



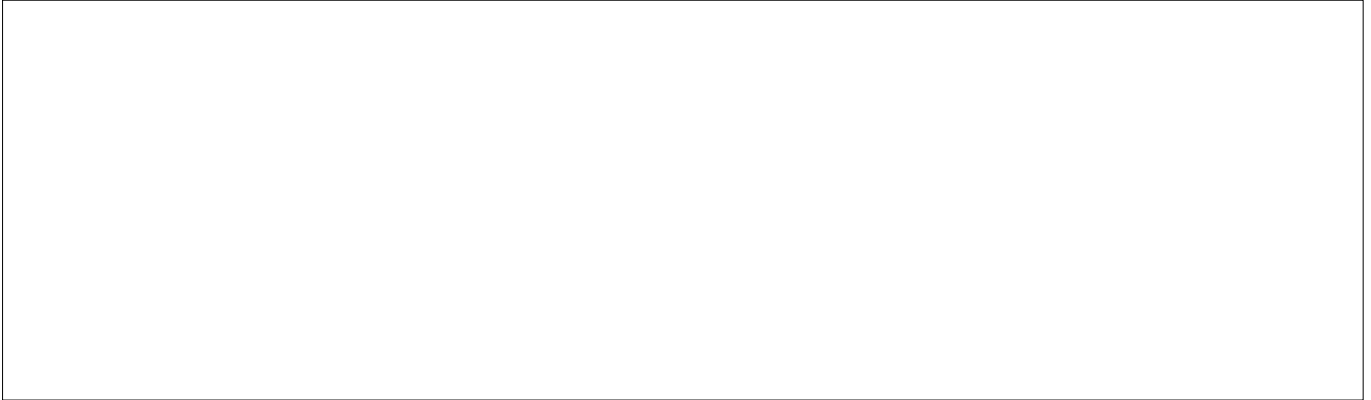
FÉDÉRATION
INTERNATIONALE
DE NATATION

SWIMMING POOL CERTIFICATE GUIDE

FEBRUARY 2017

FR 2 - SWIMMING POOLS

BUILDING DRAWING - KEY PLAN



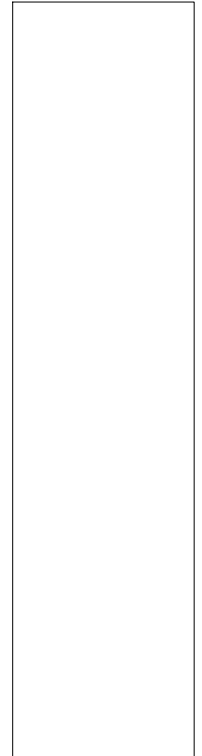
POOL DRAWINGS - 1/400



Longitudinal Section 1/400



Floor Plan 1/400



Cross Section 1/400

BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	1

FR 2 - SWIMMING POOLS

MEASUREMENT CRITERIA

- 1.- The measurements shall be done by a certified surveyor, appointed or approved by the Member in the country in which the pool is situated.
- 2.- The surveying equipment shall be a Total Station. The minimum requirements of the Total Station are the following:
 - Angle Measurement Accuracy Hz and V: 1" (0.3 mgon)
 - Distance Measurement Accuracy: 1mm + 1.5ppm
- 3.- All the points to be measured shall be marked with Self-adhesive Reflective Targets.
- 4.- The measurements corresponding to the FR 2.1, 2.2, 2.3, 2.4, 2.6, 2.7 and 2.8 shall be measured with the pool full of water.
- 5.- The measurements corresponding to the FR 2.5, 2.15 should be measured with the pool empty.
- 6.- The temperature of the water shall be between 25 - 28 °C
- 7.- The length of the pool FR 2.1, 2.2 shall be measured in the centre of each lane.
- 8.- The width of the pool FR 2.3 shall be measured in both ends of the pool.
- 9.- The depth of the pool FR 2.4 shall be measured at least in 5 point per lane: 1 m and 6 m from each end wall and in the centre of the pool.
- 10.- The verticality of the end walls FR 2.5 shall be measured in the centre of each lane. The walls shall form 90 degrees right angles, not less than 0.80m below and 0.30m above the surface of the water. The tolerance is $\pm 0.20^\circ$.

ORTHOGONALITY OF THE POOL

The sides of the pool shall be orthogonal and form 90 degrees right angle. The tolerance of the angle is $\pm 0.05^\circ$.
The 2 diagonals shall be the same length. The tolerance of the diagonal is 10mm.

ORTHOGONALITY OF THE POOL	DEGREES / m
Angle 1	
Angle 2	
Angle 3	
Angle 4	
Diagonal 1	
Diagonal 2	

BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	2

FR 2 - SWIMMING POOLS

FR 2.1 - LENGTH / FR 2.2 - DIMENSIONAL TOLERANCES

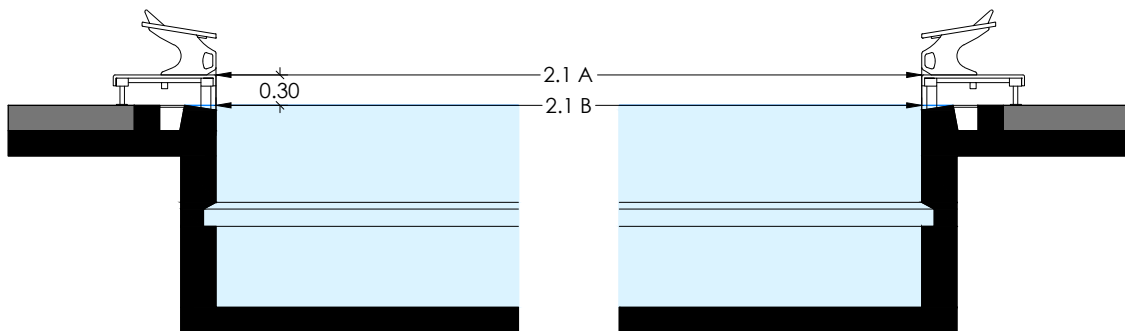
FR 2.1 - 25.000 / 50.000 metres. When touch panels of Automatic Officiating Equipment are used on the starting end, or additionally on the turning end, the pool must be of such length that ensures the required distance of 25.000 / 50.000 metres between the two panels.

FR 2.2 - The admissible tolerance in 50.00 m / 25.00 m swimming pools will be +0.010, -0.000. Tolerances will be measured as follows :

1. Wall to Wall : Minimum 50.020 / 25.020 - Maximum 50.030 / 25.030
2. Touch pad to Touch pad : Minimum 50.000 / 25.000 - Maximum 50.010 / 50.010

Tolerances have to be consistent 0.300 mm above to 0.800 metre below the water surface. These measurements should be certified by a surveyor or other qualified official, appointed or approved by the Member in the country in which the pool is situated.

LANE No	Length measured in the centre of the lane	2.1 A (m)	2.1 B (m)
0	Distance between walls		
	Distance between touch panles		
1	Distance between walls		
	Distance between touch panles		
2	Distance between walls		
	Distance between touch panles		
3	Distance between walls		
	Distance between touch panles		
4	Distance between walls		
	Distance between touch panles		
5	Distance between walls		
	Distance between touch panles		
6	Distance between walls		
	Distance between touch panles		
7	Distance between walls		
	Distance between touch panles		
8	Distance between walls		
	Distance between touch panles		
9	Distance between walls		
	Distance between touch panles		



BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	3

FR 2 - SWIMMING POOLS

FR 2.1 - LENGTH / FR 2.2 - DIMENSIONAL TOLERANCES

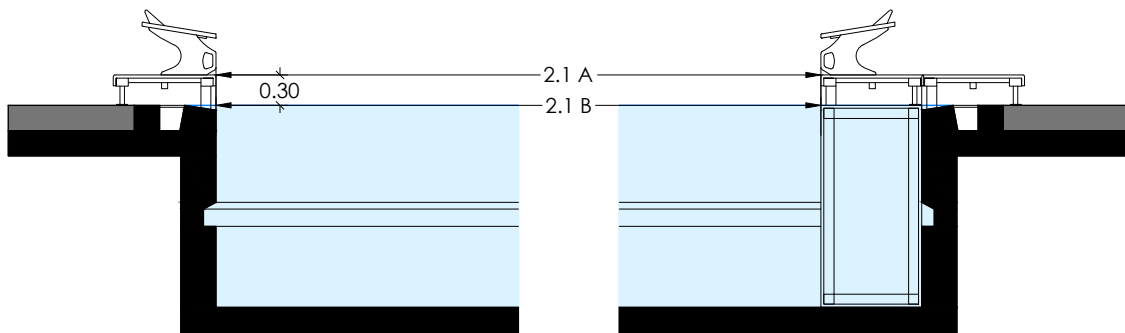
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1. Wall to Wall : Minimum 50.020 / 25.020 - Maximum 50.030 / 25.030
2. Touch pad to Touch pad : Minimum 50.000 / 25.000 - Maximum 50.010 / 50.010

Tolerances have to be consistent 0.300 mm above to 0.800 metre below the water surface. These measurements should be certified by a surveyor or other qualified official, appointed or approved by the Member in the country in which the pool is situated.

LANE No	Length measured in the centre of the lane	2.1 A (m)	2.1 B (m)
0	Distance between walls		
	Distance between touch panes		
1	Distance between walls		
	Distance between touch panes		
2	Distance between walls		
	Distance between touch panes		
3	Distance between walls		
	Distance between touch panes		
4	Distance between walls		
	Distance between touch panes		
5	Distance between walls		
	Distance between touch panes		
6	Distance between walls		
	Distance between touch panes		
7	Distance between walls		
	Distance between touch panes		
8	Distance between walls		
	Distance between touch panes		
9	Distance between walls		
	Distance between touch panes		



BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	3

FR 2 - SWIMMING POOLS

FR 2.3 - WIDTH

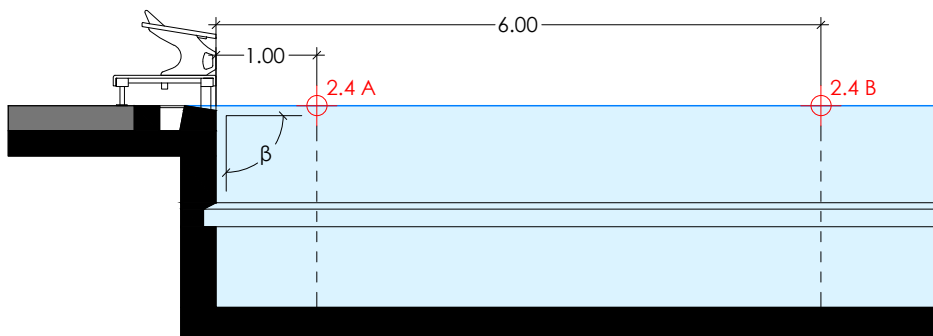
FR 2.3 - Width: There is no restrictions in width. Lanes shall be at least 2.5 metres wide, with two spaces of at least 0.2 metre outside of the first and last lanes.

FR 2.3 - WIDTH	m
End wall 1. Pool Width	
End wall 2. Pool Width	

FR 2.4 - DEPTH

FR 2.4 - A minimum depth of 1.35 metres, extending from 1.0 metre to at least 6.0 metres from the end wall is required for pools with starting block. A minimum depth of 1.0 metre is required elsewhere.

DEPTH	m
Minimum depth at points 2.4 A	
Minimum depth at points 2.4 B	
Minimum depth elsewhere	



FR 2.5 - WALLS

FR 2.5.1 - End walls shall be vertical, parallel and form 90 degree right angles to the swimming course and to the surface of the water. They shall be constructed of solid material, with a non slip surface extending 0.8 metre below the water surface.

LANE No	0	1	2	3	4	5	6	7	8	9
Angle β - End wall 1										
Angle β - End wall 2										

FR 2.5.2 - Rest ledges along the pool walls are permitted; they must be not less than 1.2 metres below the water surface, and may be 0.1 metre to 0.15 metre wide. Both internal and external ledges are acceptable, however internal ledges are preferred.

FR 2.5.2 - REST LEDGES	YES	NO
Rest ledges		
Rest ledges compliant with FR 2.5.2		

BUILDING NAME

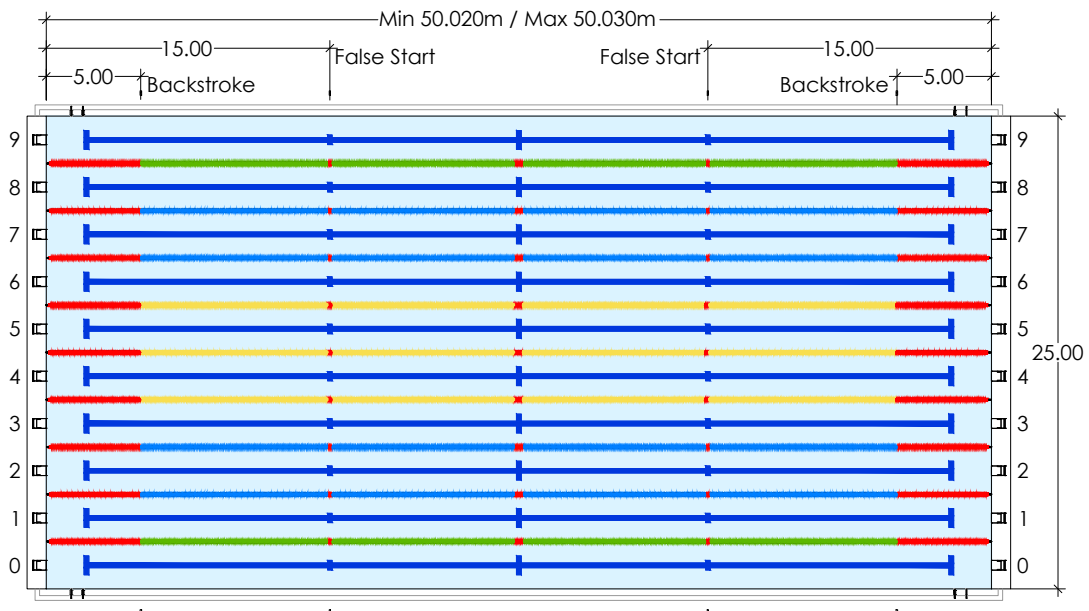
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CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	4

FR 2 - SWIMMING POOLS

FR 2.6 - LANES / FR 2.7 LANE ROPES

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.6 - Lanes shall be at least 2.5 metres wide, with two spaces of at least 0.2 metre outside of the first and last lanes.		
<p>FR 2.7.1 - In an 8 lane pool, lane ropes shall extend the full length of the course, secured at each end wall to anchor brackets recessed into the end walls. The anchor shall be positioned so that the floats at each end wall of the pool shall be on the surface of the water. Each lane rope will consist of floats placed end-to-end having a minimum diameter of 0.10 metre to a maximum of 0.15 metre.</p> <p>In a swimming pool the colour of the lane ropes should be as follows:</p> <ul style="list-style-type: none"> • Two (2) GREEN ropes for lanes 1 and 8 • Four (4) BLUE ropes for lanes 2, 3, 6 and 7 • Three (3) YELLOW ropes for lanes 4 and 5 <p>The floats extending for a distance of 5.0 metres from each end of the pool shall be of RED colour. There shall not be more than one lane rope between each lane. The lane ropes shall be firmly stretched.</p>		
FR 2.7.2 - At the 15-metre mark from each end wall of the pool the floats shall be distinct in colour from the surrounding floats.		
FR 2.7.3 - In 50 metre pools the floats shall be distinct to mark 25 metres.		

Lane ropes measurements, please read in conjunction with below diagram.



BUILDING NAME

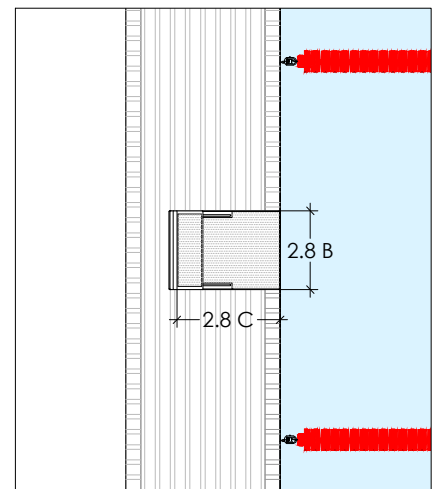
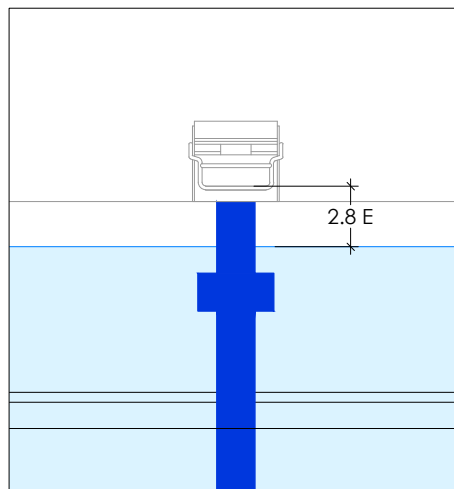
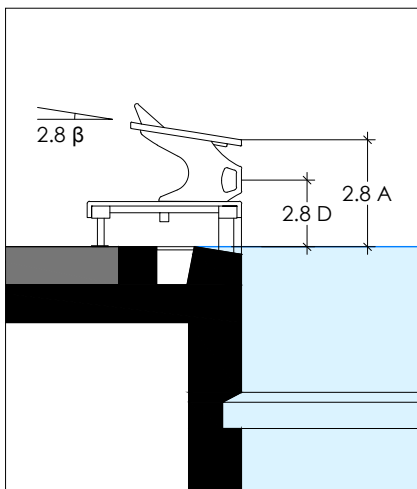
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APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	5

FR 2 - SWIMMING POOLS

FR 2.8 - STARTING PLATFORMS

FR 2.8 - Starting Platforms shall be firm and give no springing effect. The height of the platform above the water surface shall be from 0.5 metre to 0.75 metre. The surface area shall be at least 0.5 metre x 0.5 metre and covered with a non-slip material. Maximum slope shall not be more than 10 degrees. The platform shall be constructed so as to permit the gripping of the platform by the swimmer in the forward start at the front and the sides; it is recommended that, if the thickness of the starting platform exceeds 0.04 metre, grips of at least 0.1 metre width on each side and 0.4 metre width in the front be cut out to 0.03 metre from the surface of the platform. Handgrips for the forward start may be installed on the sides of the starting platforms. Handgrips for backstroke starts shall be placed within 0.3 metre to 0.6 metre above the water surface both horizontally and vertically. They shall be parallel to the surface of the end wall and must not protrude beyond the end wall. The water depth from a distance of 1 metre to 6 metres from the end wall must be 1.35 metres where starting platforms are installed. Electronic read-out boards may be installed under the blocks. Flashing is not allowed. Figures must not move during a backstroke start.

FR 2.8 - STARTING PLATFORM	COMPLIANT	NONCOMPLIANT
The height of the platform (2.8 A) above the water surface shall be from 0.5 metre to 0.75 metre.		
The surface area of the platform shall be at least 0.5 metre x 0.5 metre (2.8 B x 2.8 C) and covered with a non-slip material.		
Maximum slope of the platform shall not be more than 10 degrees (2.8 β) .		
The platform shall be constructed so as to permit the gripping of the platform by the swimmer in the forward start at the front and the sides		
Handgrips for backstroke starts shall be placed within 0.3 metre to 0.6 metre above the water surface both horizontally and vertically (2.8 D,E). They shall be parallel to the surface of the end wall and must not protrude beyond the end wall.		



FR 2.9 NUMBERING

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.9 - Numbering: Each starting block must be distinctly numbered on all four sides, clearly visible. It is recommended that lane number 0 shall be on the right-hand side when facing the course from the starting end with exception of 50m events, which may start from the opposite end. Touch panels may be numbered on the top part.		

BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	6

FR 2 - SWIMMING POOLS**FR 2.10 - BACKSTROKE TURN INDICATORS**

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.10 - Backstroke Turn Indicators: Flagged ropes shall be suspended across the pool, 1.8 metres above the water surface, from fixed standards placed 5.0 metres from each end wall. Distinctive marks must be placed on both sides of the pool, and where possible on each lane rope, 15.0 metres from each end wall.		

FR 2.11 - BACKSTROKE LEDGE

- FR 2.11 - A backstroke ledge may be used:
- The ledge may be adjustable to 4 cm above or 4 cm below the water level.
 - The ledge is a minimum of 65 cm in length.
 - The ledge must be 8 cm in height, 2 cm at the width with 10 degrees of slope

	YES	NO
Backstroge Ledge		
Backstroge Ledge compliant with FR 2.11		

FR 2.12 - FALSE START ROPE

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.12 - False Start Rope may be suspended across the pool not less than 1.2 m above the water level from fixed standards placed 15.0 m in front of the starting end. It shall be attached to the standards by a quick release mechanism. The rope must effectively cover all lanes when activated.		

FR 2.13 - WATER TEMPERATURE

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.13 - Water temperature shall be 25° to 28°. During competition the water in the pool must be at a constant level, with no appreciable movement. In order to keep the water level, preserve the transparency of water and take into consideration the health regulations in force in most countries, inflow and outflow has to be regulated as follows: <ul style="list-style-type: none"> - 220 to 250 m3/h for 50.00 m pools - 150 to 180 m3/h for 33.33 m pools - 120 to 150 m3/h for 25.00 m pools At these turnover rates, the water distribution has to be such that no appreciable current or turbulence is created.		

FR 2.14 - LIGHTING

FINA RULE	COMPLIANT	NONCOMPLIANT
FR 2.14 Lighting - Light intensity over starting platforms and turning ends shall not be less than 600 lux.		

BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	7

FR 2 - SWIMMING POOLS

FR 2.15 - LANE MARKINGS

FR 2.15 Lane Markings - shall be of a dark contrasting colour, placed on the floor of the pool in the centre of each lane.

Width: minimum 0.2 metre, maximum 0.3 metre.

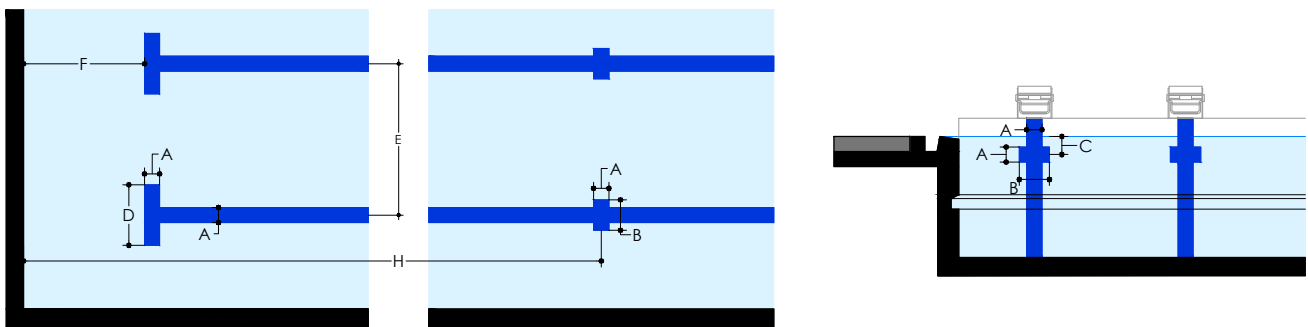
Length: 46.0 metres for 50 metre long pools / 21.0 metres for 25 metre long pools.

Each lane line shall end 2.0 metres from the end wall of the pool with a distinctive cross line 1.0 metre long and of the same width as the lane line. Target lines shall be placed on the end walls or on the touch panels, in the centre of each lane, of the same width as the lane lines.

They shall extend without interruption from the deck edge (curb), to the floor of the pool to a maximum of 3 metres. A cross line 0.5 metre long shall be placed 0.3 metre below the water surface, measured to the centre point of the cross line.

For 50m pools constructed after 1 January 2006, cross lines 0.5 metre long shall be placed at the 15 metre mark from each end of the pool. After October 2013 this shall be measured from the end wall to the centre point of the cross line.

LANE No	A	B	C	D	E	F	H
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							



FR 2.16 - BULKHEADS

FR 2.16 Bulkheads –When a bulkhead serves as an end wall, it must extend the full width of the course and present a solid smooth, non-slippery stable vertical surface on which touch pads may be mounted extending not less than 0.8m below and 0.3m above the surface of the water, and must be free of hazardous openings above or below the waterline which may be penetrated by a swimmer's hands, feet, toes or fingers. A bulkhead must be of a design that provides for the free movement of officials along its length without such movement creating any appreciable current or water turbulence.

	YES	NO
Bulkheads		
Bulkheads compliant with FR 2.15		

BUILDING NAME

DEVELOPED BY		DATE	
CHECKED BY		DATE	
APPROVED BY		DATE	
FEDERATION		SIGNATURE	
POOL No		PAGE No	8