



APRON MARKINGS & SIGNS HANDBOOK

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1. INTRODUCTION

This handbook presents a series of apron markings and signs, based on a survey of current best practice and practical application at a number of airport operators. The survey has been carried out under the auspices of ACI.

The Second Edition of the ACI Apron Markings and Signs Handbook was published after a review of the First Edition and findings for the need of additional markings and signs to increase safety and uniformity.

This document is intended to complement ICAO Annex 14, Volume 1 and the ICAO Aerodrome Design Manual (ADM), Part 4. ICAO expresses in the ADM that additional guidance on apron markings and examples of current best practices is given in this handbook.

The process of reviewing this manual and adding new markings and signs as required will be carried on by a small working group of representatives from ACI.

It is anticipated that implementation of world-wide standards for apron markings and signs will be a significant contribution to a safe apron environment and therefore it is intended for the use of planners of apron areas, all staff working on aprons, pilots, air traffic controllers and apron controllers.

We commend this handbook

Airports Council International

2. PRINCIPLES

2.1. RECOMMENDED COLORS

Until now, ICAO Annex 14 has no standards for the colors of apron markings except that taxilane markings and aircraft stand markings shall be yellow.

The proposed color coding of apron markings is therefore:

Yellow	Taxiway / taxilane centerline markings and aircraft stand markings intended for the safe maneuvering of aircraft (according to ICAO)
White	Apron markings intended for the safe maneuvering of vehicle traffic and vehicle parking
Red	Indicates that a vehicle must not cross except a clearance by ATC is received (Border of responsibility; ATC – Airport)
Red	Red universally is seen as a color representing danger. It indicates areas which must never be crossed during aircraft maneuvering in the vicinity
Blue	Color coding for multiple used taxiways or taxilanes.
Orange	Color coding for multiple used taxiways or taxilanes.
Green	Markings to support locating of underground service during winter contamination



To increase visibility of markings at night and in low visibility conditions and where necessary because of the color of the pavement, they should have a border in a contrasting color on both sides.

Black Border	For yellow and white markings on light colored pavements (e.g. concrete)
White Border	For red markings on dark colored pavement (e.g. bitumen)

2.2. RECOMMENDED CHARACTERISTICS

According to ICAO Annex 14 **lines for the safe maneuvering of aircraft** should have a width of not less than 15cm.

For better visibility it is recommended by ACI, that these lines should be minimum 20cm in width.

According to ICAO Annex 14 **apron safety lines** (e.g. service roads, parking areas) should have a width of at least 10cm.

For better visibility it is recommended by ACI, that these lines should be minimum 15cm in width. For stand safety lines it is recommended to use a width of not less than 20cm.

According to ICAO Annex 14 at aerodromes where operations take place at night, pavement markings should be made with **reflective materials** designed to enhance the visibility of the markings. Guidance on reflective materials is given in the ICAO Aerodrome Design Manual, Part 4.

According to ICAO Annex 14 the **character height** on mandatory instruction markings and information markings should be 4m.

Due to limited space especially when superimposed function of parking stands is given, the character size can be reduced.

It is recommended by ACI in such cases not to fall below a value of 2m.

According to ICAO Annex 14 the **form and proportions of characters** on mandatory instruction markings and information markings should be in accordance to ICAO Annex 14, Appendix 3. (See chapter 6.1. of this handbook)

ACI recommends that due to space and to prevent confusion **characters which must be read from a stationary position** (e.g. marshaller stop, stand identification on parking stand) should be minimum 1m in height. The form and proportions must be in accordance to ICAO Annex 14, Appendix 4. (See chapter 6.2. of this handbook)

Information markings and mandatory instruction markings should be positioned in such a way to avoid **turning head requirement** if possible.

ATTENTION: Some drawings in this manual are not to scale.

3. APRON MARKINGS FOR AIRCRAFT

3.1. STAND LEAD IN LINE, TAXIWAY AND TAXILANE CENTRELINE

Taxiway / taxilane centre line markings are clearly defined in ICAO Annex 14. Stand lead-in lines are effectively a continuation of taxiway centre lines, and should have the same width. Their function is to allow an aircraft to taxi under its own power or to be towed whilst maintaining the necessary clearances from obstacles it is recommended that a contrasting color (black) be used when taxiway, taxilane or stand centre lines are painted on concrete.

The minimum acceptable width specified by ICAO for a stand lead-in line is 15 cm, but ACI recommend a 20 cm minimum width, in order to give increased visibility.

Color	Centreline	Borderline
	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B
	<i>0,2 m min.</i>	<i>0,1 m</i>



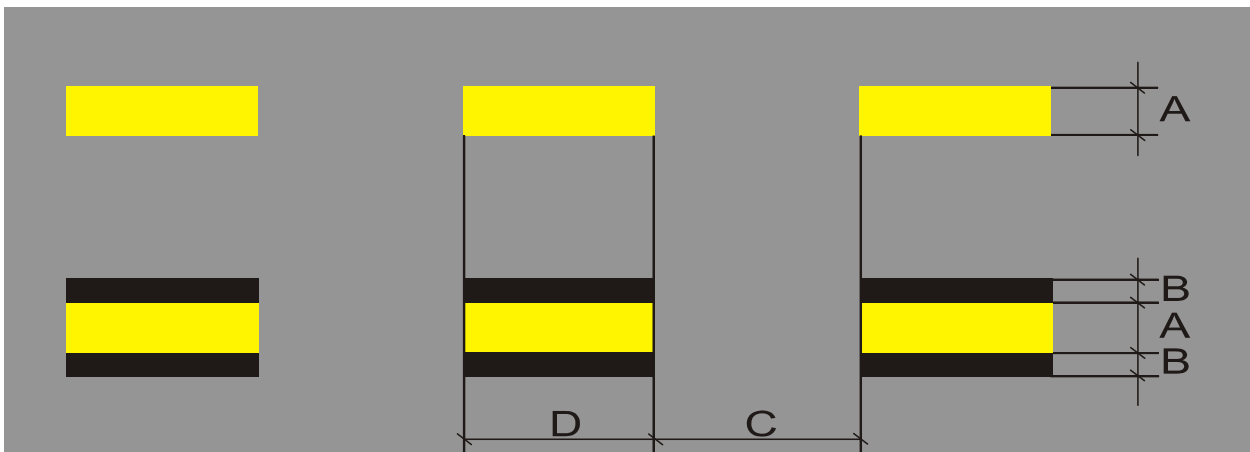
3.2. STAND LEAD IN LINE FOR MULTIPLE USEABLE PARKING STANDS

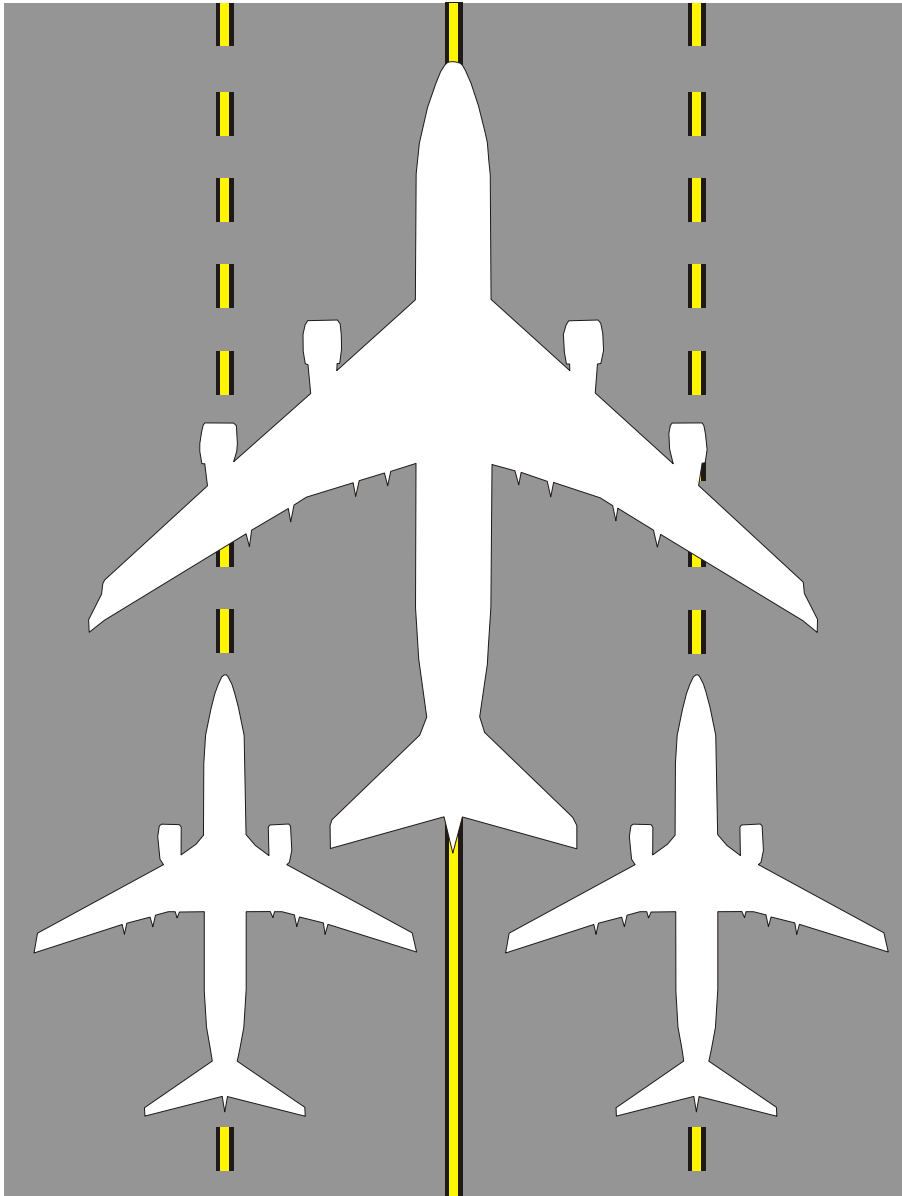
When aircraft stands are used superimposed and therefore a secondary guideline is provided, it should be – according to ICAO Aerodrome Design Manual – a broken line to distinguish it from the primary line. The primary line should be for the most critical aircraft.

It is recommended that a contrasting color (black) be used when such lines are painted on concrete.

Color	Centreline	Borderline
	Yellow	Black

Dimensions	A	B	C	D
	0,2 m min.	0,1 m	2,0 m	2,0 m





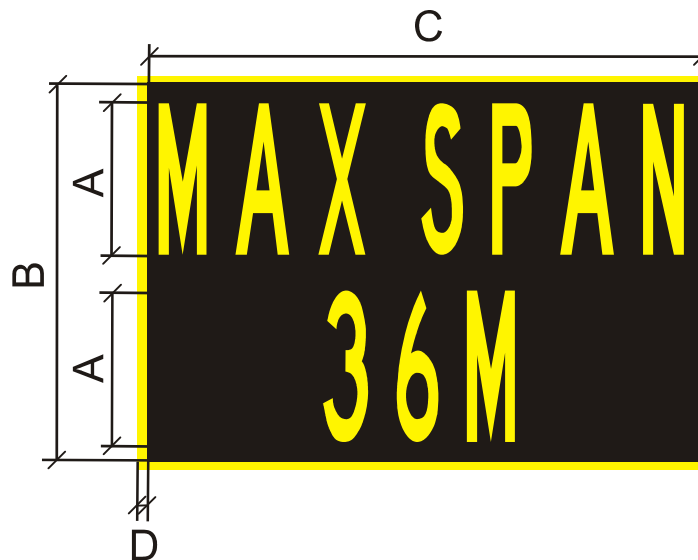
3.3. MAXIMUM WINGSPAN MARKING

A MAX SPAN marking is an information marking according to ICAO Annex 14, Volume 1. It should be located across the surface of a taxiway / taxilane centerline

When there is insufficient contrast between the marking and the pavement surface, it shall be surrounded by a yellow borderline.

Color	Charakters	Background	Borderline
	<i>Yellow</i>	<i>Black</i>	<i>Yellow</i>

Dimensions	A	B	C	D
	<i>2,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0m</i>	<i>9,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



3.4. NO ENTRY MARKING

A NO ENTRY marking is a mandatory instruction marking according to ICAO Annex 14, Volume 1. It shall be located on the left hand side of a taxiway centreline in a minimum distance of 1 m from the centreline where an entry is prohibited.

When there is insufficient contrast between the marking and the pavement surface, it shall be surrounded by a white borderline.

Color	Charakters	Background	Border
	<i>White</i>	<i>Red</i>	<i>White</i>

Dimensions	A	B	C	D
	<i>2,0 m</i>	<i>3,0 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



3.5. MULTIPLE USEABLE AIRCRAFT STAND TAXILANE

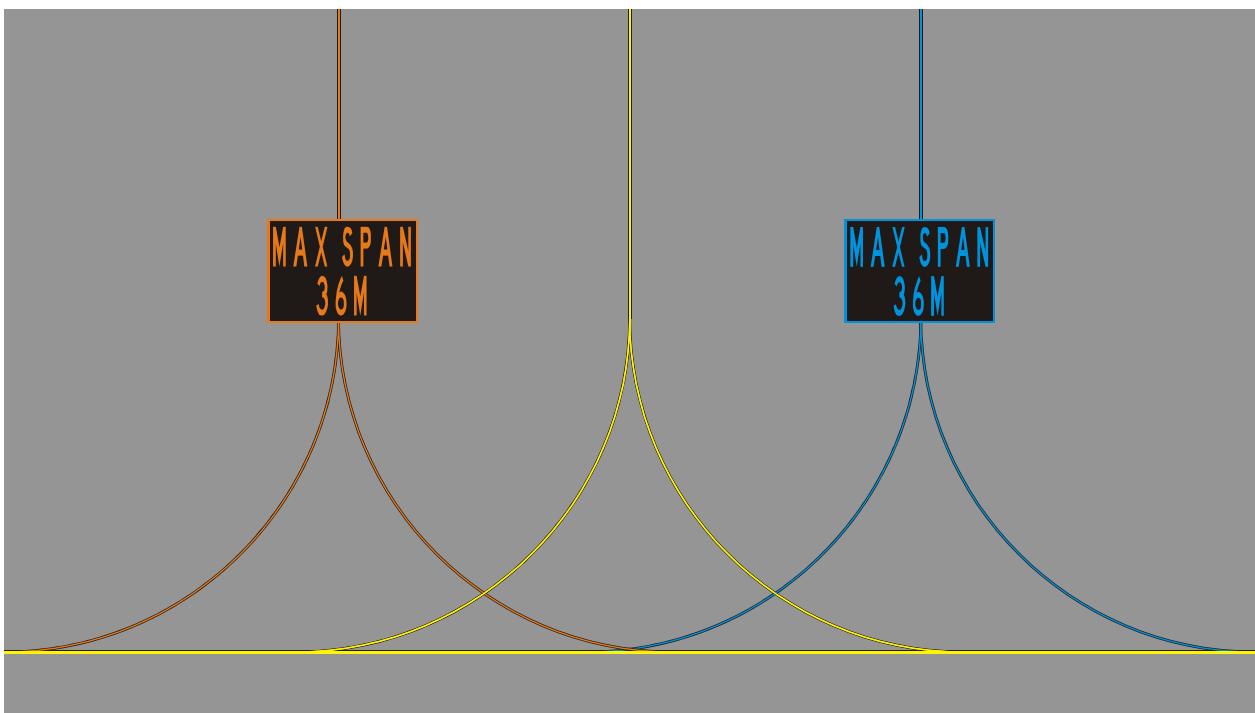
To increase flow of traffic in aircraft stand taxilanes it may be helpful to use them multiple (e.g. two aircraft with maximum wingspan 36m or one aircraft with maximum wingspan 65m). Minimum distances from the centerlines to centerlines and/or to objects can be found in ICAO Annex 14, Volume 1.

Current best practice on many airports has shown, that color coding of centerlines is recommended to guarantee safe operations and to provide proper guidance.

Due to lack of possibilities the colors blue and orange should be used. In addition the maximum wingspan for the restricted taxilane centre lines shall be marked in the same color. If installed, taxilane centerline lights shall be in the same color as the markings alternating with green lights.

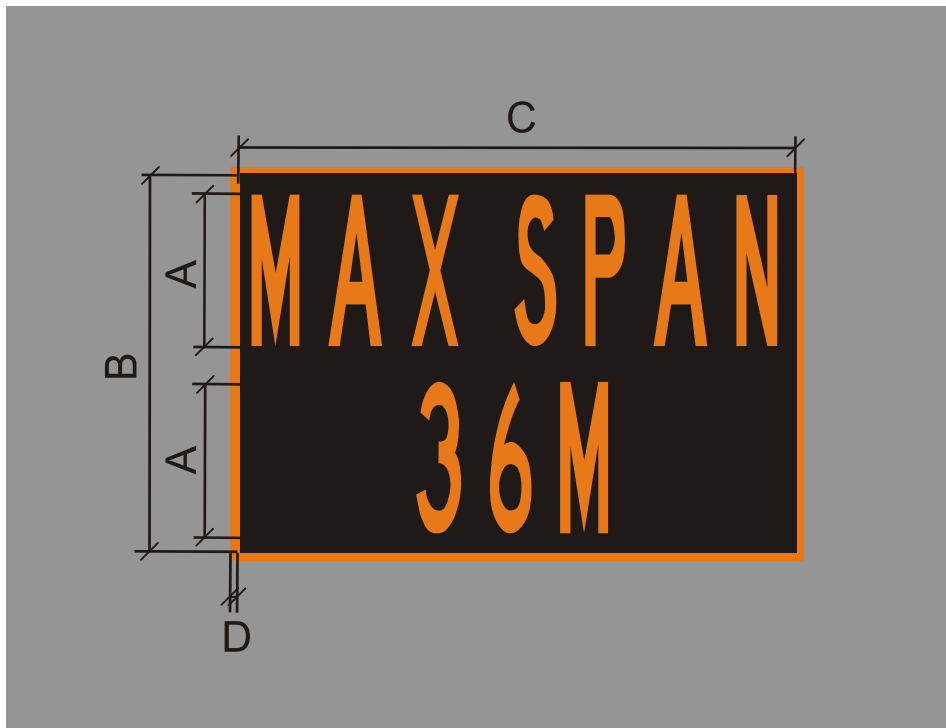
To increase visibility of centerline markings and "MAX SPAN" markings because of the color of the pavement, they should have a border / background in a contrasting color.

Color	Centreline	Borderline
	<i>Blue / Orange</i>	<i>Black</i>
Dimensions	Centreline	Borderline
	<i>0,2 m min.</i>	<i>0,1 m</i>

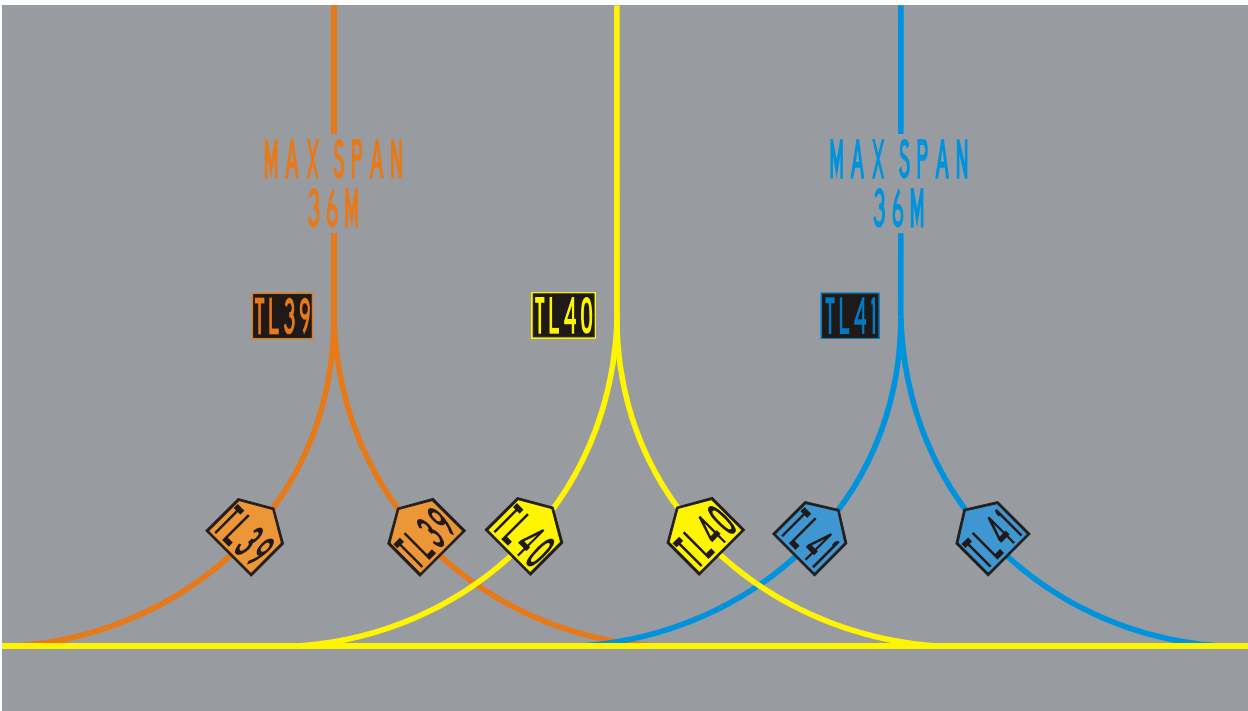


Color	Charakters <i>Yellow /Blue / Orange</i>	Background <i>Black</i>	Borderline <i>Yellow / Blue / Orange</i>
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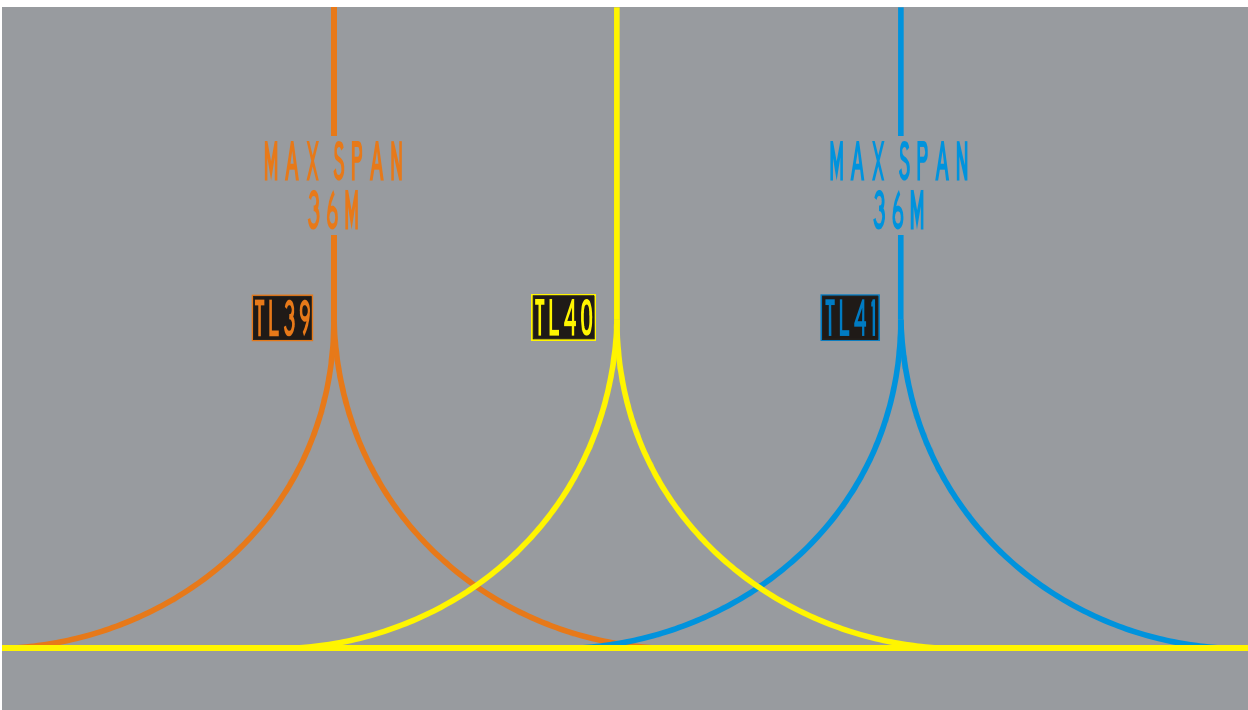
Dimensions	A <i>2,0 m</i>	B <i>5,0 m</i>	C <i>Acc. to character width</i>	D <i>0,1 m</i>
	<i>4,0m</i>	<i>9,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



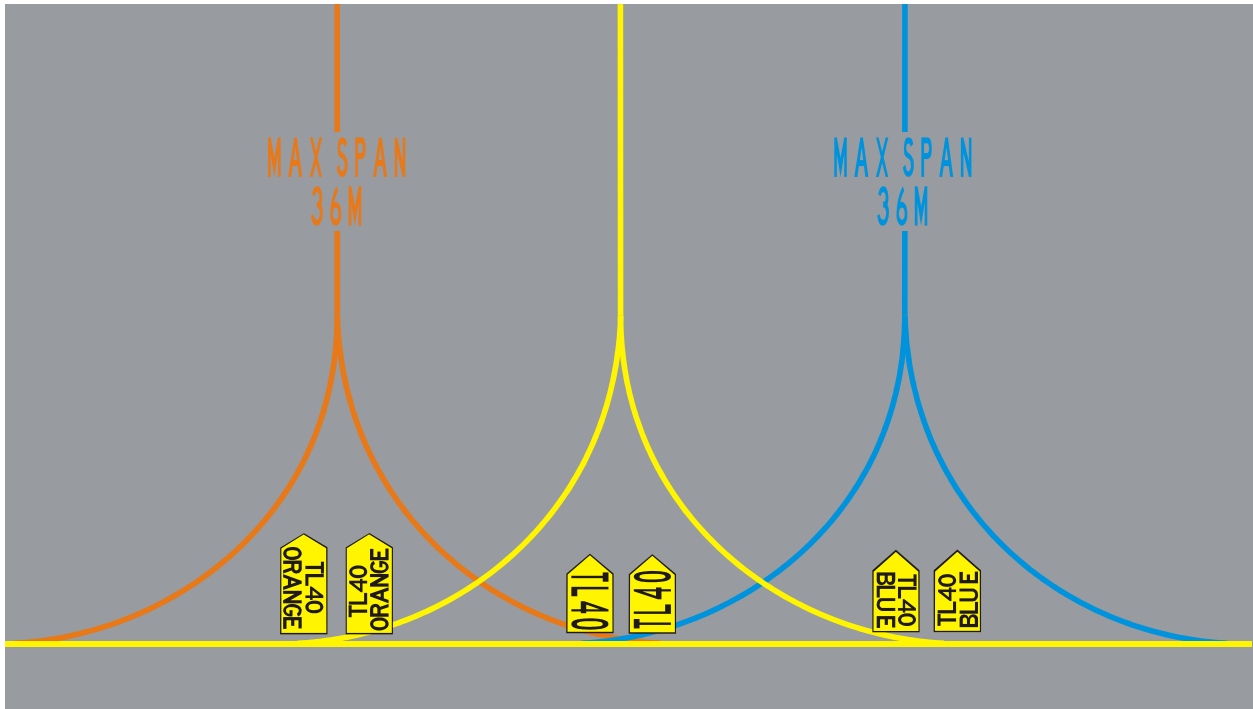
3.5.1. Option 1



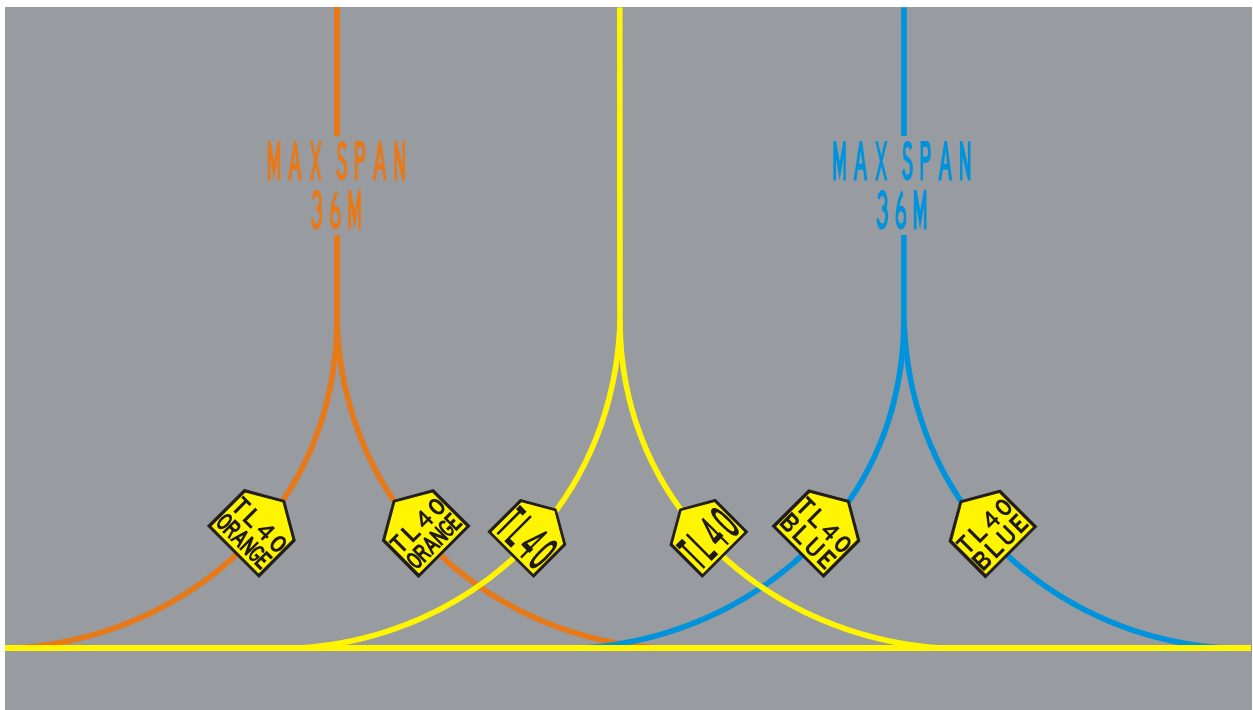
3.5.2. Option 2



3.5.3. Option 3



3.5.4. Option 4



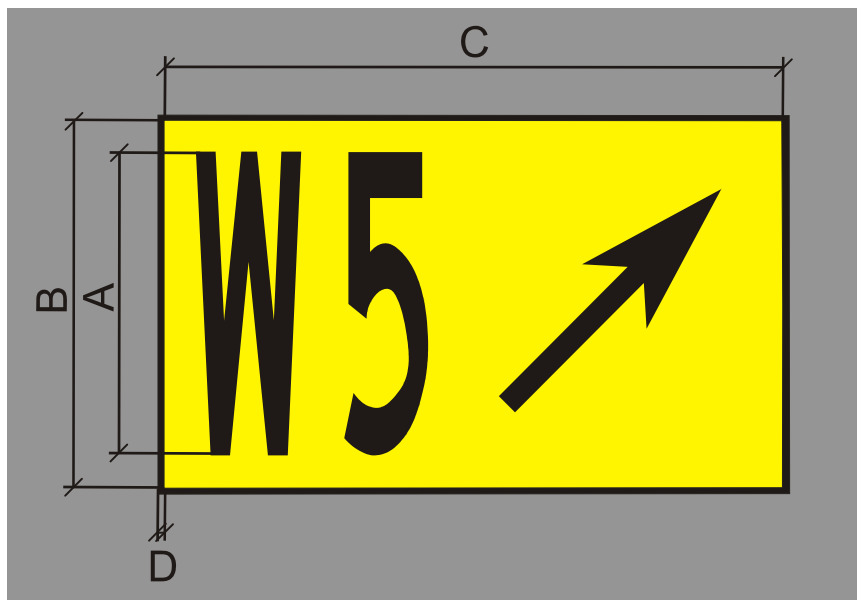
3.6. INFORMATION MARKING

ICAO Annex 14: Where an information sign would normally be installed and it is impractical to install, an information marking shall be displayed on the surface of the pavement.

3.6.1. Option 1 – Indication of direction and destination

Color	Charakters	Background	Border
	<i>Black</i>	<i>Yellow</i>	<i>Black</i>

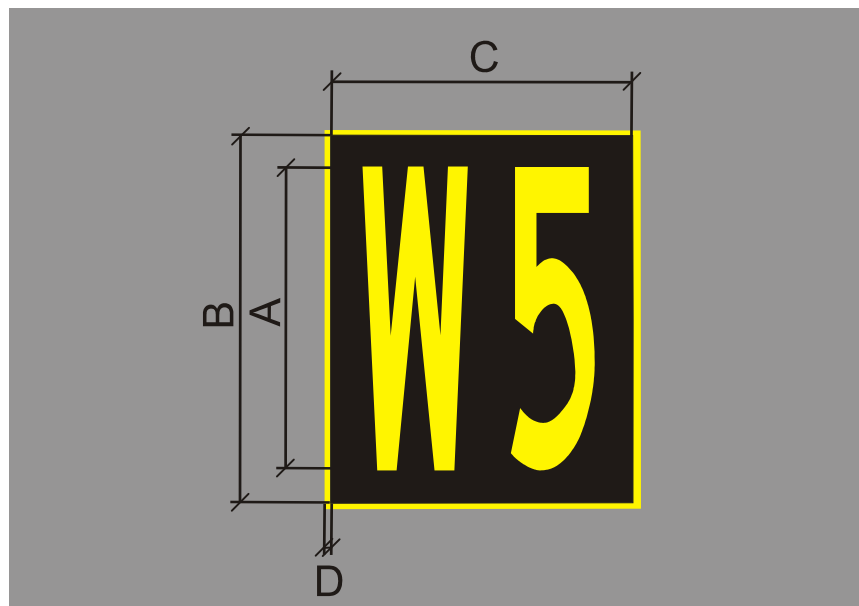
Dimensions	A	B	C	D
	<i>2,0 m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



3.6.2. Option 2 – Indication of location

Color	Charakters	Background	Border
	<i>Yellow</i>	<i>Black</i>	<i>Yellow</i>

Dimensions	A	B	C	D
	<i>2,0 m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



3.7. APRON AND TAXIWAY EDGE

Apron and taxiway edge lines are used to delineate the boundary of a taxiway or apron area where the edge of the full strength pavement cannot be easily discerned, or when a low strength shoulder adjoins the full strength pavement.

Color	Edgeline
	<i>Yellow</i>

Dimensions	A	B
	<i>0,15 m</i>	<i>0,15 m</i>



3.8. STAND IDENTIFICATION TO PARKING STAND

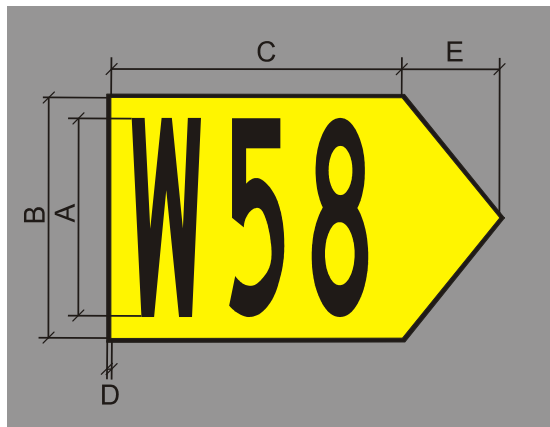
3.8.1. Option 1

This marking assists the pilot of an approaching aircraft to identify the appropriate parking stand, prior to initiating the turn.

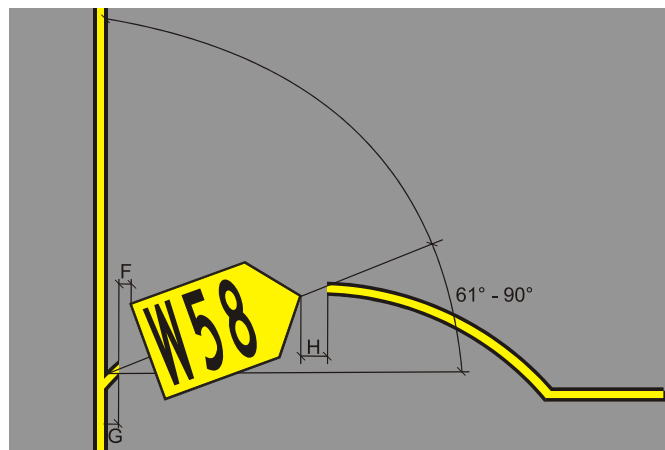
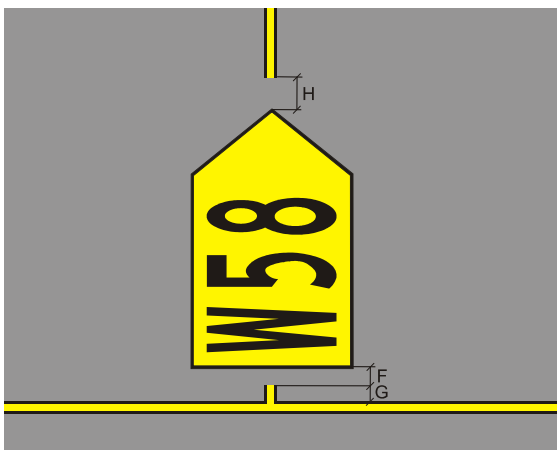
A stand identification marking is an information marking which indicates direction and destination. Option 1 shall be used for stand lead in lines at an angle of 61° to 90° to the taxilane / taxiway.

Color	Charakters	Background	Border
	<i>Black</i>	<i>Yellow</i>	<i>Black</i>

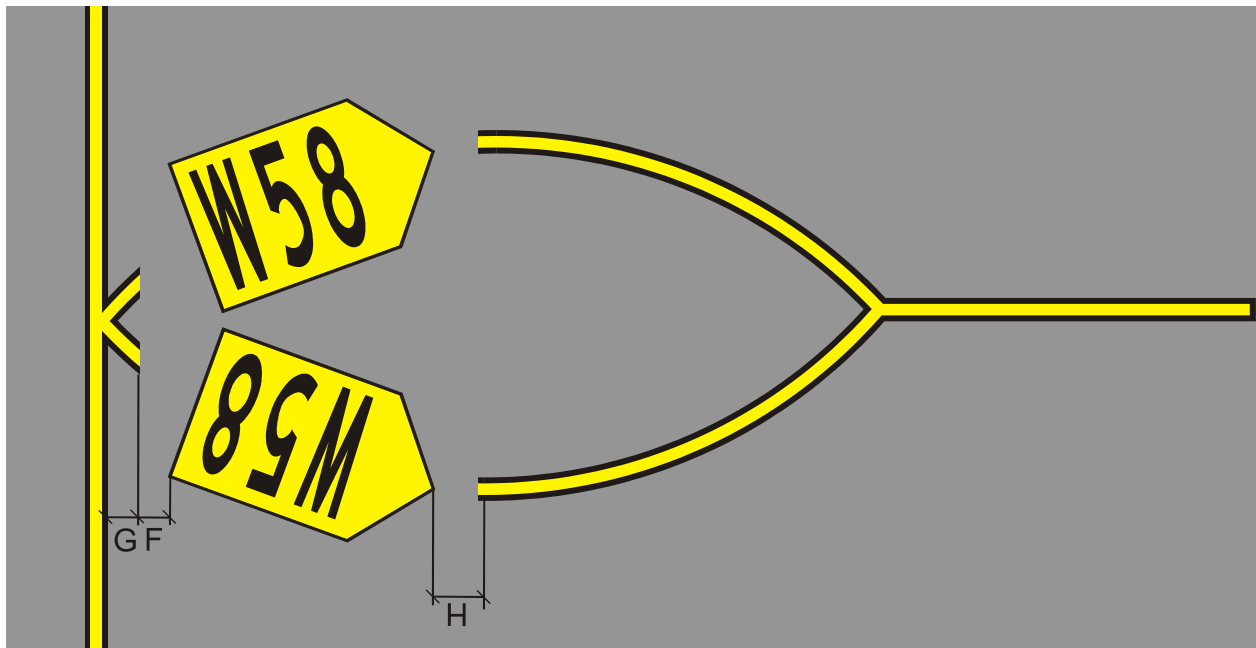
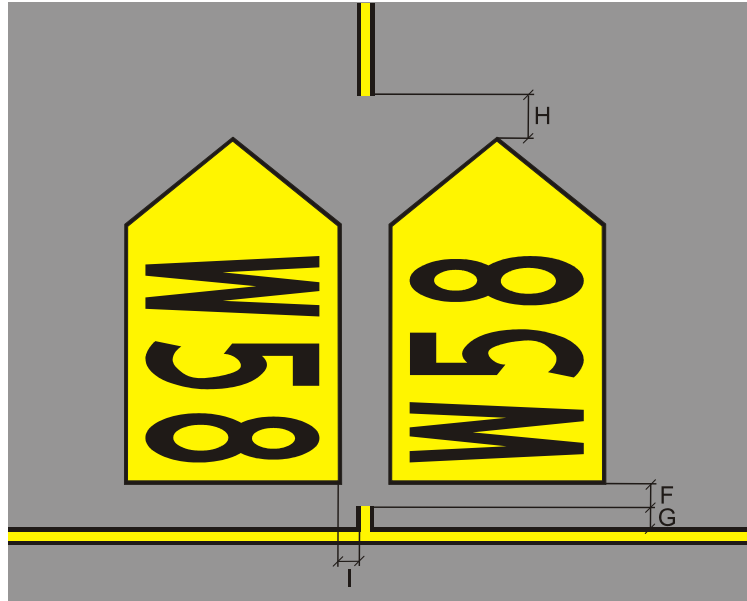
Dimensions	A	B	C	D	E
	<i>2,0 m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>	<i>1,0 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>	<i>2,0 m</i>



Dimensions	F	G	H
	<i>0,5 m</i>	<i>0,5m min.</i>	<i>1,0 m</i>



Dimensions	<i>F</i>	<i>G</i>	<i>H</i>	<i>I</i>
	0,5 m	0,5m min.	1,0 m	0,3 m



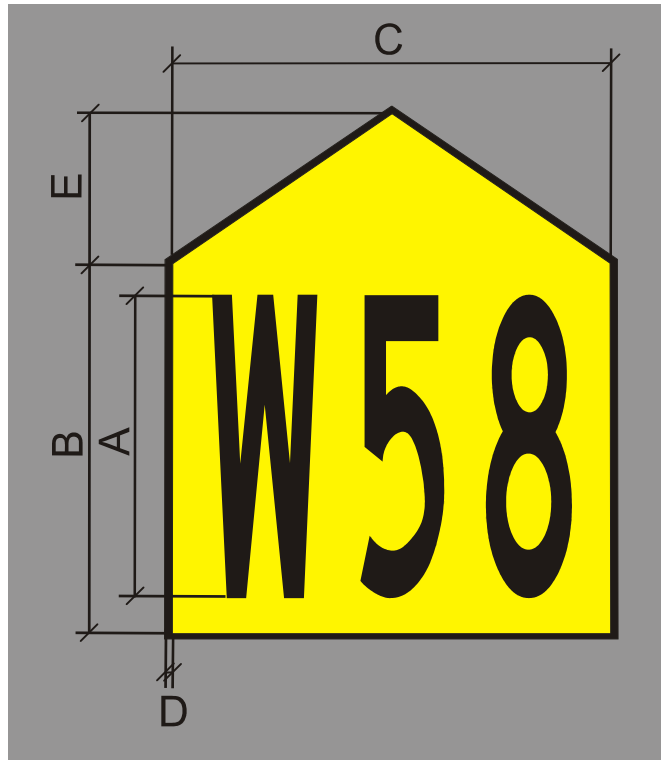
3.8.2. Option 2

This marking assists the pilot of an approaching aircraft to identify the appropriate parking stand, prior to initiating the turn.

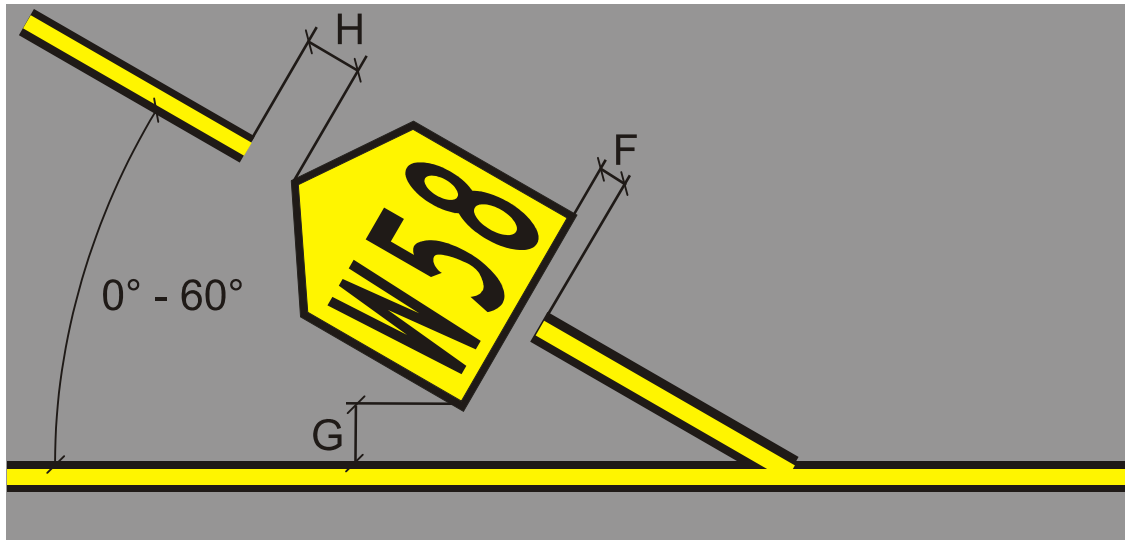
A stand identification marking is an information marking which indicates direction and destination. Option 2 shall be used for stand lead in lines at an angle of 0° to 60° to the taxilane / taxiway.

Color	Charakters	Background	Border
	<i>Black</i>	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B	C	D	E
	<i>2,0 m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>	<i>1,0 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>	<i>2,0 m</i>



Dimensions	<i>F</i>	<i>G</i>	<i>H</i>
	0,5 m	0,5m min.	1,0 m

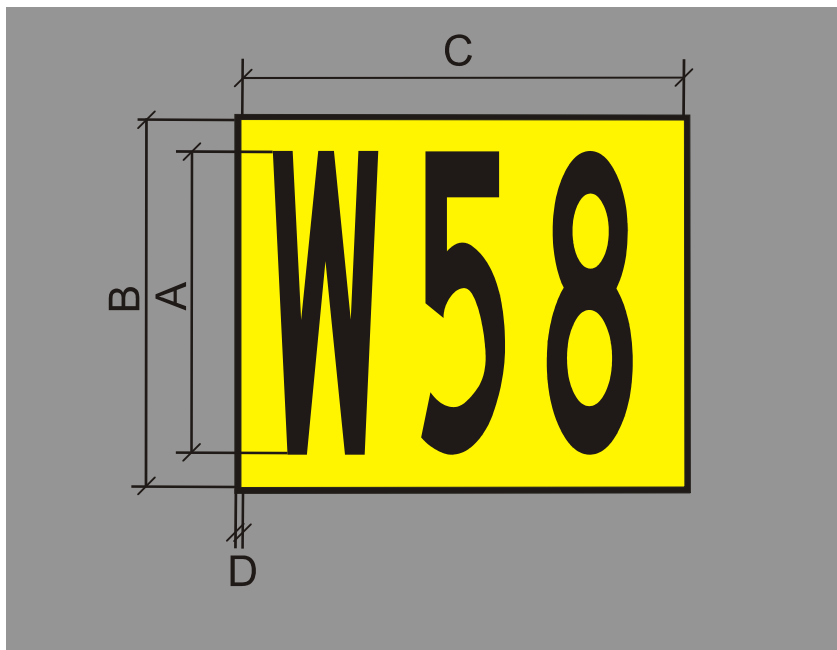


3.8.3. Option 3

This marking is similar to those illustrated in the ICAO Aerodrome design manual. The parking stand number is displayed on the lead in line.

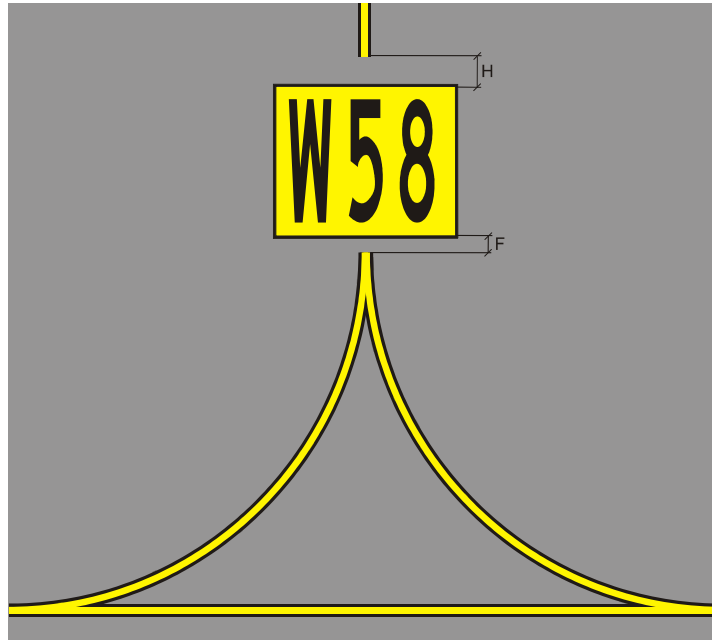
Color	Charakters	Background	Border
	<i>Black</i>	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B	C	D
	<i>2,0 m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



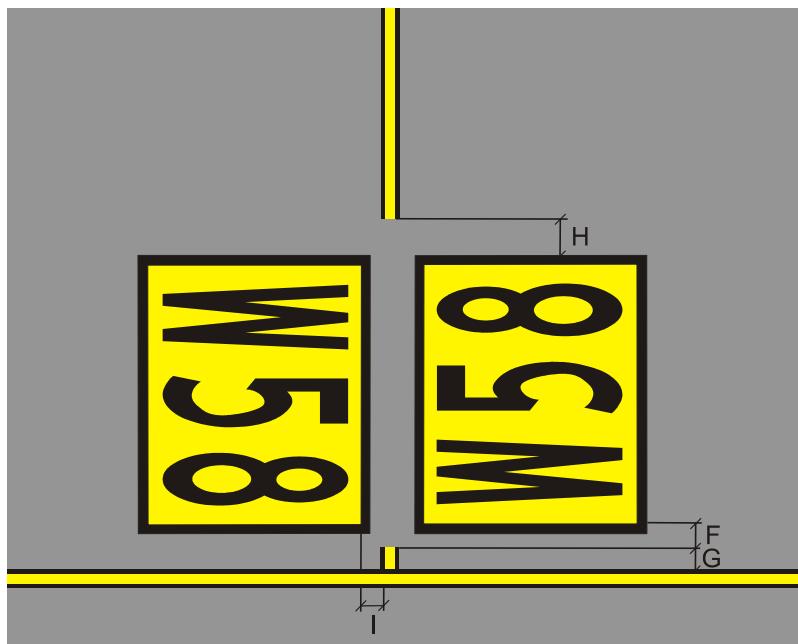
Option 3a

Dimensions	F	H
	0,5 m	1,0 m



Option 3b

Dimensions	F	G	H	I
	0,5 m	0,5 m	1,0 m	0,3 m

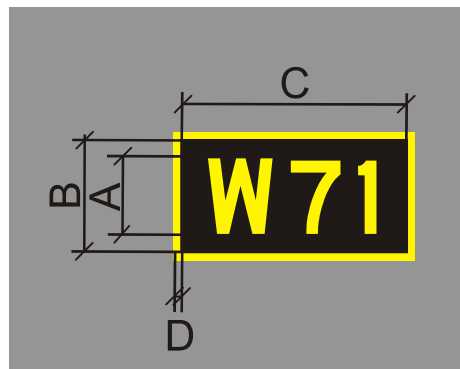


3.9. STAND IDENTIFICATION ON PARKING STAND

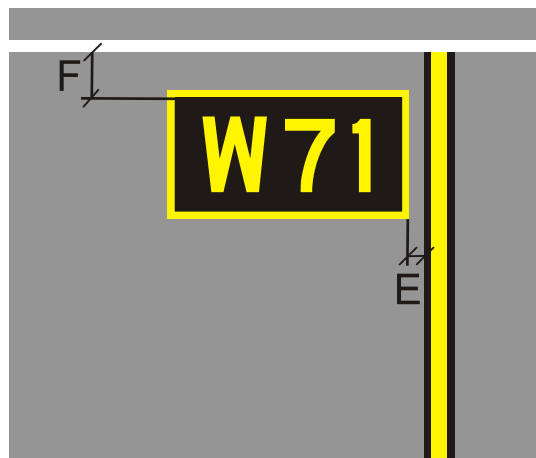
To indicate the location for pilots and apron staff a stand identification as displayed below, shall be established on a parking stand. The characters should be in accordance to ICAO Annex 14, Volume 1, Appendix 4.

Color	Charakters	Background	Border
	<i>Yellow</i>	<i>Black</i>	<i>Yellow</i>

Dimensions	A	B	C	D
	<i>0,5 m</i>	<i>0,75 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>1,0 m</i>	<i>1,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



Dimensions	E	F
	<i>0,3 m</i>	<i>0,5 m</i>

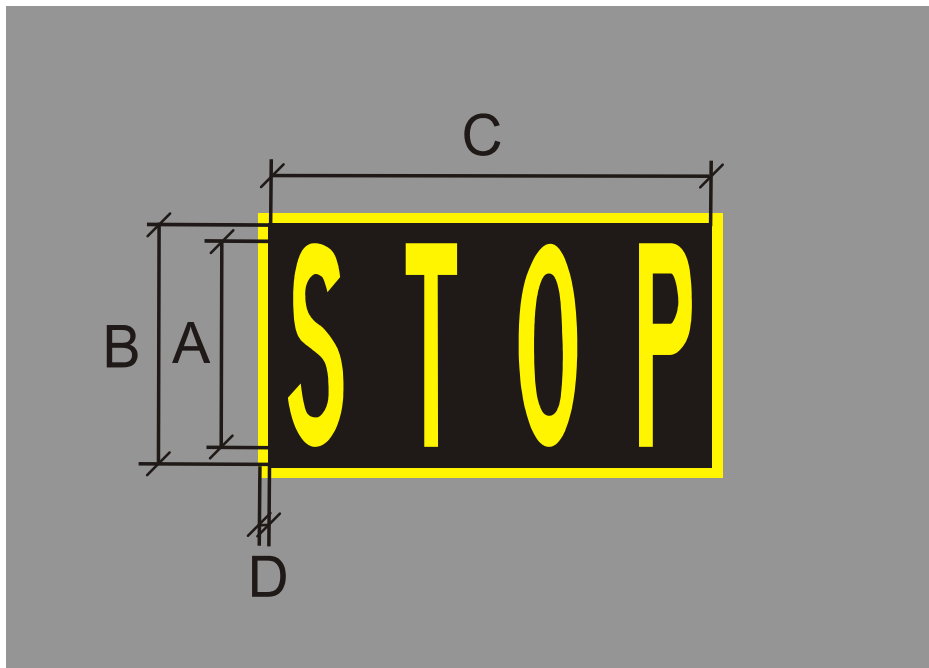


3.10. BASIC AIRCRAFT STOP LINE

This marking should be used where an aircraft is positioned on a stand without marshalling, where the transverse bar indicates the cockpit stop position. The marking should be suitable for the critical aircraft (usually the largest aircraft) which will be use the stand. The same markings are used on either a power through position or a power in, push out position. The dimension X is believed sufficient to ensure visibility by the pilot in command.

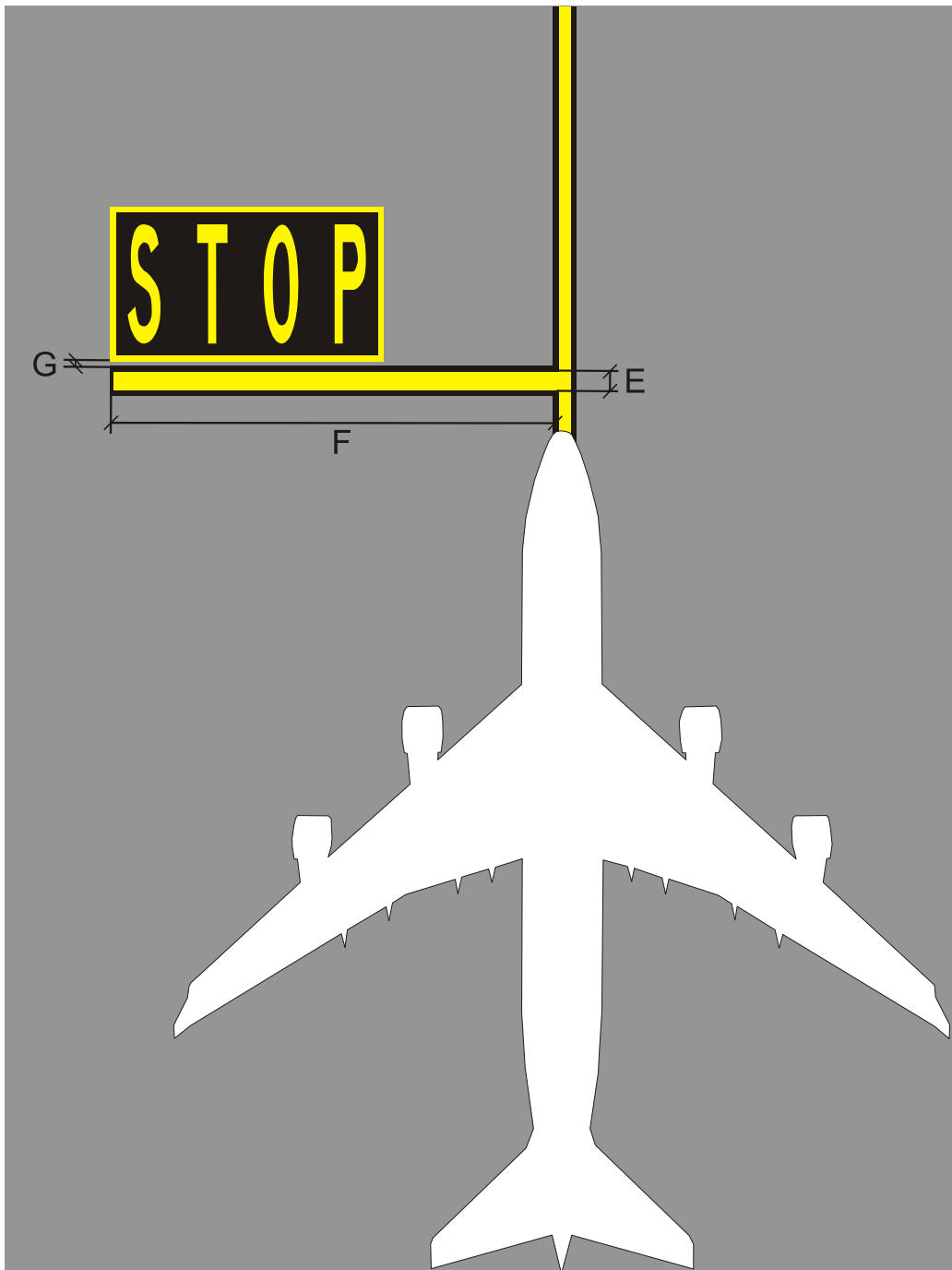
Color	Charakters	Background	Border
	<i>Yellow</i>	<i>Black</i>	<i>Yellow</i>

Dimensions	A	B	C	D
	<i>2,0m</i>	<i>2,5 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



Color	Stopline	Border
	Yellow	Black

Dimensions	ICAO Code Letter	E	F	C
	C	0,3 m	11,0 m	0,1 m
	D	0,3 m	16,0 m	0,1 m
	E	0,3 m	16,0 m	0,1 m



3.11. MULTIPLE AIRCRAFT STOP LINE

These marking should be used where an aircraft is positioned without a marshaller, but in association with an air bridge, or where fuel hydrant positions are critical, so that different cockpit stop positions are necessary for the different aircraft types to be accommodated. The dimensions of the markings are shown on the preceding page, including the dimensions F, which varies according to the maximum aircraft size to be accommodated.

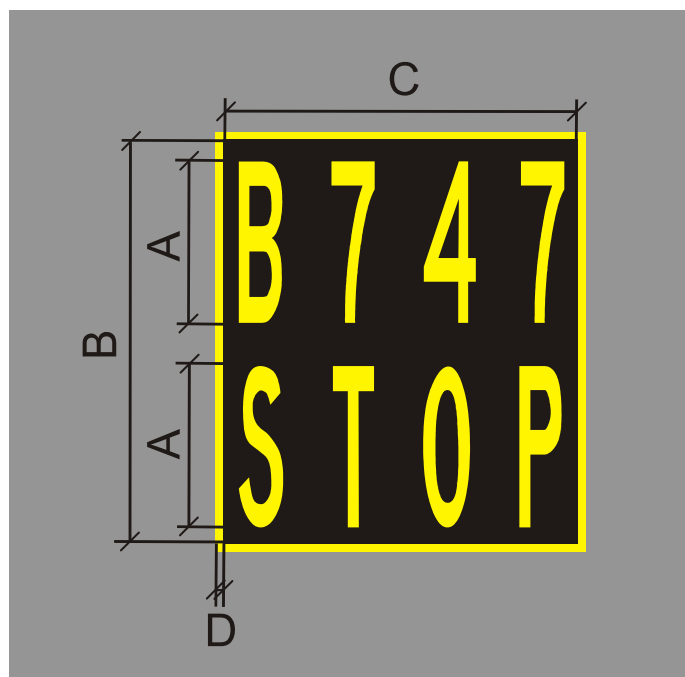
Some airport operators may prefer to mark each of the different stop positions with a letter or a number (e.g. A, B or 1, 2), rather than an aircraft type. In this case the control tower would inform the pilot which stop line should be used.

The word STOP shown in the illustration on the facing page may be regarded as optional, and would be omitted where marking for different aircraft sizes would be to close together.

These markings may be supplemented by some form of Visual Docking Guidance System for the use of pilots. This handbook does not set out to provide information on such systems.

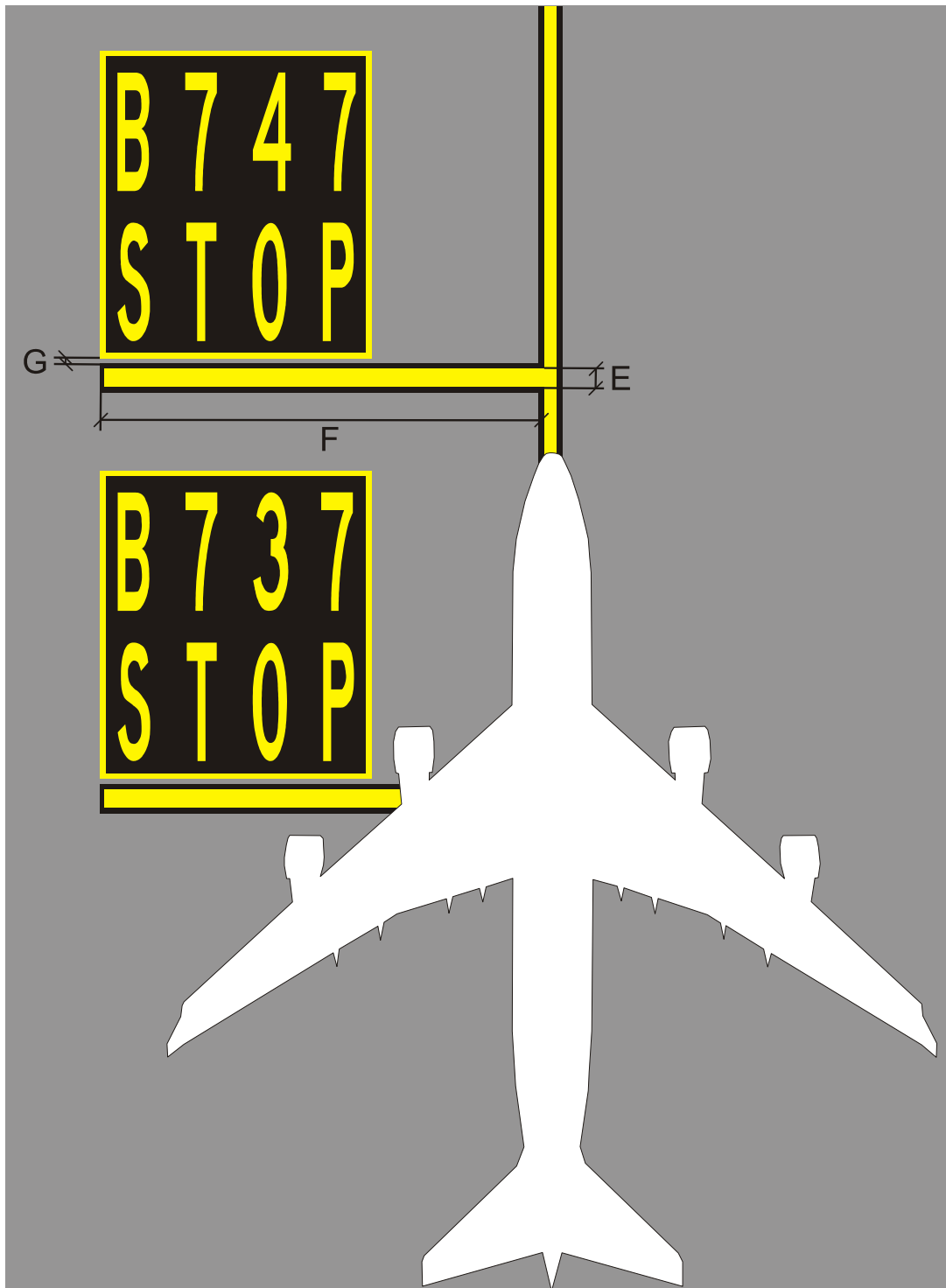
Color	Charakters	Background	Border
	<i>Yellow</i>	<i>Black</i>	<i>Yellow</i>

Dimensions	A	B	C	D
	<i>2,0m</i>	<i>5,0 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>4,0 m</i>	<i>9,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



Color	Stopsline	Border
	Yellow	Black

Dimensions	ICAO Code Letter	E	F	C
	C	0,3 m	11,0 m	0,1 m
	D	0,3 m	16,0 m	0,1 m
	E	0,3 m	16,0 m	0,1 m

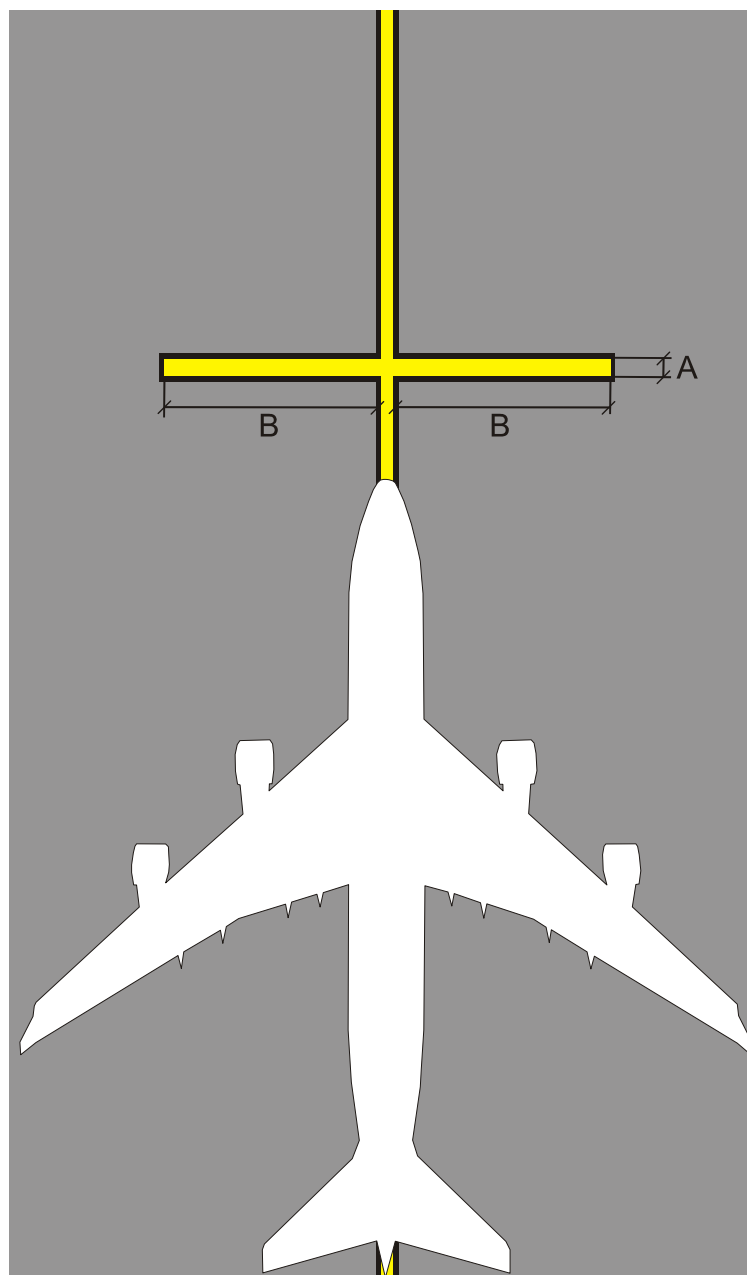


3.12. BASIC MARSHALLER AND TOWING STOP LINE

The marking should be used where an aircraft, either under power or tow, is positioned on stand by a marshaller. The transverse bar indicates the nose wheel stop position to the marshaller. The same marking is used on either a power through position or a power in, push out position. The design of the marking is dependent on the critical aircraft for the stand.

Color	Centreline	Borderline
	Yellow	Black

Dimensions	A	B
	0,2 m min.	1,0 m



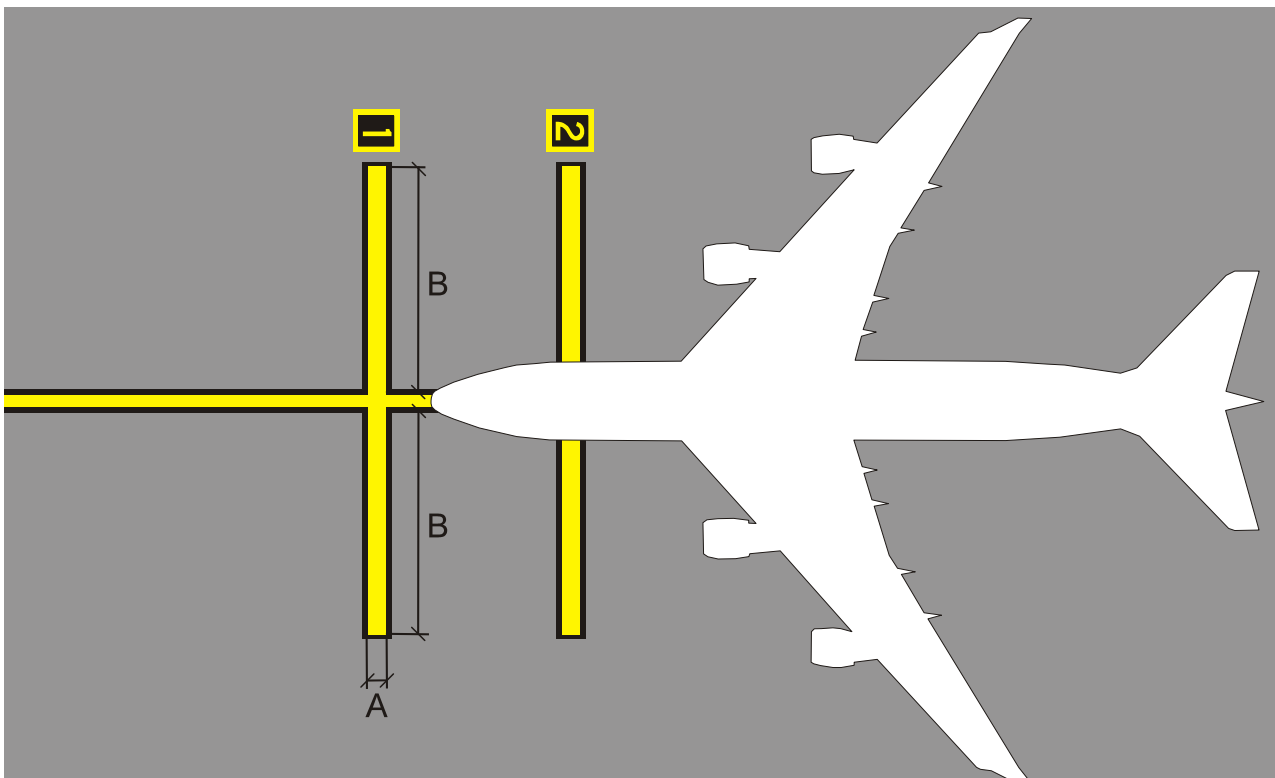
3.13. MULTIPLE MARSHALLER AND TOWING STOP LINE

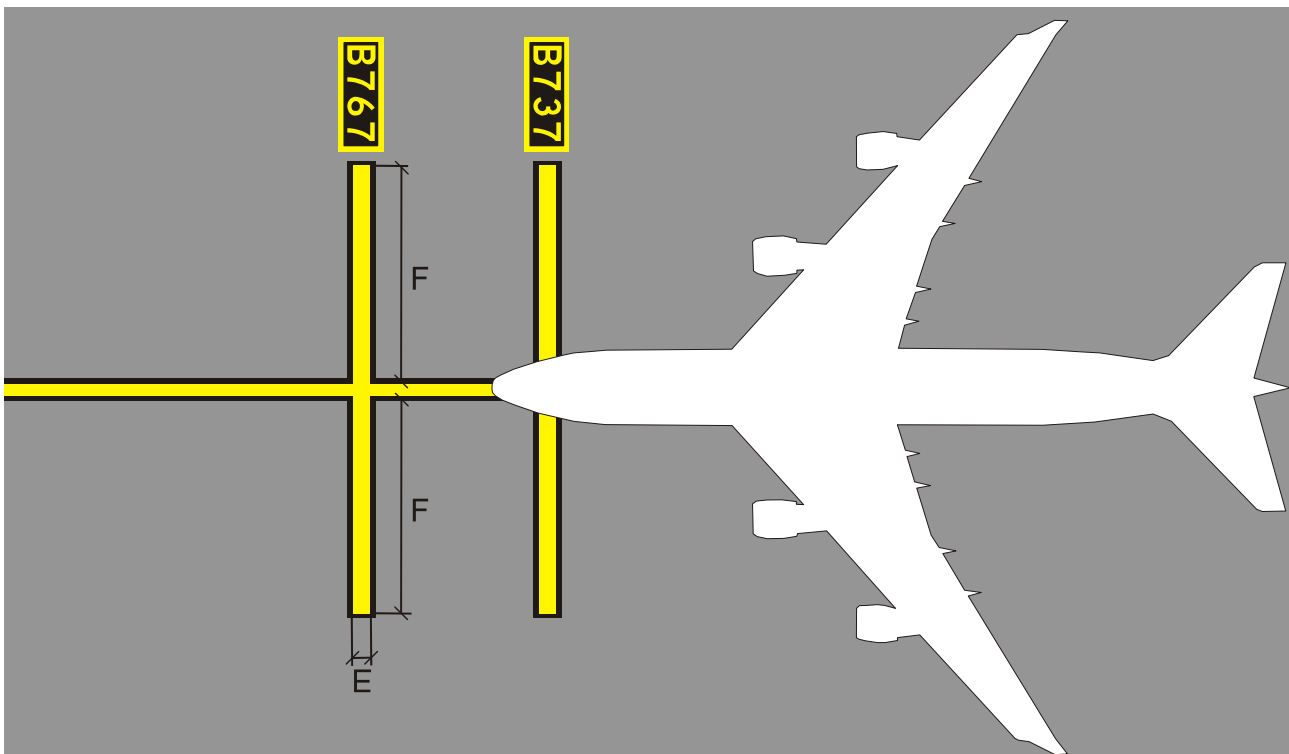
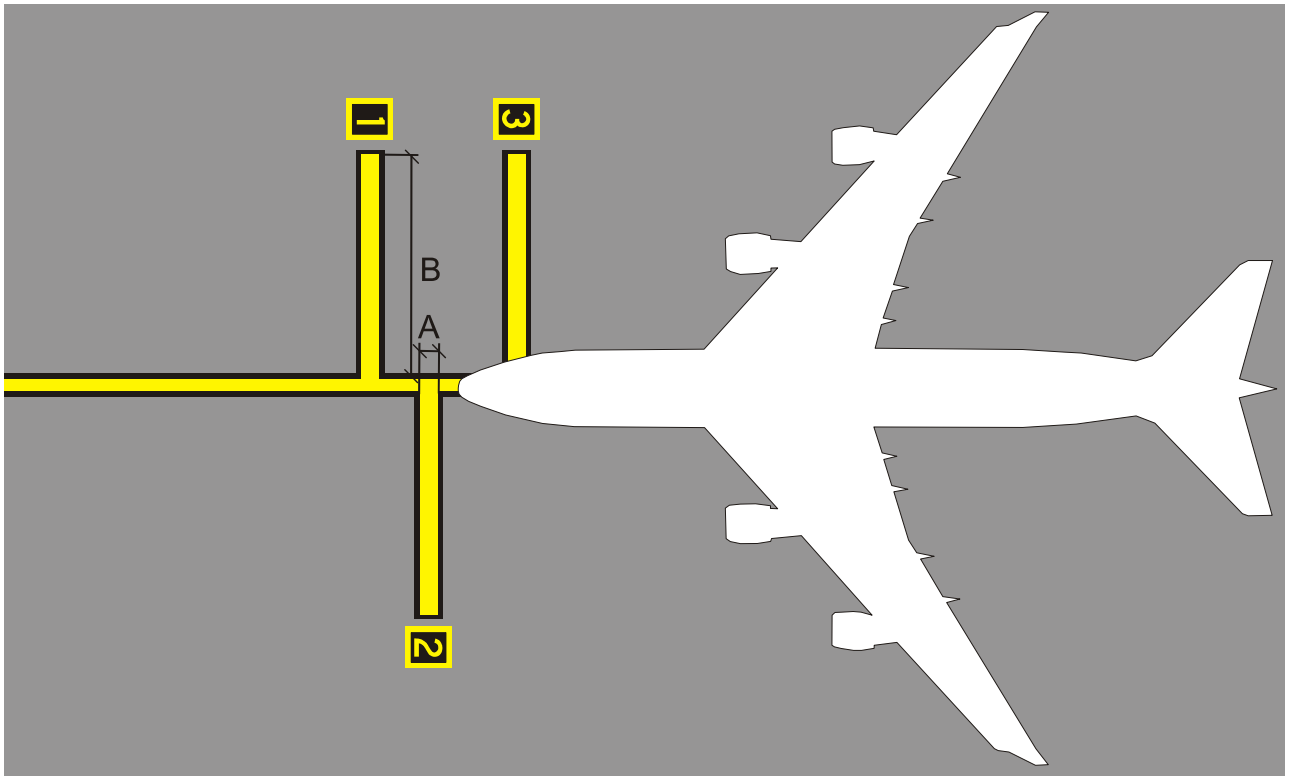
The markings opposite should be used where an aircraft, either under power or tow, is positioned on stand by a marshaller, but in association with an air bridge or where fuel hydrant positions are critical, so that different nose wheel stop positions are needed for the different aircraft types to be accommodated. The dimensions of the markings should be sufficient to be readily visible to the marshaller or tug driver. Characters should be a minimum of 50cm high, it is suggested. The number and position of the markings are determined by the number and type of aircraft using the stand.

Some airport operators may prefer to mark each of the different stop positions with a letter or a number (e.g. A, B or 1, 2), rather than an aircraft type. In this case the marshaller should be informed as to which stop position should be used.

Color	Centreline	Borderline	STOP line
	Yellow	Black	Yellow

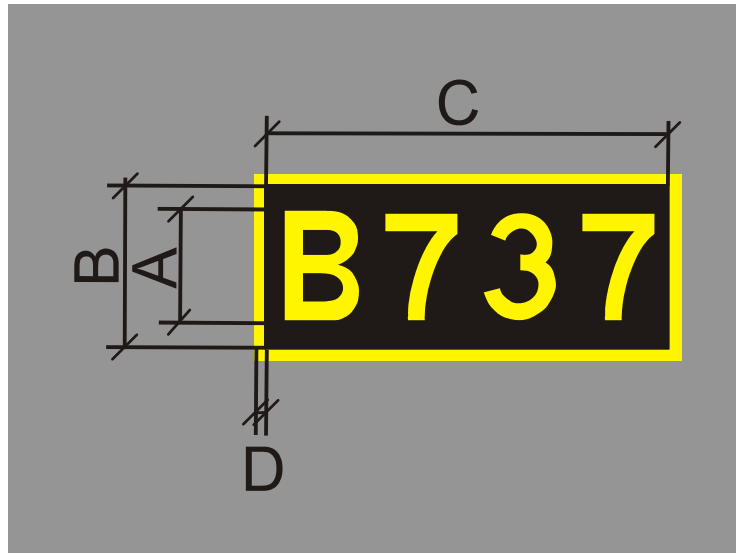
Dimensions	A	B
	0,2 m min.	1,0 m





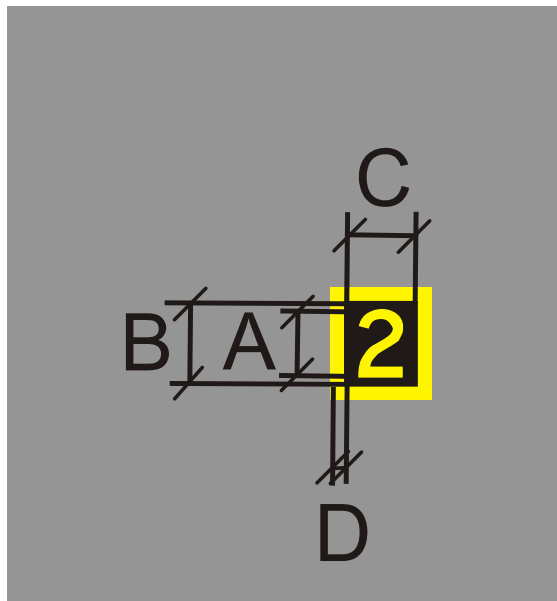
Color	Centreline	Borderline
	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B	C	D
	<i>0,5 m</i>	<i>0,75 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>1,0 m</i>	<i>1,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>



Color	Centreline	Borderline
	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B	C	D
	<i>0,5 m</i>	<i>0,75 m</i>	<i>Acc. to character width</i>	<i>0,1 m</i>
	<i>1,0 m</i>	<i>1,5 m</i>	<i>Acc. to character width</i>	<i>0,1m</i>

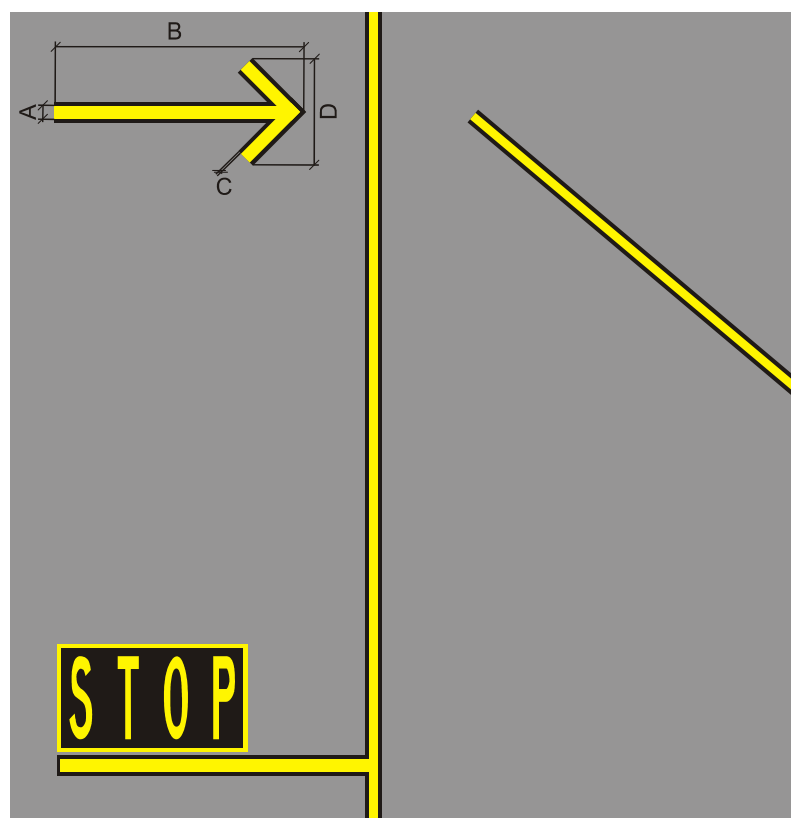


3.14. POWER OUT TURNBAR AND ALIGNMENT LINE

The turn bar is used to advise the pilot of the position where the aircraft should commence turning when it leaves the stand. The alignment line allows the pilot of a widebody aircraft to align the aircraft on the centre line prior to bringing the aircraft to a stop or when the aircraft is under power, prior to leaving the stand.

Color	Centreline	Borderline
	<i>Yellow</i>	<i>Black</i>

Dimensions	A	B	C	D
	<i>0,2 m min.</i>	<i>6,0 m</i>	<i>0,1 m</i>	<i>2,0 m min.</i>

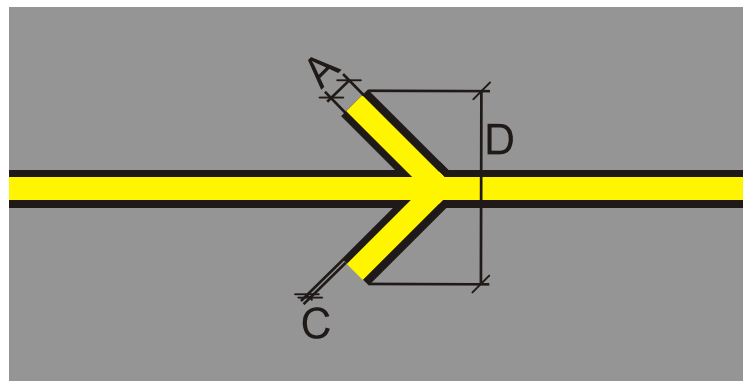


3.15. ONE WAY ARROW MARKING

Where it is intended that an aircraft proceed in one direction only, arrows pointing in the direction to be followed should be added as part of the lead-in and lead-out lines.

Color	Arrow line	Borderline
	<i>Yellow</i>	<i>Black</i>

Dimensions	A	C	D
	<i>0,2 m min.</i>	<i>0,1 m</i>	<i>2,0 m min</i>



4. APRON MARKINGS FOR VEHICLES

4.1. BOUNDARY OF RESPONSIBILITY LINE

To display a boundary of responsibility (e.g. Airport – ATC) it is recommended to mark this in red color at a width of not less than 30cm.

When there is insufficient contrast between the marking and the pavement surface, it shall be surrounded by a white borderline.

Color	Line	Borderline
	<i>Red</i>	<i>White</i>

Dimensions	A	B
	<i>0,3 m min.</i>	<i>0,1 m</i>



4.2. STAND SAFETY LINE

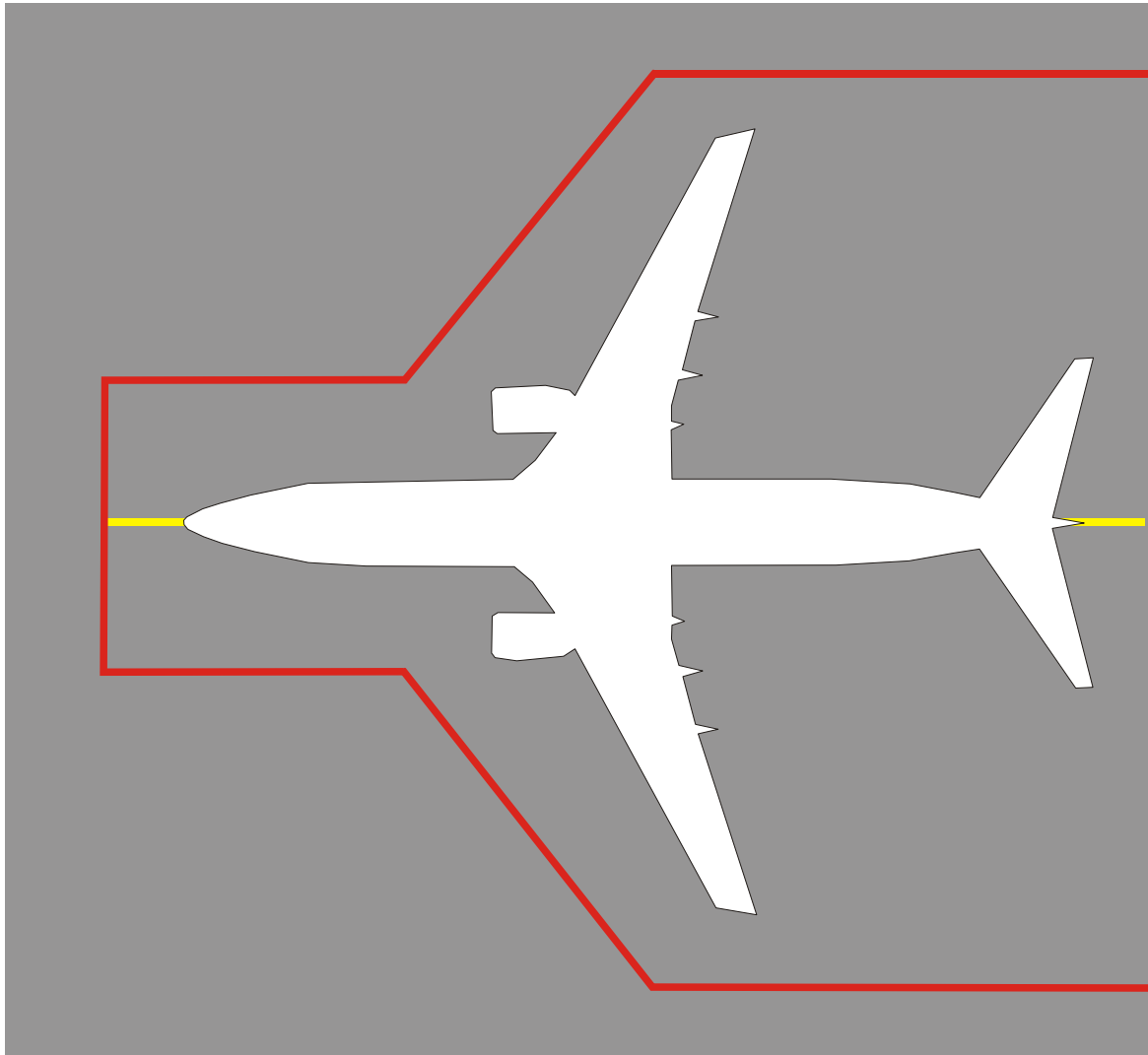
This line depicts the area that must remain free of staff, vehicles and equipment when an aircraft is taxiing (or being towed) into position or has started engines in preparation for departure. Once all engines have been shut down and the area is safe, vehicles may then cross the line to service the aircraft.

The size of this area depends on the type of aircraft using the stand position. The area should be dimensioned to allow for a safety zone around jet engine intakes which must be kept free to avoid suction dangers, Aircraft manufactures give guidance on safety zones required around engines operating on ground idle. A similar safety zone should also be taken into account on stands used by propeller-driven aircraft.

Color	Line	Borderline
	<i>Red</i>	<i>White</i>

Dimensions	A	B
	<i>0,2 m min.</i>	<i>0,1 m</i>





4.3. RESTRICTED STAND BY AREA

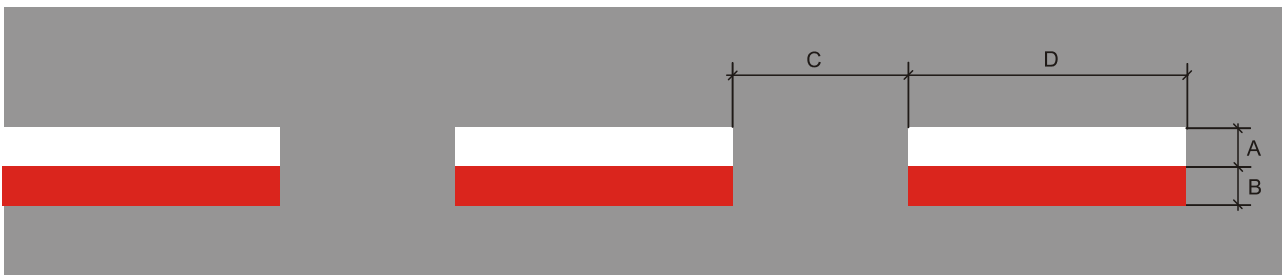
On drive through aircraft parking stand it may be helpful to mark restricted stand by areas. These areas indicate where it is possible to park a vehicle in a safe distance to an in taxiing aircraft.

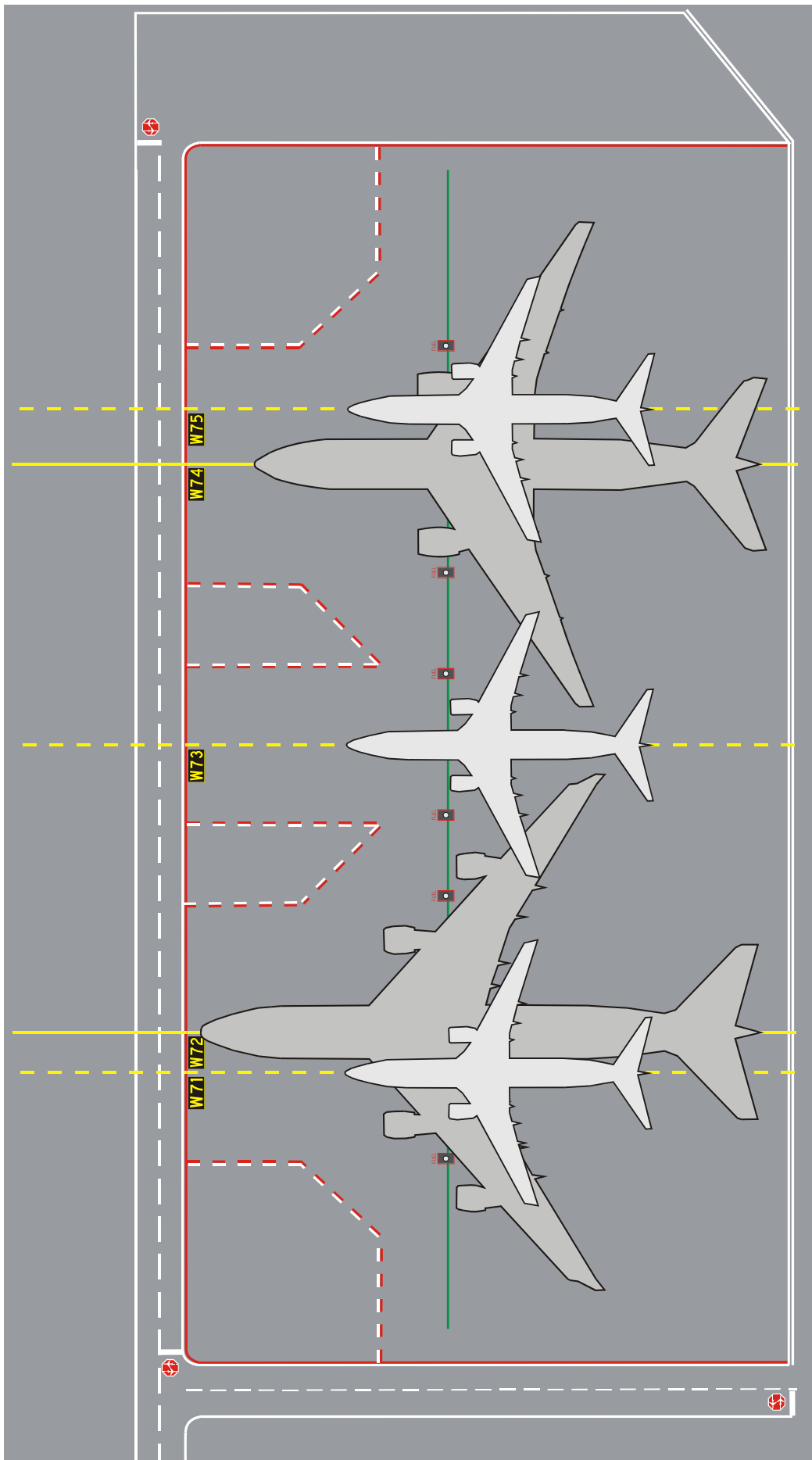
The size of this area depends on the type of aircraft using the stand position. The area should be dimensioned to allow for a safety zone around jet engine intakes which must be kept free to avoid suction dangers. Aircraft manufactures give guidance on safety zones required around engines operating on ground idle. A similar safety zone should also be taken into account on stands used by propeller-driven aircraft.

Prior out taxiing of an aircraft such areas must be completely cleared.

Color	Line
	<i>White - Red</i>

Dimensions	A	B	C	D
	<i>0,15 m min.</i>	<i>0,15 m min.</i>	<i>0,5 m</i>	<i>1 m</i>





4.4. TRACTOR PUSHBACK LINE AND PUSHBACK LIMIT LINE

This line marking is for the use of a tractor (tug) driver when pushing back an aircraft from a stand. It may be used to ensure sufficient obstacle clearance, on stands where clearances around maneuvering aircraft are restricted.

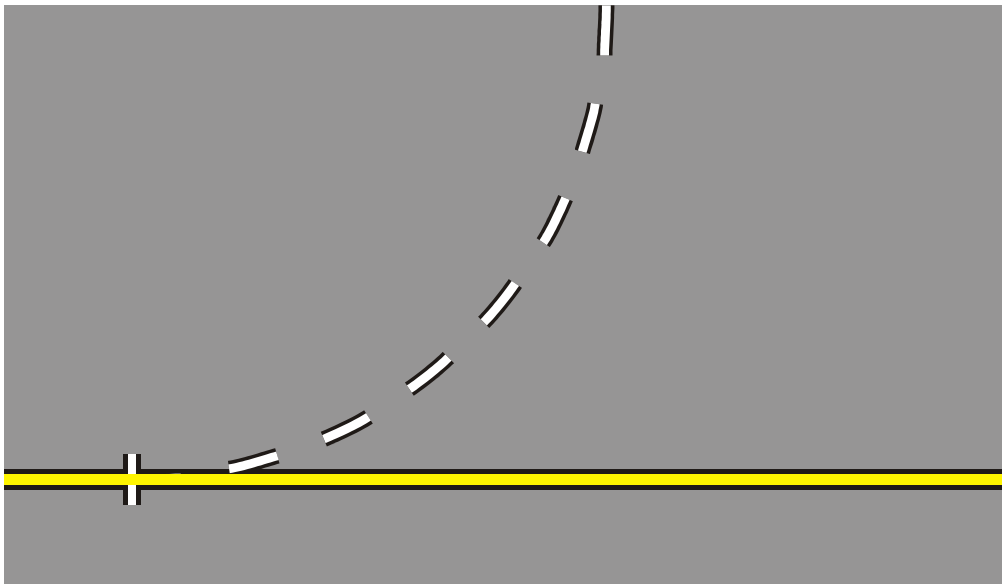
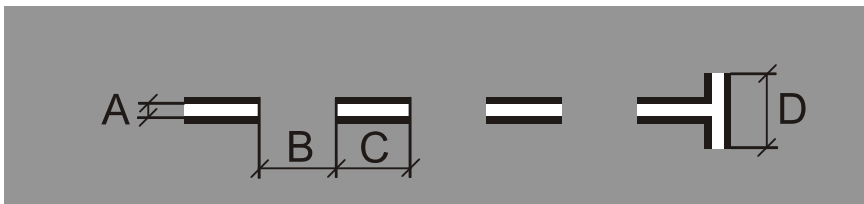
A transverse bar indicates the position where the aircraft (nose wheel) is to be stopped, prior to being disconnected from the tractor (tug). A width of 10cm is considered sufficient to be visible to tractor drivers; greater width may prove distracting to pilots.

The white color used, and the broken line, should avoid confusion with markings for aircraft.

Note: the black border shown is only required on light colored pavement.

Color	Centreline / Bar	Borderline
	<i>White</i>	<i>Black</i>

Dimensions	A	B	C	D
	<i>0,15 m</i>	<i>1,0 m</i>	<i>1,0 m</i>	<i>1,0 m</i>

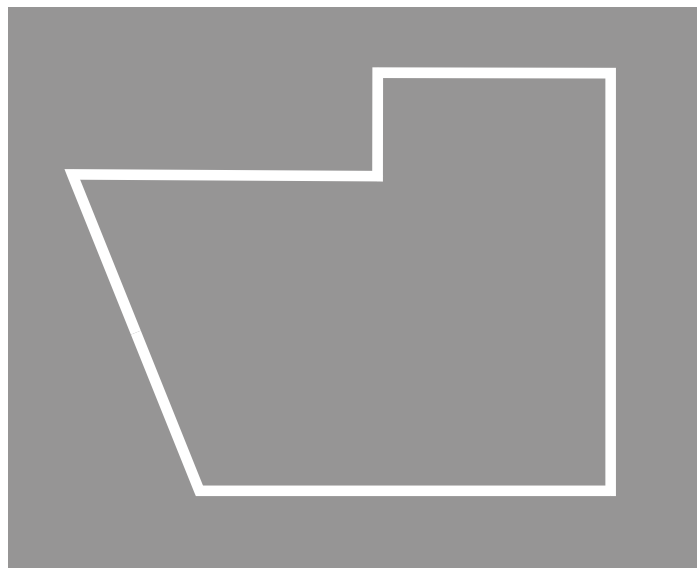


4.5. EQUIPMENT PARKING LINE

This marking is used to delineate the area within which vehicles and equipment can park freely without infringing any stand areas or taxiways, including taxiway strip surfaces.

Color	Line	Borderline
	<i>White</i>	<i>Black</i>

Dimensions	A
	<i>0,15 m</i>

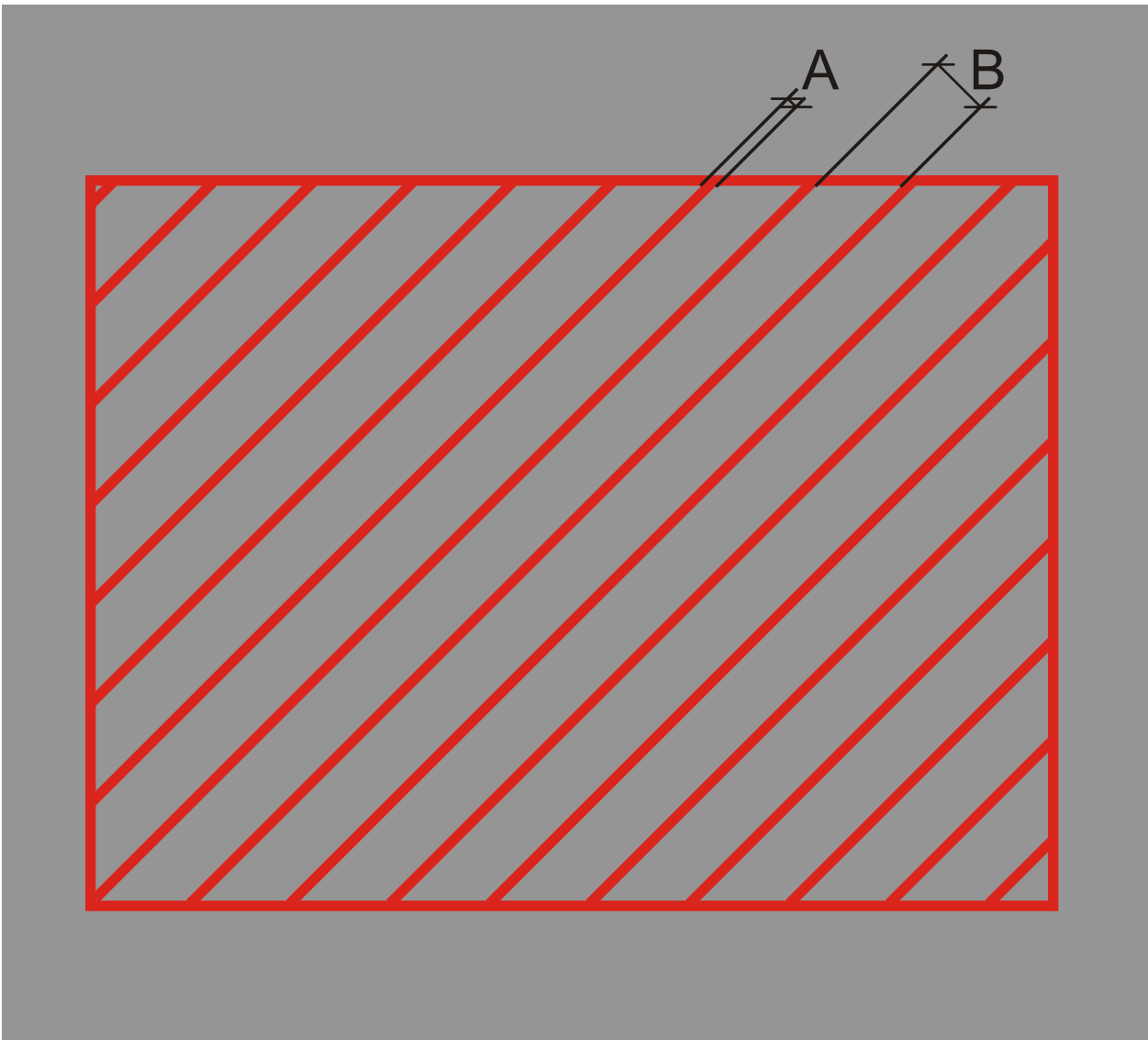


4.6. NO PARKING AREA

A no parking area for vehicles is indicated by red hatchings inside a red border.

Color	Borderline	Shapeline
	<i>Red</i>	<i>Red</i>

Dimensions	A	B
	<i>0,15 m</i>	<i>0,5 - 1,0 m</i>

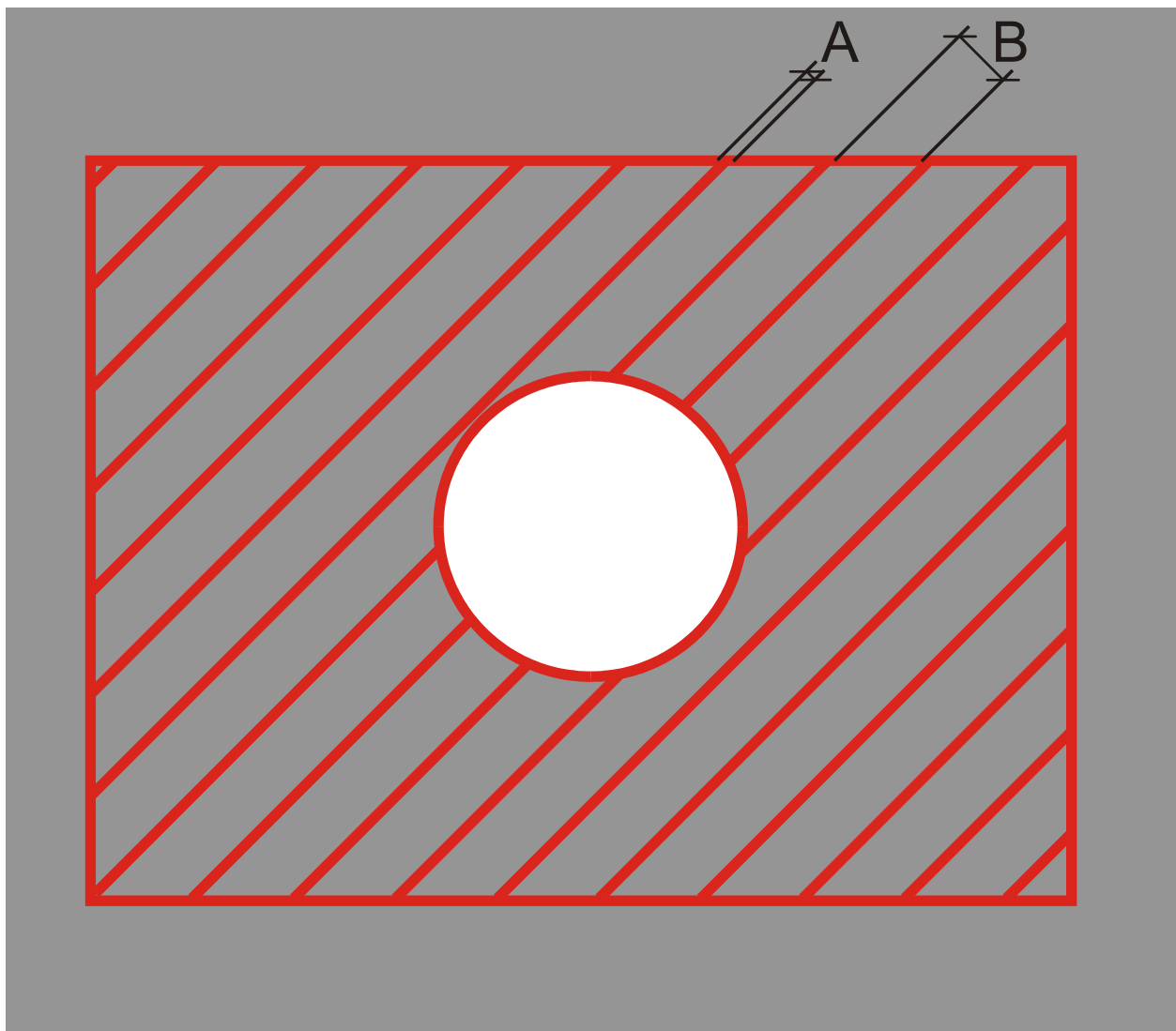


4.7. AIRBRIDGE WHEEL POSITION

The area under an airbridge has to be kept free of vehicles and equipment to ensure the safe operation of the airbridge. Wheel positions are recommended for the airbridge itself, using either a square or circle, to locate the airbridge in a safe position if not in use and to allow aircraft to enter the stand safely.

Color	Borderline	Shapeline	Parking circle
	<i>Red</i>	<i>Red</i>	<i>White</i>

Dimensions	A	B
	<i>0,15 m</i>	<i>0,5 – 1,0 m</i>

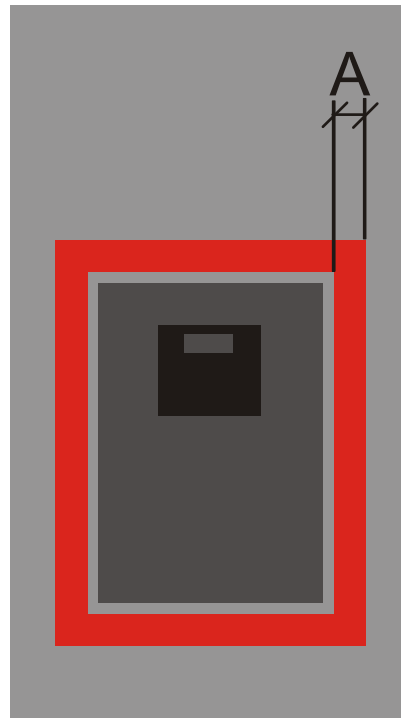


4.8. UNDERGROUND SERVICE

This marking is indicative of the markings recommended for the use with all underground services. The size and shape of the markings depends on the size of the service opening. Clearly marked reflective warning flags should also be placed adjacent to an open and/or lifted underground service. Any above ground projection, such as a lift-up hydrant connection system or cover, should preferably be painted red.

Color	Borderline
	<i>Red</i>

Dimensions	A
	<i>0,2m</i>

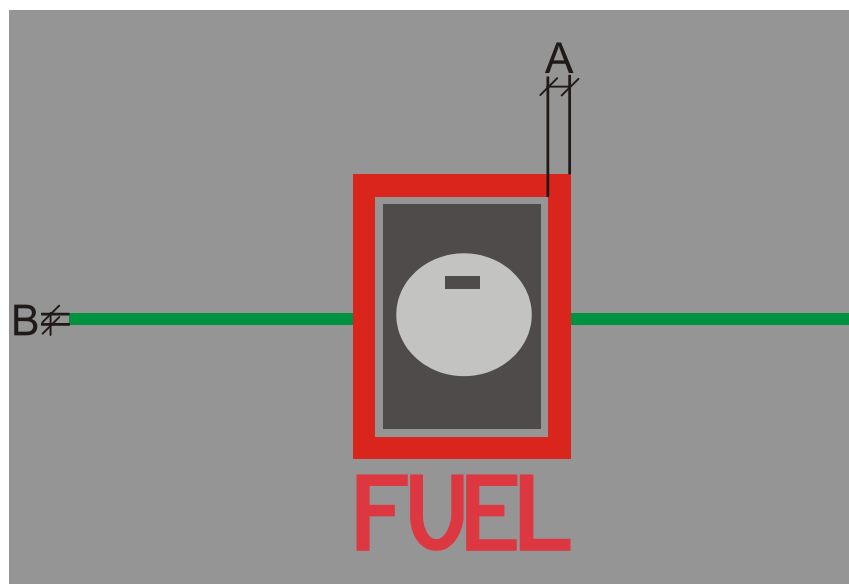


4.9. FUEL HYDRANT

Markings used for fuel hydrants may include the word “FUEL” painted in red. To support locating of underground service during winter contamination a green connection line between underground services can be marked.

Color	Borderline	Connection line	Characters
	<i>Red</i>	<i>Green</i>	<i>Red</i>

Dimensions	A	B	Character height
	<i>0,2 m</i>	<i>0,15 m</i>	<i>0,5m</i>



4.10. SERVICE ROAD

Each lane of a service road should be of a minimum width to accommodate the widest equipment in use at that location e.g. emergency vehicles or ground support equipment. It is important to mark roads on apron areas, to keep vehicle traffic clear of aircraft, taxiways and to minimize the risk to vehicle-to-vehicle accidents.

The side of the road on which vehicles drive and the dimensions of markings should conform to national highway traffic regulations

Color	Line	Borderline
	<i>White</i>	<i>Black</i>

Dimensions	A
	<i>0,15 m</i>

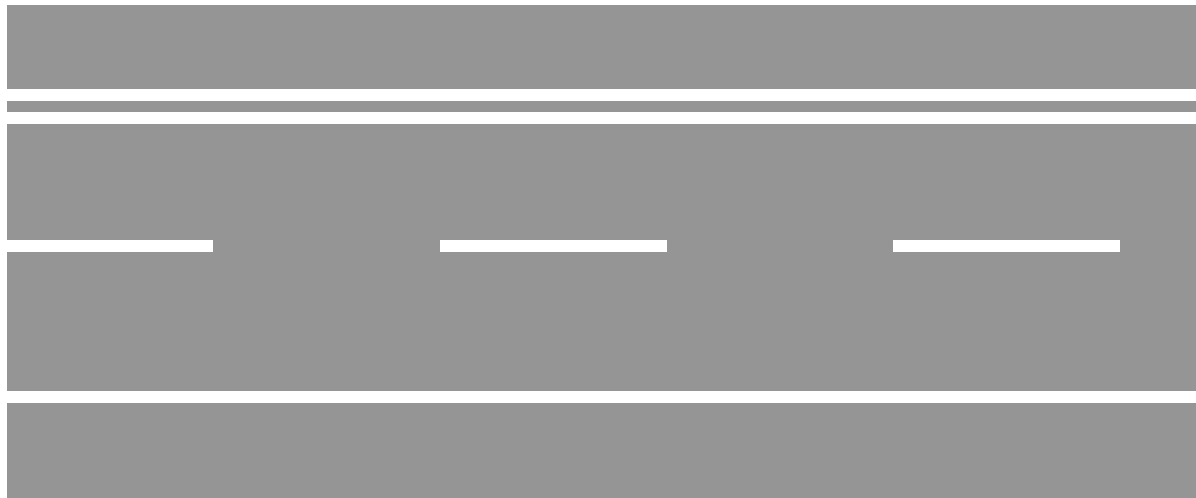


4.11. VEHICLE LIMIT LINE

Where a service road is also the limit of vehicle activity on an apron, this should be shown with a double white line. This indicates "DO NOT CROSS". The reason for the limitation may be varied, although the most common limitation is to provide adequate clearance for adjacent taxiing aircraft.

Color	Line	Border
	<i>White</i>	<i>Black</i>

Dimensions	A	B
	<i>0,15 m</i>	<i>0,15 m</i>

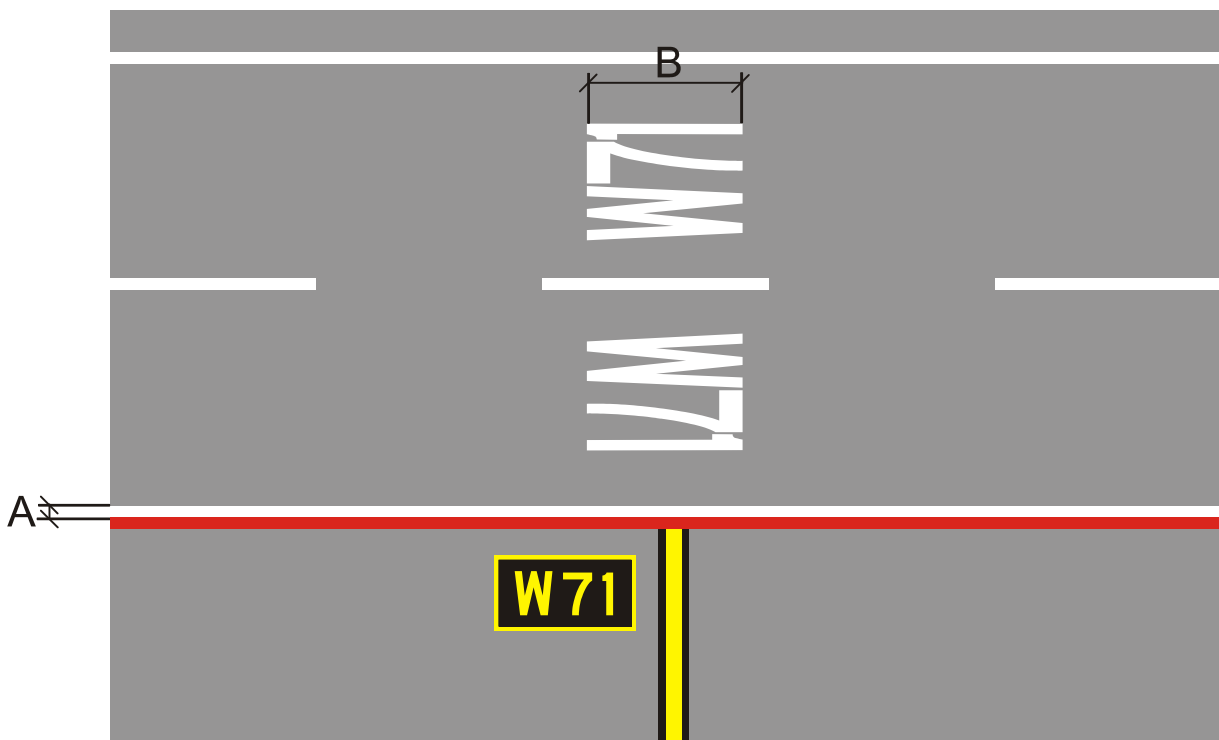


4.12. STAND IDENTIFICATION ON SERVICE ROAD

A stand identification on a service road should be established to support knowledge of a place.

Color	Character	Background
	<i>White</i>	<i>Black</i>

Dimensions	A	B
	<i>0,15 m</i>	<i>2,0 m</i>



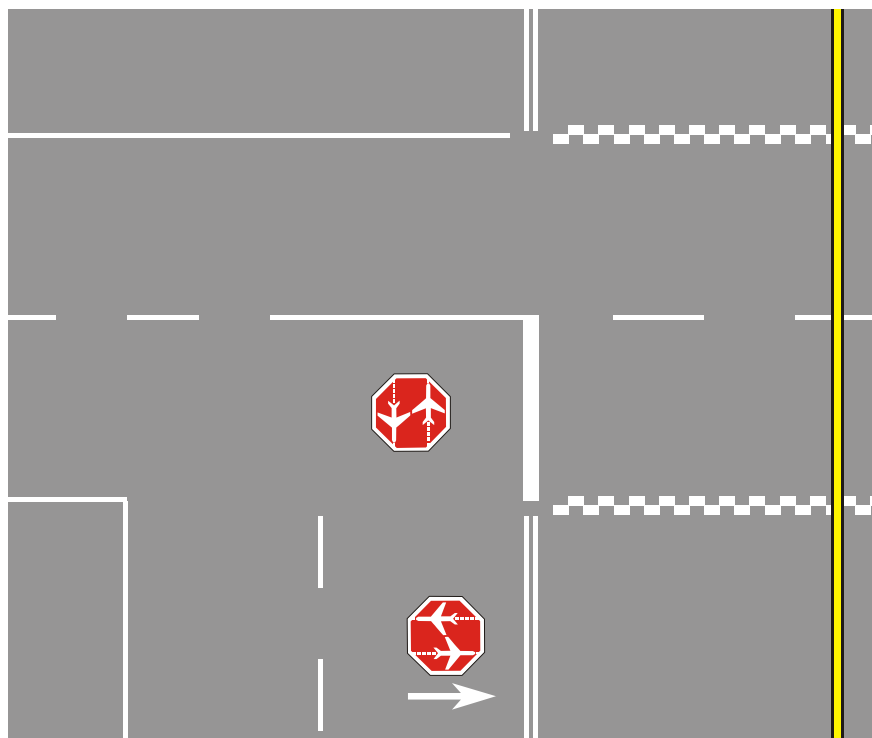
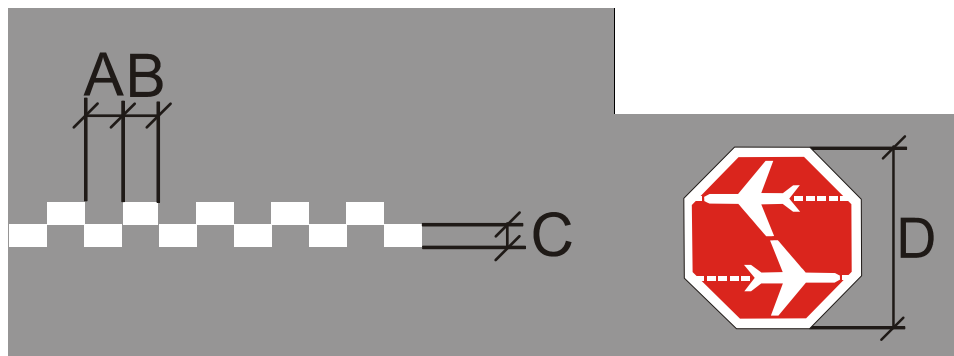
4.13. TAXIWAY AND TAXILANE CROSSING

The drawing below shows the recommended marking where a service road crosses a taxiway or aircraft stand taxilane. A separate sign may indicate that vehicles are only required to stop if an aircraft is in movement on the taxiway.

The vehicle stop line should be located at a safe distance from the taxiway centre line, according to the wingspan of the largest category of aircraft using the taxiway (see ICAO Annex 14, Volume 1).

Color	Line	Background
	White	Black

Dimensions	A	B	C	D
	1,0 m	1,0	0,20m	2,0 m min.



4.14. PEDESTRIAN CROSSING

White is the suggested color for a pedestrian crossing, although color and design should conform to the standard usage roads outside the airport environment.

Color	Stripes	Background
	<i>White</i>	<i>Black</i>



5. APRON SIGNS

Road signage and / or road marking should follow the applicable road traffic regulations in each country. A series of typical signs appear on the following pages.

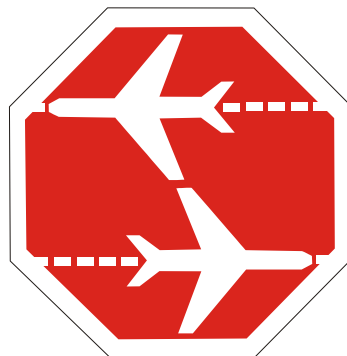
5.1. STAND IDENTIFICATION SIGN FOR AIRCRAFT AT TERMINALS

Such signs should include the aircraft parking stand number and the associated coordinates to inform the pilot.



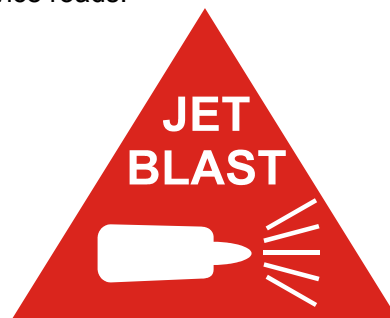
5.2. SIGN "ATTENTION TO CROSSING AIRCRAFT" FOR VEHICLES

This sign and painted marking should be placed at taxiway and taxilane crossings.



5.3. JETBLAST SIGN FOR VEHICLES

It is recommended that jet blast signs or painted markings on the ground should be placed at appropriate locations such as service roads.



5.4. TYPICAL ROAD TRAFFIC SIGNS FOR VEHICLES

Mandatory turn:



Pedestrians ahead



Give way:



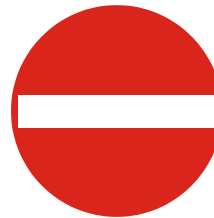
Max. vehicle height



No smoking



No entry



Speed Limit

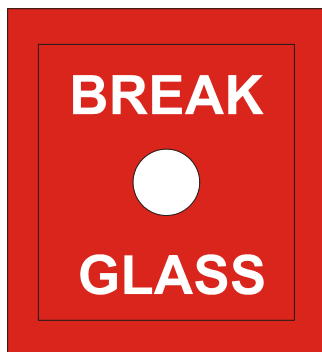


5.5. EMERGENCY SIGNS FOR APRON USERS

Emergency Stop for fuel hydrant system



Alarm Button

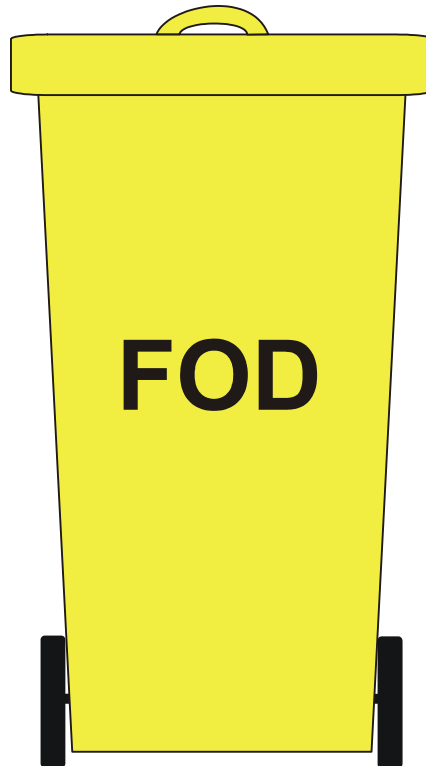


Emergency Telephone



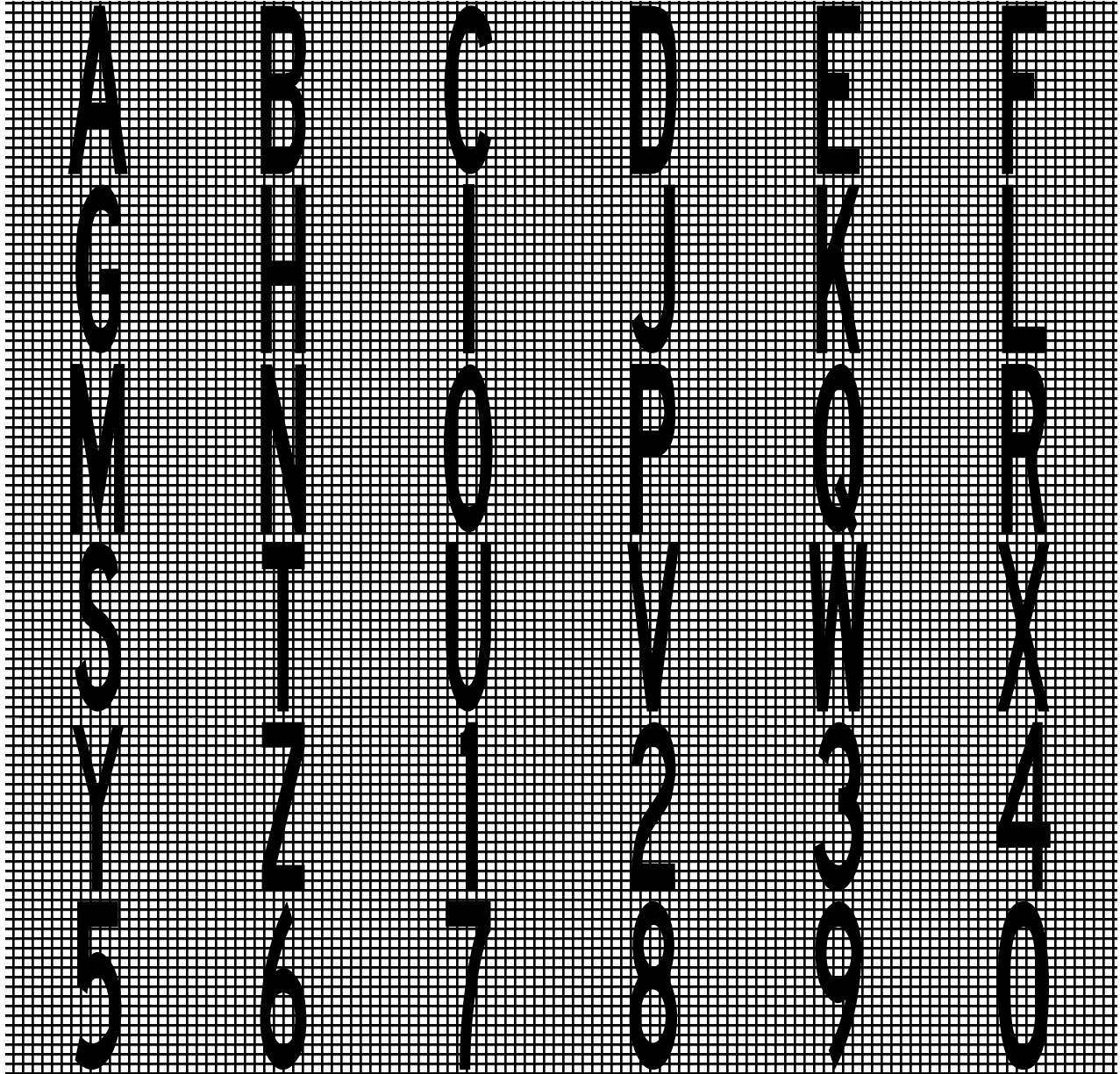
5.6. FOD BIN

Safety on the apron does not end with signs and marking. Foreign Object Damage (FOD) is an ever present hazard to aircraft. Appropriately marked bins can assist in reducing this hazard by reminding staff of their obligation to collect and dispose of FOD correctly. They should be placed on or near each aircraft stand.

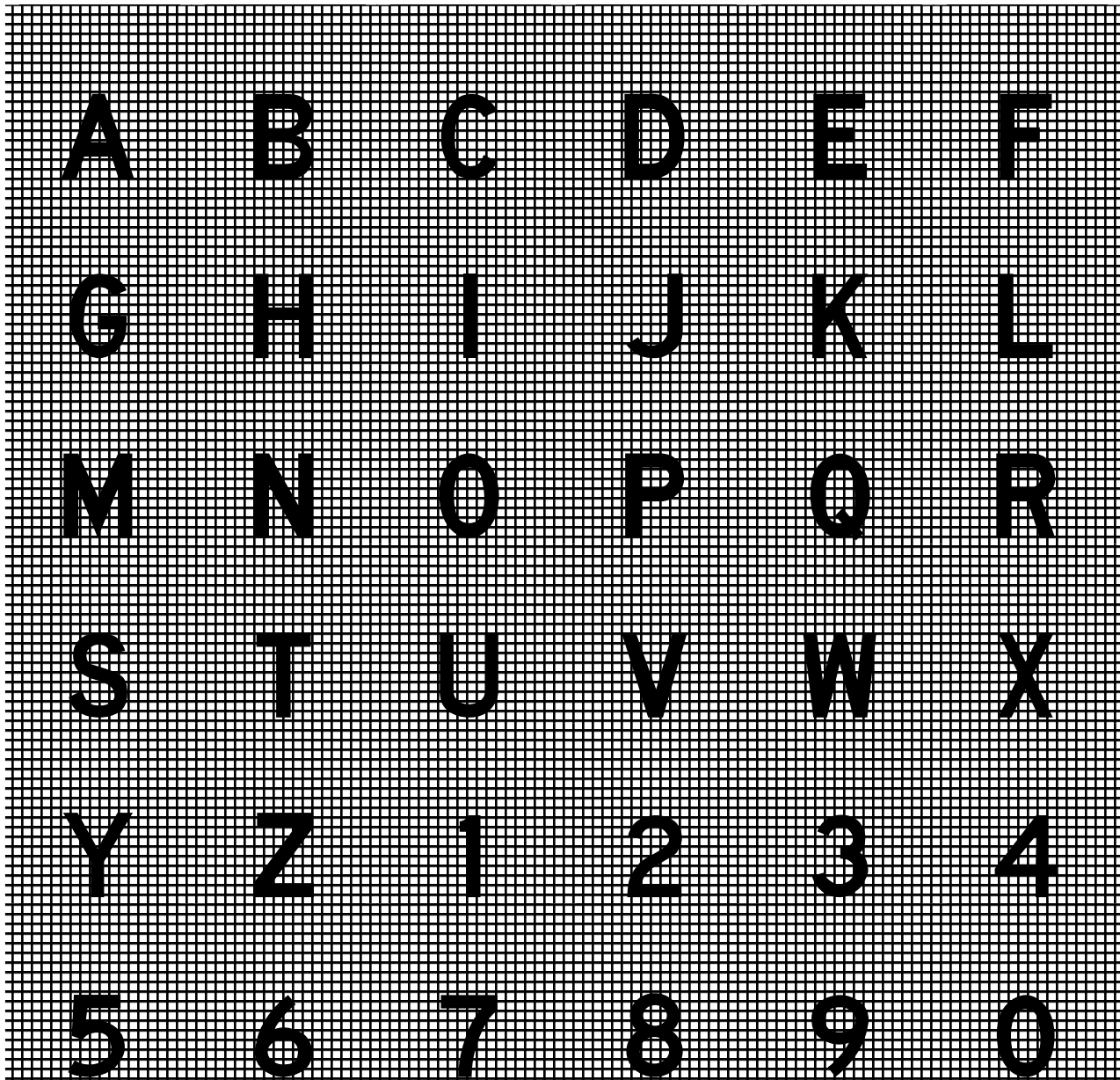


6. FORM AND PROPORTIONS OF LETTERS AND NUMBERS

6.1. CHARACTERS ACC: ICAO ANNEX 14 APPENDIX 3



6.2. CHARACTERS ACC: ICAO ANNEX 14 APPENDIX 4



7. EXAMPLES OF APRON LAYOUTS

