-TG	Outlines procedures for incident investigation and reporting.
	Guidelines for emergency Preparedness	DM-PH&SD-P7-TG 6	Outlines procedures for emergency preparedness
	Guidelines for the control of Legionella in water systems	Rev 2 6/2010	Outlines procedures for the control of legionella in public establishments
	Guidelines for Swimming Pool Safety	DM-PH&SD-P7-TG 01	Guideline on safety aspects to be considered during Construction, maintenance and operation for the safe use of swimming pools

	Requirements for Control of Entertainment Noise	DM-PH&SD-P7-TG 04	Guidelines to control Noise from entertainment establishments so that it does not interfere with the peace and comfort of any person.
	Health Requirements for Massage Centres and Spa	DM-PH&SD-P7-WI01	Guidance on Health Requirements for Massage Centres and Spa
	Health Requirements for Hotels & Furnished Apartments	DM-PH&SD-P7-WI03	Guidance on Health Requirements for Hotels & Furnished Apartments
	Health Requirements for Gents Salons & personal care centres	DM-PH&SD-P7-WI04	Provide guidance on health requirements for gent's salons
	Health Requirements for Ladies Salons & personal care centres	DM-PH&SD-P7-WI05	Provide guidance on health requirements for ladies' salons
	Health Requirements for Construction Sites	DM-PH&SD-P7-WI12	Provide guidance on licences, housing on Construction sites, drinking water, pest control, waste disposal and First Aid requirements for Construction sites.
	Health Requirements for Shopping Malls & Centres	DM-PH&SD-P7-WI14	Provide guidance on licences, ventilation and lighting, First Aid, restaurants and food course, leisure centres, drinking water, toilets, waste disposal, smoking regulations and pest control.
	Guidelines for Rope Access Work	DM-PHSD-P7-A-TG	Provide guidance on planning, training, operation, maintenance or work equipment used for rope access work.
	Health Requirements for Health clubs	DM-PHSD-P7-WI06-	Provide guidance on public health requirements for health clubs.
	Requirements for the reduction of Construction and demolition Noise	Number (9) /04/2011	This guideline sets out the information required for the control and reduction of Noise from any type of Construction and demolition activities as mentioned in this document.

APPENDIX II - ENVIRONMENTAL LEGAL REQUIREMENTS

Federal Law No. (24) of 1999		
Description	Central piece of environmental legislation and contains general duties of employers to ensure the Health and Safety of all persons in their employment	
Key Objectives	Environmental legislation covering all workplaces and employees, UAE national and Expatriates	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (4)	No Project or establishment shall start the activity before obtaining the licence to operate including the environmental impact assessment.
	Article (7)	Regular analysis of wastes shall be undertaken and properties of discharge and pollutants generated monitored. Monitoring records shall be retained and send to applicable authorities.
	Article (35)	All establishments including public premises and commercial, industrial, agricultural, tourism and service establishments are prohibited from discarding untreated substance, wastes or liquids which may directly or indirectly cause pollution to the water environment.
	Article (43)	It is prohibited to undertake any activity contributing directly or indirectly damaging, disturbing the natural properties or polluting soil in any way that may affects its productivity.
	Article (48)	Establishments in practicing their activities shall ensure that air pollutants must not exceed the acceptable limits specified in the Executive Order.
	Article (52)	All parties and individuals shall at the time of Construction, demolitions or transportation of wastes or ducts produced as a result shall undertake the necessary precautions required for storage or safe transportation to prevent dispersion of such wastes and dusts.

	Article (53)	Emissions of smoke vapours and fumes resulting from industrial activities shall be within the permissible limits and precautions should be taken to reduction the amount of pollutants. A registry of the pollution Emissions shall be kept.
	Article (54)	Noise Permissible limits should not be exceeded when operating machines, equipment and warning devices.
	Article (55)	Adequate ventilation should be provided and precautions implemented to prevent leakage or emission of air pollutants. Workers should be protected from such Emissions.
	Article (57)	Smoking should be prohibited in closed public places except within the limits allowed in the licence. Smoking in not allowed in elevators.
	Article (58)	A licence is required to handle hazardous substance, hazardous waste or medical waste.
	Article (61)	Where hazardous waste is produced, a register shall be kept, and should include methods of disposal and parties contracted to receive the waste.

Local order 61 1991 on the Environment Protection Regulations		
Description	Overarching order for Dubai	
Key Objectives	Linked to environmental protection, but also contains provisions on the Health and Safety of employees, including the reporting of incidents and Accidents, and the obligation of employers to report.	
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (6)	The discharge of Waste Water to land is prohibited without a permit from the Health Department
	Article (7)	Waste Water should be treated to comply with effluent standards. Physical, chemical and bacteriological parameters should not exceed maximum limits.
	Article (8)	Waste Water shall not be discharged into the sewer without a permit from the Municipality and should be in line standards specified by DM (Article 9)
	Article (10)	Waste Water should be tested periodically and results retained in a register
	Article (29)	Best practicable means to be used to prevent Air Pollution and controlling noxious or harmful Emissions
	Article (30)	Dark smoke shall not be emitted from the chimney of any industrial or trade premises
	Article (31)	Discharge of waste to the atmosphere should not exceed at any time prescribed executive regulations
	Article (32)	Measurement of gas emitted should be performed, providing maintenance to measuring apparatus, keeping records to be submitted to E.P.S.S.
	Article (34)	Prior approval is required from DM for height and design of chimneys.
	Article (75)	Best practicable means should be adopted to not exceed reasonable levels of Noise i.e. 55 dBA from 7.am to 8 pm and 45 dBA between 8pm and 7 am.
	Article (88)	Inspectors of the Health Department shall have the authority to enter premises covered by the environment protection regulations, request any paper document or samples deemed related to the regulations, examine any records and register any violations.

Administrative Order no. (211) of 1991 on Issuance of the Executive Regulations of the Local Order no. (61) of 1991 on the Environmental Protection Systems in the Emirate of Dubai.

How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Article (4)	Waste Water shall be treated to comply with effluent standards in Annex 2
	Article (12)	Best practicable means should be used to prevent Air Pollution from emission of noxious or harmful substances
	Article (18)	List of substances considered as Noxious or harmful substances.
	Article (19)	Emissions of substances listed in Article (18) should not exceed these limits.
	Article (42)	Levels of Noise should not be exceeded
	Article (43)	Limits defined that workers can be exposed to in the workplace

Dubai Municipality Circulars		
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Circular No (4) of 2014 Concerning the Emission Inventors Data	Industrial premises producing air pollutants or Emissions should assign a DM accredited laboratory to perform Annual Stack Emissions Tests. Include Emissions Inventory Forms.
	Circular No (5) of 2014 Regarding Management and controlling handling disposal of hazardous waste	All establishments generating hazardous waste (Annex 1) should comply with environmental requirements (Annex 2)
	Circular (5) of 2015 Waste Management related activities in Dubai	Companies planning to be engaged in activities related to waste management should secure prior permit from DM

Dubai Municipality Regulations and Technical Guidelines		
How it applies to DMCC Free Zone and Master Community	Reference	Requirement
	Indoor air quality requirement within green building Regulations & Specifications	Provide specification for Ventilation and Air Quality, Thermal Comfort, Acoustic comfort, Hazardous Waste, Day lighting and Visual comfort and Water Quality in new and existing buildings.
	Technical Guideline No 1 - Waste Collection and Transportation services	Minimum requirements for the temporary storage at source, collection and transportation of Municipal Solid Waste for proper treatment and or disposal.
	Technical Guideline No 2 – Disposal of Trade Wastewater	This Guideline assists to identify the permit requirements and the procedures to apply for a permit by the waste generator Permit required to discharge Trade or industrial waste.

	<p>Technical Guideline Number (3) EIA Requirements for Non-Major Projects (Category B Projects)</p>	<p>Requires the preparation and submission to Environment Department of an EIA Summary or EIA Checklist, depending upon the type/activity, for Non-Major Projects (Category B Projects) being applied for an Environmental Clearance from the Environment Department. Annex 1 outlines the contents to be include in EIA</p>
	<p>Technical Guideline No 5. Waste Classification</p>	<p>Provide Waste classification information to exclude hazardous waste.</p>
	<p>Technical Guideline No (6) Disposal of Hazardous Waste</p>	<p>Permit to dispose of hazardous waste should be though WDS system Hazardous waste generators must register with DM e-government office Waste analysis reports should comply with minimum required perimeters from Table 1</p>
	<p>Technical Guideline No 7. Mandatory Waste Segregation</p>	<p>Provide guidance on waste segregation at the source applicable to all establishments</p>
	<p>Technical Guideline No 7. Mandatory Waste Segregation (Addendum)</p>	<p>New bin colour coding</p>
	<p>Technical Guideline No 01 Environmental Impact Assessment</p>	<p>Provides compliance requirements and procedures to obtain an "Environmental Clearance" for any Project in Dubai through the Environmental Impact Assessment (EIA) process.</p>

DMCC

