



# APPLIANCE ADVISOR™

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## UL Adds HVAC/R Capabilities: ANSI/ASHRAE Standard 72-2005

*By Brian Ferriol / Global HVAC/R Business Development Manager*

UL is pleased to announce additional testing capabilities now available at its 33,000 square foot laboratory in Plano, TX, USA. In addition to our portfolio of solutions offerings, UL can now support your testing needs for:

- ANSI/ASHRAE STANDARD 72-2005 – Method of Testing Commercial Refrigerators and Freezers

- ENERGY STAR® Supplement to ANSI/ASHRAE Standard 72-2005 – For Laboratory Grade Refrigerators and Freezers

UL has designated two chambers exclusive to ASHRAE 72 testing. Testing can be conducted on packaged or remote units. Please refer to the chamber specifications table below for further detail. Testing may also take place at a manufacturer's test lab participating under

the Witness Test Data Program (WTDP) under UL's Data Acceptance Program. Our knowledgeable team of HVAC/R engineering professionals has a wealth of experience in assisting manufacturers with compliance to performance and safety requirements. For additional information on UL's Energy Efficiency Testing capabilities and global compliance solutions please visit our website at [www.ul.com/hvacr](http://www.ul.com/hvacr).

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## A Letter From Doug



*Greetings from UL Appliances, we hope that your 2014 has taken off to a great start.*

*In 2013 we presented a broader portfolio of services, expanded our global footprint and simplified - in cases customizing - our processes.*

*In addition to product safety, UL's energy efficiency testing, product performance testing, testing for reliability, engineering advisory services, knowledge services and more offer a range of solutions under one test house to meet your business needs.*

*As we expand our services, we're also improving your experience with UL. Several new programs are dramatically reducing time to market and making it simpler to get quick answers to your questions, with the agility to support your business in customized ways.*

*As a global certifications leader UL can help you navigate complex country compliance issues and regulatory and trade challenges in order to gain access to new markets.*

*Our standards writing group participates in global groups and industry associations, contributing to the adoption of new technology, while continuing to assure on-going safety of existing technologies.*

*Look to [www.ul.com/appliances](http://www.ul.com/appliances) to experience today's UL.*

*Regards,*

*Doug Lockard / Global Director, Appliances  
UL (Underwriters Laboratories)*



## The Product Mindset 2013

### Broader in scope and more nuanced in its findings

The Product Mindset is an annual study created to better understand manufacturers and consumers concerns and priorities about the products they make, sell, buy and use. Now in its third year, the study is broader in scope and more nuanced in its findings. A fifth country, Brazil, has been added, allowing us to define the collective mindset based on data from five of the world's top 10 largest economies. We have also expanded our research to further explore emerging issues related to the supply chain and human health. We hope that you find the study informative and thought provoking. Enhanced this year, we have made the results of The Product Mindset more interactive. An online data visualizer will enable you to discover and compare the information in meaningful ways. Explore the study at a glance and order a printed version today at [www.ul.com/productmindset](http://www.ul.com/productmindset).

## ANSI/ASHRAE Standard 72-2005 (continued from cover)

### About Standard 72\*

Standard 72 was developed to provide a uniform method of test for comparative evaluations, and not for comparisons of the differing variety of practical and necessary ways open and closed commercial refrigerators and freezers are used in the field.

Standard 72 is a standard method of test which dictates how the unit is tested under controlled conditions to output energy consumption data. The standard does not mandate how the equipment is

to be applied in the field. The objective of the test data is to give a method of comparison for different units, under standardized conditions.

The standard is for test comparison, and is not a definition for field use, as Standard 72 is not intended to be used as a means of dictating the use of the commercial refrigerator or freezer in the trade.

\*Source <https://www.ashrae.org>

Chamber	ASHRAE 72	
<b>Air</b>	Airflow (SCFM)	Air Movement below 50 FPM
	Dry Bulb Temperature (°F)	60 to 105
	Relative Humidity (%)	15 to 95
<b>Water</b>	Water flow (gpm)	1-15
	Temperature (°F)	50 to 120
<b>Refrigerant</b>	Flow (gpm)	0.75 to 30
<b>Pressure</b>	Refrigerant (psig)	0-1000 (psig)
<b>TC's</b>	Temperature (°F) (T-Type)	-100 to 400 C
	Quantity	80
<b>BTU's</b>	Capacity (Btuh)	N/A
<b>Power</b>	Voltage (VAC)	0 to 312
	Current (Amps)	0 to 40
	Phase	1 & 3
	Hertz (Hz)	60
<b>Size</b>	Outdoor Room Height (ft)	N/A
	Outdoor Room Width (ft)	
	Outdoor Room Depth (ft)	
	Indoor Room Height (ft)	Height = 9'
	Indoor Room Width (ft)	Width = 12' 4"
	Indoor Room Depth (ft)	Depth = 16'
	Outdoor Room Opening Height (ft)	N/A
	Outdoor Room Opening Width (ft)	
	Indoor Room Opening Height (ft)	Door opening 8' w x 8' h
	Indoor Room Opening Width (ft)	



## Advancing Flammable Refrigerant Adoption in North America

From developing new standards and monitoring power consumption to conducting experiments on renewable energy sources, learn how UL is responding to today's challenges with New Science.

Rising costs, energy efficiency and environmental impact demand innovations in energy generation, distribution, management and usage. Learn how UL is bridging fire safety and environmental safety by developing a comprehensive set of new and updated safety standards for the commercial and residential use of EPA-approved flammable refrigerants for HVAC/R equipment. **Download** UL's New Science Sustainable Energy Article, Advancing Flammable Refrigerant Adoption in North America, today.

# STANDARDS CORNER

By Joe Musso / Standards Program Manager

Standards information link:

<http://www.ul.com/global/eng/pages/solutions/standards/>

Register for “What’s New” Register for “What’s New” to receive e-mails twice a month indicating the new published UL Standards, Outlines, and Proposals.

Sign up at: <http://www.ul.com/global/eng/pages/solutions/standards/accesstandards/whatsnew/register/>

## UL 82 – Gardening Appliances

Proposal to replace the battery-operated requirements in Supplement A with UL 2595 (Battery-Powered appliances) general requirements went to preliminary review October 25, 2013. The next step is for the proposal to go to ballot.

A survey was sent to gardening appliances stakeholders November 22, 2013 to determine if there is support for adoption of the IEC 62841 series covering lawn and garden machinery, to become the binationally harmonized (US/Canada) standards, eventually replacing the existing impacted UL standards (UL 82 – Gardening Appliances; UL 1447 – Lawn Mowers).

## UL 1447 – Electric Lawn Mowers

Proposal to remove the thrown object test in Section 69, while maintaining a reference to the thrown object test in ANSI B71.1 went to ballot October 4, 2013. The proposal achieved STP consensus and was published as a revision to the standard in December 2013.

## UL 130 – Electric Heating Pads

Proposal to revise the temperature limits for heating pad switches went to preliminary review September 11, 2013. The next step is for the proposal to go to ballot.

## UL 197 – Commercial Cooking Appliances

Proposal to add a new section covering appliances for outdoor use went to preliminary review June 28, 2013. Comments were received, and the next step is for the proposal to go to ballot.

## UL 250 – Household Refrigerators and Freezers (Bi-national standard with Canada)

Preliminary review of a proposed new edition, including 24 proposals, was conducted in 2012. Extensive comments were received during preliminary review from US and Canadian stakeholders, resulting in significant changes to the proposals. The proposed new edition is being prepared for ballot. Based on the transition to the IEC-based requirements in UL 60335-2-24, it is intended that this will be the last revision cycle for UL 250.

## UL 60335-2-24 – Household Refrigerators, Ice-Cream Appliances and Ice-Makers (Tri-national standard with Canada and Mexico)

The CANENA technical harmonization committee (THC) membership was refreshed in 2013, and a draft update to UL 60335-2-24 in accordance with the latest IEC version has been drafted for review by the THC. It is anticipated that the proposals will be available for the respective consensus bodies in the US, Canada, and Mexico sometime in the second or third quarter of 2014.

## UL 283 – Air Fresheners and Deodorizers

Proposals to revise requirements for direct plug-in devices with child appealing features went to ballot August 9, 2013. The proposals achieved STP consensus, and the changes are being prepared for publication in the standard.

## UL 325 – Door, Drapery, Gate, Louver, and Window Operators

The 6th edition of UL 325, including a significant number of new and revised requirements, was published October 14, 2013. Although there are no new proposals in process at this time, consideration is being given to scheduling a meeting of the STP sometime in 2014, to discuss several topics that are in the early stages of development.

## UL 471 – Commercial Refrigerators and Freezers

UL was recently invited to participate in an effort to adopt IEC 60335-2-89 (Part 2 for Commercial Refrigerating Appliances) as a tri-national standard with Canada and Mexico. UL surveyed industry stakeholders to confirm the level of support and invite individuals to participate in the harmonization activity. The results of the survey were favorable, and UL has agreed to participate in the harmonization effort.

## UL 484 – Room Air Conditioners

Proposal to add an exception that LCDI/AFCI devices are not required on cord-connected packaged terminal air conditioners (PTACs) employing a sub base went to preliminary review November 15, 2013. The proposal achieved STP consensus, and is being prepared for publication in the standard.

## UL 507 – Electric Fans

A number of proposal topics have been circulated to the STP for ballot and comment. Consensus has been achieved, and several topics will be recirculated to the STP with changes based on comments received during ballot. The next STP 507 Meeting is scheduled for Tuesday, February 25, 2014, in Clearwater, Florida.


**UL 563 – Ice Makers**

Proposal to add a new supplement for requirements for flammable refrigerants went to ballot August 9, 2013. The proposals achieved STP consensus, and the changes were published in the standard November 29, 2013.

**STP 745 – Electric Tools**

With the publication of UL 60745-2-23 (Die Grinders and Small Rotary Tools) September 20, 2013, each of the IEC 60745 Part 2s that UL intended to adopt have now been published. With the IEC transition to the new IEC 62841 series of standards for handheld and transportable tools, and lawn and garden machinery, efforts will be initiated to adopt and publish the associated UL 62841 Parts when appropriate, as the IEC editions are published.

**UL 749 – Household Dishwashers  
(Bi-national standard with Canada)**

The 9th edition of UL 749, including a significant number of new and revised requirements, was published March 20, 2013. The technical harmonization committee is currently reviewing a new set of proposals that have been compiled, and it is anticipated that the new revision cycle will be initiated for those proposals by the second quarter of 2014.

**UL 763 – Commercial Food Preparing  
Machines**

Proposals for filtered ventilation openings and leakage current limits for stationary ice/beverage dispensers with EMI filtering went to ballot November 15, 2013, with ballots and comments due December 16, 2013. STP consensus was achieved, with comments, and so the next step will be recirculation of the proposal.

**UL 858 – Electric Ranges**

Proposals for cord-connected low power built-in wall ovens, redundant surface element switches, and smart-enabled ranges went to ballot September 9, 2013. The proposals achieved STP consensus, and recirculation of the proposal, with minor changes based on comments, will be the next step.

**UL 923 – Microwave Cooking Appliances**

Proposals for electrical connections of interlock monitors, new requirements for oven door child resistance, and clarification of leakage current and power input tests went to ballot November 29, 2013, with ballots and comments due January 31, 2014.

**UL 982 – Household Food Preparing  
Machines**

A formal interpretation was initiated November 1, 2013, to clarify clause 22.4 with respect to the meaning of foreseeable use. Depending on the outcome, a proposal

will be drafted as appropriate for circulation to the STP. Several other proposal topics went to preliminary review in 2012. Based on the STP feedback, a number of the proposals needed further development. Once that work is completed, the next step will be for the proposals to go to ballot.

**UL 1017 – Vacuum Cleaners, Blower  
Cleaners, and Household Floor Finishing  
Machines (Bi-national standard with  
Canada)**

Proposed 9th edition of UL 1017 concluded its preliminary review in 2012. The next step will be the STP ballot, which is currently slated to begin during the second quarter of 2014.

**UL 1083 – Household Electric Skillets and  
Frying-Type Appliances**

Revisions that cover large item deep fryers and large item cooker/fryers were published July 1, 2013.

**UL 1278 – Movable and Wall- or  
Ceiling-Hung Electric Room Heaters**

A set of nine proposals concluded their ballot/recirculation cycle October 7, 2013. The set of proposals included the CPSC proposal to eliminate the use of auto-reset temperature-limiting controls on electric heaters. All of the proposals achieved STP consensus, and the changes are being prepared for publication in the standard.

**UL 2157 – Electric Clothes Washing  
Machines and Extractors (Bi-national  
standard with Canada)**

Proposed 3rd edition of UL 2157 concluded its preliminary review in 2012. Based on the STP feedback, a number of the proposals needed further development. Once that work is completed, the next step will be for the proposals to go to ballot.

**UL 2158 – Electric Clothes Dryers  
(Bi-national standard with Canada)**

Proposed 3rd edition of UL 2158 concluded its ballot/recirculation cycle November 25, 2013. A significant number of changes are included in the new edition, which achieved STP consensus. The next step will be publication of the 3rd edition.

# India Compulsory Registration Implementation Extended to January 2014

*As mentioned in the last issue of Appliance Advisor, a number of products are required to comply with the applicable Indian safety standards and Compulsory Registration before they can be imported, distributed or sold in India.*

For appliances, this requirement is applicable to microwave ovens.

Microwave oven manufacturers who have submitted their products for testing to laboratories recognized by the Bureau of Indian Standards (BIS) are allowed an extension of up to January 3, 2014 to achieve full compliance with the India Compulsory Registration Scheme, according to the latest announcement by the Indian Department of Electronics and Information Technology (DEITY).

To obtain an extension for the submitted products, the self-declaration by the manufacturer must be accompanied by test reports issued by any Indian national or international test house to equivalent standards.

The manufacturers who have been granted an extension by DEITY before October 3, 2013 will not be subject to an extension fee. Products submitted for testing to BIS recognized laboratories after October 3, 2013 will be levied a monthly fee from the date of the India Compulsory Registration Scheme comes into effect to the date the products are submitted for testing.

In addition, the option for manufactures to import goods at a higher extension fee

without submitting the products for testing is no longer available.

The deadline for affixing the statement of self-declaration and the unique Registration Number on registered goods is also extended to January 3, 2014. Meanwhile, the Registration Letter issued by BIS will be accepted for the purpose of customs clearance. However, the manufacturers or local representatives of the goods must place the required markings on the goods before they are sold in the market.

UL is accreditation ready for almost all categories of products including microwave ovens covered under the scheme. In fact UL India is the very first foreign laboratory accredited to test to Indian standards and has been involved in testing for many products that have been issued registrations by BIS successfully. In addition, BIS also accepts UL certified components in the products requiring mandatory registration.

This latest extension offers the yet-to-comply manufacturers another window of opportunity to achieve full compliance before the scheme comes into effect. UL's certification experts are here to help manufacturers targeting the Indian market meet the BIS deadline to ensure a smooth continuity of their businesses.



## How UL can help

Our Global Market Access team can help you achieve compliance by identifying applicable requirements for your specific product or technology feature to comply with current

regulations in safety, EMC, wireless and energy efficiency. For more information, visit our Global Market Access website Global Market Access or contact our experts at [gma@ul.com](mailto:gma@ul.com).

These updates are for information purposes only and are not intended to convey legal or other professional advice.

## Brazil INMETRO Test Data Acceptance Requirements

To sell products in Brazil, the INMETRO Mark is mandatory for most household appliances. Depending on appliance types, energy efficiency and noise level requirements may also apply in addition to safety requirements. A common question that has come up frequently is regarding where testing can take place and what type of test reports are accepted for the INMETRO Mark.

In compliance with INMETRO regulations, testing activities can be performed within or outside of Brazil and should be conducted by an accredited third party laboratory with the applicable scope meeting one of the following criteria:

1. INMETRO Accreditation
2. Accreditation by an Accreditor who is a signatory to the Inter American Accreditation Cooperation (IAAC)
3. Accreditation by an Accreditor who is a signatory to the International Laboratory Accreditation Cooperation (ILAC)



### How UL can help

Our Global Market Access team can help you achieve compliance by identifying applicable requirements for your specific product or technology feature to comply with current regulations in safety, EMC, wireless and energy efficiency. For more information, visit our Global Market Access website [GlobalMarketAccess.com](http://GlobalMarketAccess.com) or contact our experts at [gma@ul.com](mailto:gma@ul.com).

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NOTE: As an exception, testing for compressors (IEC60335-2-34) can be conducted in accordance with the rules of the CB Scheme, i.e. CB Test Report and Certificate are accepted.

If working with an accredited and qualified lab such as UL, testing may also take place at a manufacturer's test lab participating in one of the following programs:

- Witness Test Data Program (WTDP) under UL's Data Acceptance Program

- Witness Manufacturer's Testing (WMT) under CB Scheme
- Testing at Manufacturer's Premises (TMP) under CB Scheme

With UL's newest lab addition of UL-Testtech in Brazil, UL can now offer complete testing, certification, inspection, and market surveillance services for Brazil market access. You'll find more information at [GlobalMarketAccess.com](http://GlobalMarketAccess.com) and UL Brazil, or contact our experts at [gma@ul.com](mailto:gma@ul.com).



# New EMC Standard for China CCC Mark



The Standardization Administration of the P.R. China (SAC), under the General Administration of Quality Supervision (AQSIQ), announced updated EMC standard requirements that became effective on July 1, 2013. The updated requirements impact many products, including some appliance products such as dishwashers, washing machines, commercial cooking appliances, microwave ovens, vent hood, etc.

The following standards came into effect on July 1, 2013:

- GB17625.1:2012 (Electromagnetic compatibility - Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase), IDT IEC 61000-3-2:2009 Ed.3.2), and
- GB13837:2012 (Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement, MOD IEC/CISPR 13:2009)

The above standards replaced GB17625.1:2003 and GB13837:2003 respectively.

Implementation of the update standards will be in four phases:

### Phase 1: before July 1, 2013

Customers can apply for CCC Mark according to either the old standards, or the new standards,

### Phase 2: July 1, 2013 – July 1, 2014

Applications under the old standards will no longer be accepted. All certificate updates

should be completed before the completion of the first CCC follow-up inspection (including the correction closing), and no later than July 1, 2014. After July 1, 2013, non-compliant products will not be permitted to be shipped out of factories, sold in or imported into the China market. Products that are already in the market and no longer in production will not be affected and CCC certificate updates are not required.

### Phase 3: July 1, 2014 – October 1, 2014

All CCC certificates issued to the old standards will be suspended by the China Certification Organization (CO), and all the suspended certificates need to be updated according to the new standards before October 1, 2014.

### Phase 4: post October 1, 2014

All suspended certificates will be withdrawn by the China CO.

In addition to the CO channel, applicants can submit a Supplier Declaration of Conformity (SDoC) and Test Report along with other supporting documents as proof that their products comply with the new version of the standards, provided the testing laboratory of the factory/manufacturer meets the required criteria. This channel only applies to modification requests for EMC standard update and does not apply to new applications or modifications due to product changes.

Send an e-mail to [gma@ul.com](mailto:gma@ul.com) today with your certificate number to start the process of updating your certificates.

## How UL can help

Our Global Market Access team can help you achieve compliance by identifying applicable requirements for your specific product or technology feature to comply with current

regulations in safety, EMC, wireless and energy efficiency. For more information, visit our Global Market Access website Global Market Access or contact our experts at [gma@ul.com](mailto:gma@ul.com).

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## Warranty Costs Eating Away at Your Profits?

*Warranty claims paid by US based HVAC & Appliance companies are estimated to be in excess of \$1.9 billion/yr.*

This is money that would drop to each company's bottom line if the product did not require service. Underwriters Laboratories, with over 100 years of assisting manufacturers with product safety, can also help to drive your warranty cost down. With the application of Reliability Science, we have helped companies in the HVAC and Appliance industries solve complex problems that drive warranty spend.

### Case Study

UL was contacted by an HVAC manufacturer who was experiencing high warranty costs in a specific geographical region. UL accompanied the manufacturer to the sites of the failures to investigate the cause. UL developed and executed a test plan to reproduce the failure mode in the lab. Upon successfully reproducing the failure, UL worked with the manufacturer to develop a statistically valid test plan and built a test fixture to more rapidly reproduce the failure mode. The Accelerated Life Test (ALT) was used to rapidly validate the proposed design modification, allowing the manufacturer to quickly enter the market with an improved product. The ALT test fixture was shipped to

the manufacturer for ongoing quality audits of the product.

UL can assist your company with:

- Reliability Engineering services
- Reliability modelling
- Failure Mode & Effects Analysis
- Test protocol development
- Reliability testing, including ALT, HALT, MEOST
- Root cause analysis
- Test fixture design, construction and qualification

UL has a lab specifically dedicated to helping companies improve the reliability of their HVAC and Appliance products. Our highly trained, professional staff is available to assist you in reducing your company's warranty expenses, allowing those dollars to drop to the bottom line.

For more information please contact Mike Nelson, UL Reliability Manager, [Michael.Nelson@ul.com](mailto:Michael.Nelson@ul.com)

### How UL can help

Our Global Market Access team can help you achieve compliance by identifying applicable requirements for your specific product or technology feature to comply with current regulations in safety, EMC, wireless and energy efficiency. For more

information, visit our Global Market Access website [Global Market Access](http://GlobalMarketAccess.com) or contact our experts at [gma@ul.com](mailto:gma@ul.com).

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## UL will be Recognized and Authorized by UAE

UL Signs Memorandum of Understanding (MoU) with ESMA for Safety and Energy Efficiency Testing in the United Arab Emirates (UAE)

On October 22, 2013, UL signed a memorandum of understanding (MoU) with the United Arab Emirates certification authority, Emirates Authority for Standardization and Metrology (ESMA).

With this MoU, UL will be recognized and authorized by ESMA to conduct complete conformity assessment, testing, inspection and market surveillance methodologies and requirements for safety and energy efficiency certification of products for the UAE.

Under the MoU, UL's test facilities have also been authorized to conduct testing of products for safety certification and energy efficiency labeling as per ESMA regulations.

Currently, there are 16 products under the regulation for safety covering 32 standards, 4 which are for energy efficiency. The products include water heaters, irons, microwave ovens, room air conditioners as well as electrical and gas appliances.

For further details, please contact the Global Market Access Team at [gma@ul.com](mailto:gma@ul.com).

# DRIVE RESULTS THROUGH EDUCATION

*By Heather Gondek / Knowledge Solutions*

*It's no secret that today's HVAC and Refrigeration manufacturers face increasing challenges in the global business environment.*

Companies are contending with shifting energy regulations and efficiency requirements, product recalls and liabilities pose a risk to a company's reputation, not to mention the urgency to get products into the fast-growing Asia Pacific market quickly. Compliance staff is inundated with conflicting or inaccurate information and many organizations are struggling to find a reliable knowledge provider.

In response to these ongoing challenges, UL is unlocking its vast technical expertise to equip companies with the knowledge they need to keep pace with new technologies and regulations, advance their approach to risk management, and ultimately design, build and sell safer products around the world.

## **Educational Programs for the HVAC/R Industry**

Safety & Compliance Fundamentals, a first-of-its-kind educational program that provides standardized knowledge around critical product safety and regulatory information. Applicable to all staff involved in product design, development, research or testing, the program is designed to address skill gaps and systematically upgrade organizational knowledge across a wide spectrum of topic areas.

### **Sample courses include:**

- Global Compliance Strategy
- Product Safety Requirements for China Market Access
- Navigating the National Electrical Code for North America
- Introduction to Sustainability

Learn more about the program at [www.ul.com/fundamentals](http://www.ul.com/fundamentals)

- General Requirements, IEC 60335-1, 5th Edition – Gain an in-depth understanding of key topics outlined in IEC 60335-1 5th Ed. such as spacing and insulation requirements, supply connections, component requirements and performance test criteria.

- Designing for Compliance to UL 250 – Ensure your commercial household refrigeration and freezers are compliant to the latest requirements and learn how to develop an actual test program for UL 250.

- Diagnosing HVAC Lightning and Electrical Surge Failures eLearning – Train HVAC technicians to use a systematic approach to troubleshoot, diagnose and characterize if a system failure was caused by lightning strike and/or electrical surge damage.

Learn more about UL's educational offerings at [ul.com/knowledgesolutions](http://ul.com/knowledgesolutions)



# Energy Efficiency for Electric Motors

*By Frank Ladonne / Primary Designated Engineer*

*UL's Energy Efficiency Certification program tests and certifies energy-using and energy-related products for their compliance to a variety of energy efficiency requirements.*

Having been in the electric motor business for over 100 years, as experts in the field, UL provides numerous solutions for motor manufacturers.

- **IEC Certification** – Certification of motors to IEC standards
- **DOE Testing** – Exclusive DOE accredited laboratory
- **DNA Process** – Simplified certification, streamlined product safety certification and reporting
- **Global** – Access to US and global markets
- **Bundle** – Service alignment with safety testing

## US DOE energy efficiency requirement updates

Today, energy efficiency regulations of for electric motors are more rigorous than ever, affecting not only motor manufacturers but manufacturers of any product that contains a motor. Look to UL and our team of experts to help mitigate the risk of civil penalties and/or regulatory action for noncompliance. Manufacturers who aren't aware of these regulations or who do not react in a timely way will see the doors to their markets being shut.

### United States

Starting on March 9, 2015, many single and three-phase electric motors, between ¼ and 3 horsepower, shipped to the US alone or as a component of another piece of equipment must meet new, more stringent energy efficiency requirements imposed by the US DOE. Again, products found not in compliance will not be admitted into US

ports of entry.

Starting on December 19, 2010, most three-phase electric motors, between 1 and 500 horsepower, alone or as a component of another piece of equipment, manufactured in or shipped to the US must meet new, more stringent energy efficiency requirements imposed by the US Department of Energy (DOE). These new requirements were laid out in the Energy Independence and Security Act of 2007 (EISA 2007) but the efficiency levels continue to become more stringent. Products found not in compliance will not be admitted into US ports of entry or allowed for sale in the US.

### Global

The regulations for motor energy efficiency are not just being implemented in the US; Canada, Europe, Mexico, China, Japan, Korea, much of South America, also have motor energy efficiency regulations and UL can help manufacturers meet these regulations, as well. Penalties for non-compliance include immediate cessation of distribution in commerce and potential substantial civil penalties (fines) levied against the offending manufacturer. In 2010, the US DOE fined 27 companies over \$3.5 million for selling products without certifying they met energy efficiency standards. Fined companies included manufacturers, importers and resellers of motors and appliances.

If you are a manufacturer of motors or are a manufacturer of products that contain motors, you should be aware of these requirements now to ensure your continued access to markets for your products.



- UL has been an active member of the US DOE committee that writes these requirements. No one knows them better than we do.
- UL was recently named the first testing laboratory to-date accredited by the US DOE to test small electric motors to their regulations.
- UL can provide one-stop-shopping. With one submittal, we can:
  - Evaluate motors to our own Standards for Safety and provide UL certification
  - Evaluate for energy efficiency to US DOE regulations
  - Evaluate to the requirements contained in IEC 60034-30 compliance with the energy efficiency regulations in force in much of Europe and Asia
  - Evaluate to the requirements contained in C390 and C747 for compliance with the energy efficiency regulations in force in Canada
  - Evaluate to the requirements contained in IEC 60034 and IEC 60335 for compliance with the safety regulations extant in much of Europe and Asia

For more information please contact Al Padilla at [Al.Padilla@ul.com](mailto:Al.Padilla@ul.com).

# DNA Download

*By Frank Ladonne / Primary Designated Engineer*

## DNA Process Expands Product Categories

UL has been evaluating products and writing safety certification reports for over 119 years. Consequently, UL owns the largest repository of product safety certification data in the world. In 2012 UL launched a pilot process in the motor product categories focused on unlocking the potential contained in this vast database of technical knowledge — eliminating the historical text-based essay and simply catalogued and stored the critical data in a searchable, sortable, readily accessible database — unlocking the power of the technical knowledge.

Today, UL is expanding the DNA process into seven additional product categories. Leveraging the success of DNA for Motor and later Controls product categories, we are now addressing:

- Plastics
- Printed Wiring
- Appliance Wiring
- Switches
- Power Cords
- Insulation Systems
- Portable Tools

We are quickly expanding the power, efficiency and capability of the DNA process into UL's certification of these products. This not only brings added

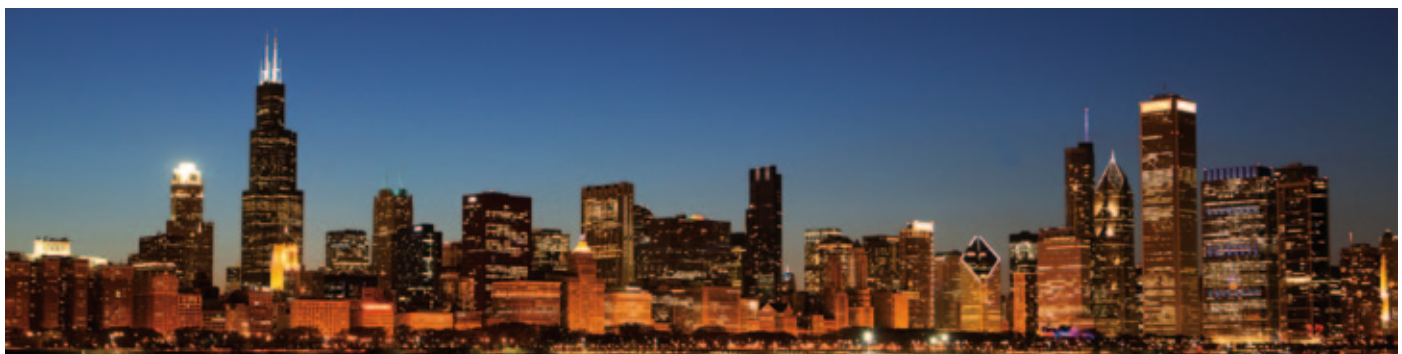
value to manufacturers of these products but consider that virtually every end product manufactured and sold today is made up of one, or likely many, of these building blocks. Manufacturers of those end products will share in the value as they see their certification process markedly improve and as they see greater ease and efficiency in sourcing alternate components. For information of how to leverage the power of DNA in your next submittal contact [DNAinfo@ul.com](mailto:DNAinfo@ul.com)

## 2013 Chicago Innovation Awards Organization Recognizes UL's DNA Process as a Top 100 Nominee

In October, UL was nominated as a Top 100 Nominee finalist by the 2013 Chicago Innovation Awards organization, in recognition of its Product Safety DNA Process. Winners of the Chicago Innovation Awards, the largest annual celebration of innovation in the Midwest, cut across all industries, representing big companies, small companies, for-profit and not-for-profit, high-tech, low-tech, and no-tech. They demonstrate the breadth of innovation that is unique to the Chicago region. UL's Product Safety DNA Process, categorized under the annual award's "B2B Software and Services" category, is a state-of-the-art, data-centric certification and reporting process for product safety evaluations. Historically, UL product safety certifications

and evaluations were reported as a text-based essay on the safety critical attributes of the product tested and evaluated to UL's published requirements or standards. With the DNA process, text-based reporting is eliminated and critical data is instead stored in an electronic database. This database is catalogued and structured so that data can be easily searched, sorted and linked enabling the reference of previous construction and testing, reducing effort, turnaround time — in some cases from months to days — and cost for present and future submittals by manufacturers. "UL is honored to be recognized as a finalist in the very city where our company was founded in 1894," said Frank Ladonne, UL Principal Engineer. "For more than a century we have employed exacting scientific processes and the highest ethical principles to deliver trusted results. Today, we are focusing on the next generation of safety challenges, helping new geographies, new industries and new stakeholders create safer living and work environment in the most efficient ways with transformational advances like the DNA process," added Ladonne.

For more information visit [www.ul.com/motors](http://www.ul.com/motors). The Chicago Innovation Awards aim to recognize Chicago as a hub of innovation by igniting a new narrative for the region, strengthening its economic future and building the spirit of innovation throughout the community.



## Experts on New Science

From *New Science Sustainable Energy Journal*, Issue 1

By **Tom Blewitt** / Director of Principal Engineers, Appliance and Lighting, and Corporate Fellow

### What are the biggest safety and sustainability challenges for smart appliances?

Appliance safety standards historically address the inherent functionality of an appliance. Features are factory-designed and set, are usually limited so that the appliance is not too complicated for the user, and therefore are well-understood and planned for in the standards. Smart appliances and their connectivity introduce many new and potentially complicating variables.

Safety standards for smart-enabled appliances also need to address:

- Network connection that introduces action by external devices or other parties (e.g., a utility). External devices communicating with an appliance (e.g., a home energy management system) have potential to:
  - Adversely affect appliance function (e.g., cause a washer drum to start rotating unexpectedly)
  - Interfere with appliance safety protection features (e.g., disable over-temperature control)
- Remote operation by the consumer that no longer requires proximity to the appliance. The new remote controls (e.g., smartphones) are not made specifically for that purpose, and consumers are currently inexperienced in remote operation of the many appliances soon to have that capability.
- Functions and capabilities that can be altered after the appliance has left the factory. The ability to download software that “fixes” bugs in the appliance controls can be a real positive, but it carries the risk that some unforeseen or even

malicious change in operation can be implemented as well.

Aside from the safety standards, there is a small but persistent and potentially challenging issue with electric meters that could affect the prospects for energy savings from smart appliances. It is not yet clear whether the ambivalence of some regarding residential smart meter installation will ultimately have traction and slow down their market penetration. If it does, I believe the proponents of this technology will need to increase their efforts to educate the public on its advantages and to address the concerns of those who oppose it.

### What safety challenges emerge with the use of new, more environmentally friendly refrigerants?

For decades, relatively stable chemical compounds were effectively and economically used in refrigeration equipment. Product safety standards were mature and appropriately addressed their safety. Because the refrigerant gases were generally nontoxic and nonflammable, the consequences of overpressurization and chemical compatibility with electrical insulating materials were the major safety focus. However, some of the “new” refrigerants in use and under consideration have resulted in the need to revisit a long-resolved safety issue, namely, flammability.

Flammable or not, refrigerant gases need to be contained within a closed refrigeration system. If containment is breached, the potential for fire is increased when the released gas is flammable. While all refrigeration systems must safely contain refrigerant under pressure — normal or abnormal due to operating and installation conditions



— refrigerant systems with flammable gases must be designed with additional attention paid to the reliability of containment. The product safety standards address their potential vulnerability to leakage as well as the availability of ignition sources near a leak.

Certain new refrigerants fall somewhere between the flammability of hydrocarbons and the nonflammability of legacy gases. Known as “2-L” gases, they are being used in automotive air conditioning and have promise for stationary air-conditioning systems. However, there is ongoing consideration of what requirements are appropriate for the stationary air-conditioning application, and consensus has not yet been attained.

Working with flammable refrigerants requires training and the use of proper equipment. Service personnel cannot carry large quantities of replacement refrigerant into homes. They also need to be able, under field conditions, to recognize when a flammable refrigerant (versus another type) is used. In fact, all parts of the supply chain and those responsible for such equipment throughout its life cycle need to consider how they safely store, transport, handle, service and dispose of the equipment. Fortunately, I see a good deal of work being done by UL and other stakeholders in order to be prepared for increased use of these refrigerants.



# January 4, 2014 Low Lead (Pb) Law May Impact Some Appliance Manufacturers

By **Jeff Hebenstreit** / *Principal Engineer – Water Systems*

Effective January 4, 2014, the *Reduction of Lead In Drinking Water Act* redefined the Pb free requirements of the Safe Drinking Water Act (SDWA) Section 1417. This included revising the lead content allowed in wetted surfaces to a weighted average of 0.25%. It also established a method for calculation of Pb content.








If your product is connected to a potable water line, it may be subject to the lead content requirements of the safe drinking water act. UL experts can work with you and your team to help you determine if your product needs to comply. Our staff will personally walk you through the requirements and test program to help you get certification to NSF/ANSI 372 for demonstration of compliance.



Contact us at [Plumbing@ul.com](mailto:Plumbing@ul.com) or call Tom Skuta 847-664-1474 or 1-877-854-3577 ext. 44308 to get started or for additional information. Discover more at [www.ul.com/plumbing](http://www.ul.com/plumbing)

## See you This Year!

Don't miss UL at one of the below 2014 industry tradeshows, conferences or events we will be participating in.

April	7 – 9	China Refrigeration Expo	Beijing, China	
April	15 – 19	Canton Fair	Guangzhou, China	
May	2 – 3	AHAM Annual Meeting	Boca Raton, FL	
May	6 – 8	National Hardware Show	Las Vegas, NV	
May	18 – 21	Asia Conference on Refrigeration & A/C (ACRA)	Jeju Island, Korea	
September	10 – 12	HVAC Asia	Singapore	
September	23 – 25	AHR Expo Mexico	Mexico City, Mexico	

Event participation is subject to change.



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