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**Technical requirements and test methods for sports field - Part
2: Swimming**

体育场地使用要求及检验方法 第2部分:游泳场地

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1 Scope

The document sets technical requirements for swimming pools, diving pools, water polo pools and artistic swimming pools and for acoustics, daylighting and lighting, the poolside

deck, the pool floor and the pool wall; it describes the matching test methods, establishes the rules for judging conformity, and gives a classification of venues to support those provisions.

It applies to the construction and inspection of standard swimming venues used for competition and training. Venues for leisure and fitness use may apply it as a reference.

2 Normative references

Seven documents are cited: GB 19079.1 on opening conditions and technical requirements for swimming places, GB 37488 on hygiene indicators and limits for public places, GB 50189 on energy efficiency design of public buildings, CJJ 122 on water supply and drainage engineering for swimming pools, JGJ/T 131 on acoustic design and measurement in sports halls, JGJ 153-2016 on lighting design and testing for sports venues, and JGJ 354 on electrical design for sports buildings.

Clause 3 states that the document has no terms or definitions to define.

4 Classification of venues

By intended use, swimming venues fall into four classes: swimming pools, diving pools, water polo pools and artistic swimming pools.

5.1 Basic requirements

Each class of venue is built according to its actual functional use, and building energy efficiency follows GB 50189. Hygiene inside the venue follows GB 37488.

Space requirements and the requirements on marks and signs for competition and training pools follow the relevant competition rules. Opening a public (national fitness) swimming pool to the public follows GB 19079.1.

5.2 Swimming pool

Table 1 fixes the dimensions of a competition swimming pool under six headings: length, width, water depth, clear headroom, lane width and electronic touchpad. The long course length is 50.000 m and the short course length 25.000 m. The width is 25.000 m for ten lanes or 21.000 m for eight lanes. In a pool with starting platforms the depth is not less than 1.8 m from 1 m off the starting end to 6 m from the wall, and a professional competition pool has a depth of not less than 2 m. Lane width is 2.50 m, and in an eight-lane pool 21 m wide a buffer of at least 0.5 m is left outside the two outermost lanes. Clear headroom is decided from the needs of competition, training, leisure, energy saving and broadcasting; above the water surface it is advised to be not less than 5 m for domestic professional events and 8 m to 10 m for pools hosting the Olympic Games or a world championship. A

competition pool carries electronic touchpads, and the clear distance between the finished tile faces of the two walls allows for the thickness of two touchpads so that the distance between the two touchpads is 50.0 m or 25 m. A note to the table states that lane one lies to the right of the starting end and that in a ten-lane pool the rightmost lane is lane zero.

For a pool with electronic timing touchpads, the wall-to-wall length measured over the band from 0.3 m above the water surface to 0.8 m below it, with the touchpads not fitted, has a permitted positive deviation of 0.02 m to 0.03 m. For a pool without touchpads the permitted positive deviation over the same band is 0.00 m to 0.01 m.

The pool is rectangular, the lengths of the two diagonals differ by not more than 10 mm, and the four wall corners are $90^\circ \pm 0.05^\circ$. Competition pool dimensions follow Annex A. A warm-up pool 25 m or 50 m long with at least four lanes and a depth advised at not less than 1.8 m is placed next to a professional competition pool.

Ancillary facilities are provided as the competition rules require. Lane ropes run the full lane length and are fixed to hooks on the end walls. Lane marking lines are dark, dark blue or black, and 0.25 m $\pm$ 0.05 m wide; they are 46.00 m long in a 50.00 m pool and 21.00 m long in a 25.00 m pool, ending 2 m from the wall at each end, with a cross line 1 m long and 0.25 m $\pm$ 0.05 m wide at right angles at each end. In a 50.00 m pool each lane marking line also carries a cross line 0.50 m long and 0.25 m $\pm$ 0.05 m wide whose centre lies 15 m from each wall.

Target marking lines lie on the end wall or the touchpad down the centre of each lane, in the same width as the lane marking line, running from the top of the wall to the floor, with a cross line 0.50 m long and 0.25 m $\pm$ 0.05 m wide at 0.30 m below the water surface.

The false start rope spans the pool on fixed posts 15 m from the starting end, at least 1.20 m above the water surface, and can be dropped quickly into the water to cover every lane. The backstroke turn indicator is a flag line spanning the pool on posts 5.00 m from each end wall, 1.8 m above the water surface.

Starting platforms are rigid and free from spring, standing 0.5 m to 0.75 m above the water surface. The surface area is not less than 0.3 square metres, covered with non-slip material whose wet static friction coefficient is above 0.5, and the inclination does not exceed 10° . Horizontal and vertical backstroke handgrips are fitted 0.30 m to 0.60 m above the water surface, the horizontal grip parallel to the water and the vertical grip perpendicular to it, both flush with the pool wall and not projecting beyond it. The platform accepts a backstroke start device whose footrest is 0.08 m high, at least 0.065 m long and 0.02 m thick at its lower edge, inclined at 10° , and adjustable from 0.04 m above the water to 0.04 m below it.

Resting ledges run along both ends and both sides of the pool not more than 1.2 m below the water surface and are 0.10 m to 0.15 m wide. They may project from the wall or be recessed into it; the resting part is non-slip, differs in colour from the main colour of the pool, which is white or pale blue, and the corners are chamfered.

An electronic timing touchpad, where fitted, measures at least 2.40 m wide, 0.90 m high and 0.01 m thick. Its top edge stands 0.30 m above the water surface and it is immersed 0.60 m. Its face is brightly coloured and carries the target marking line, and its mounting does not interfere with the fitting of the lane ropes.

5.3 Diving pool

The diving pool is 25.00 m long; the width is not less than 21.00 m and 25.00 m is advised. Springboards and platforms are arranged along the 25.00 m side, and the water depth is 5.00 m to 6.00 m.

Marking lines in a diving competition pool run parallel to the long side and number not fewer than three. In a diving pool 25 m in length and width the marking line is 21.00 m long and advised at 0.20 m to 0.30 m wide, the spacing between lines is 2.50 m, and the first line lies directly below the vertical projection of the 3.00 m springboard.

Springboard and platform dimensions follow Annex B, with a permitted positive deviation of 0.00 m to 0.05 m on the height above the water surface. Board and platform surfaces are non-slip, and their number and layout follow the competition rules. Platform stairs are advised to be laid with non-slip material whose wet static friction coefficient is not less than 0.5. Where platform width increases, the distance from the vertical line of that platform to the vertical line of an adjacent platform increases by half the added width.

The 3 m springboard and the 3 m, 5 m, 7.5 m and 10 m platforms carry handrails at the rear and on both sides. The two side rails are at least 1.0 m apart, the rails are at least 1.0 m high, they start 1.0 m back from the front edge of the platform and are mounted on its outer side. A note states that the springboard rail height is measured from the board to the top edge of the rail. A diving competition pool carries a surface or underwater wave-making device, and a massage pool and shower heads are placed beside it.

5.4 Water polo pool and artistic swimming pool

In a water polo competition pool the distance between the goal lines is 30.60 m for a men's match or 25.60 m for a women's match, the width is 20.00 m and the depth not less than 2.00 m; the layout follows Annex C.

An artistic swimming competition pool is not smaller than 20.00 m by 30.00 m. Within it an area of 12.00 m by 12.00 m has a depth of not less than 3.00 m and the rest a depth of not less than 2.50 m, with the slope between the 2.50 m and 3.00 m depths not shorter than 8.00 m; the layout follows Annex D.

5.6 Acoustics, daylighting and lighting

The acoustic performance of an indoor swimming venue and its spectator seating follows