



New European Standards for
Swimming Pool Design
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The New Standards

- **BS EN 15288-1 Swimming pools - Safety requirements for design.**
- **BS EN 15288-2 Swimming pools - Safety requirements for operation.**

Status

- **In the UK we already have better design and operational guidelines than most of the rest of Europe.**
- **Some of the requirements of the new standard conflict with our own.**
- **In the long term BS 15288 will supersede all others.**

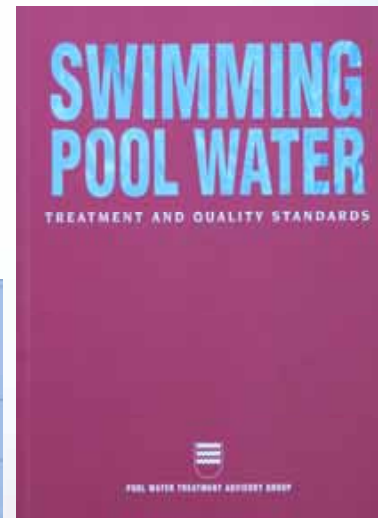
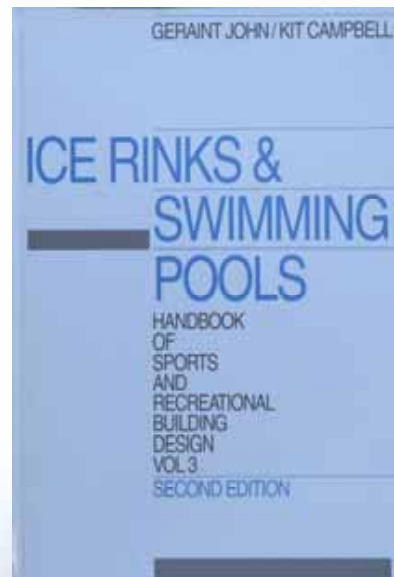
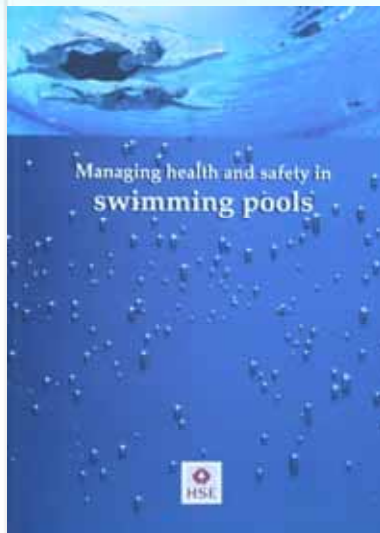
Scope

- **Type 1 - Public pools and aquatic parks**
- **Type 2 - Hotels, campsites, clubs and hydrotherapy pools**
- **Type 3 - Pools in rented villas**
- **Type 4 - Domestic pools serving more than 20 homes.**
- **Applicable to new and refurbishment of existing pools**

Works of reference

- **Everyone involved with the design and construction of pools should give careful consideration to the standard works of reference.**

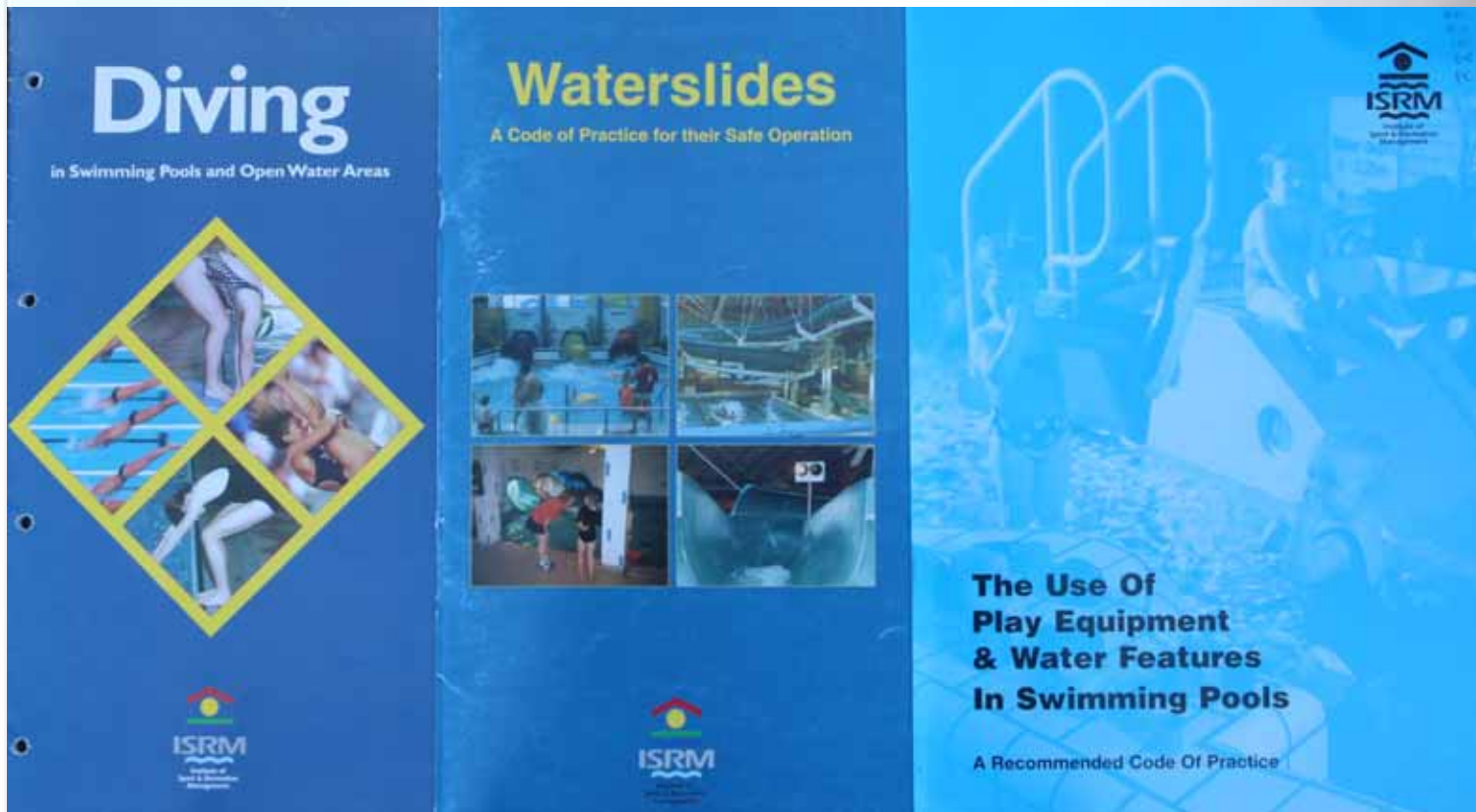
Works of reference



British Standards

- **BS 13451 Swimming pool equipment**
- **BS 1069 Waterslides**
- **BS 8007 Water retaining structures**
- **BS 5385 Part 4 Tiling in pools**
- **BS PAS 39 Pool water treatment**

Works of reference



Operational consequences

- **Designers must have an awareness of the operational consequences of design**
- **An experienced facility manager must be included as a design team member**

General safety

- **Safe operation is influenced by safe design - which must take account of the use, activity, occupancy and control of the facility**
- **Occupancy must be established at the outset - for water areas and other activity areas**
- **Recommendation of 3m² of water per person**
- **Recommend that consideration be given to drown detection systems and video supervision of pool surrounds**

Layout

- **Segregation of barefoot areas**
- **Toilets and showers to be located at the entrance to the pool hall**
- **Circulation routes adjacent to deep water or high freeboard to be avoided**
- **Non swimmers and paddling pools to be segregated from deeper water**
- **Access to pool surround to be positioned where water depth is shallow**

Signage & audio communication

- **Must show the function of each pool, water depth and escape routes**
- **Depth markings with 70mm high lettering - at pool entrance, max and min depths and abrupt changes**
- **Bear in mind users are often not wearing corrective lenses**

Materials

- **All materials fit for purpose and able to withstand high humidity and occasional saturation**
- **Avoid the use of stainless steel which could be subject to stress corrosion cracking**

Stainless steel stress corrosion cracking

- **SCC emanates from minor pitting corrosion and causes a total failure of the component**
- **If SS is under stress, safety critical and not regularly cleaned - type 304 and 316 should not be used**
- **Stainless steel in swimming pool buildings - published in 1995**

Circulation

- **All floors in wet areas to have effective drainage – a fall of 1 in 50 to 1 in 20**
- **Max ramp inclination 1 in 12.5 – 1 in 20 preferred**
- **All floors shall have a min slip resistance of ? – gradients steeper than 1 in 33 need greater slip resistance**
- **Single steps maximum height of 250mm – 180mm preferred – with contrasting nosing**

Emergency escape routes

- **Take into account barefoot users**

Lighting

- **Max use of natural light**
- **Circulation, plant rooms and changing areas – uniform 100 Lux**
- **Water areas – uniform 200 Lux**
- **Lower levels permitted with increased supervision**
- **Underwater lighting recommended in pools with deep water**

Acoustics

- **Designed to ensure reverberation allows effective communication – recommended level 1.5 sec to 2 sec**

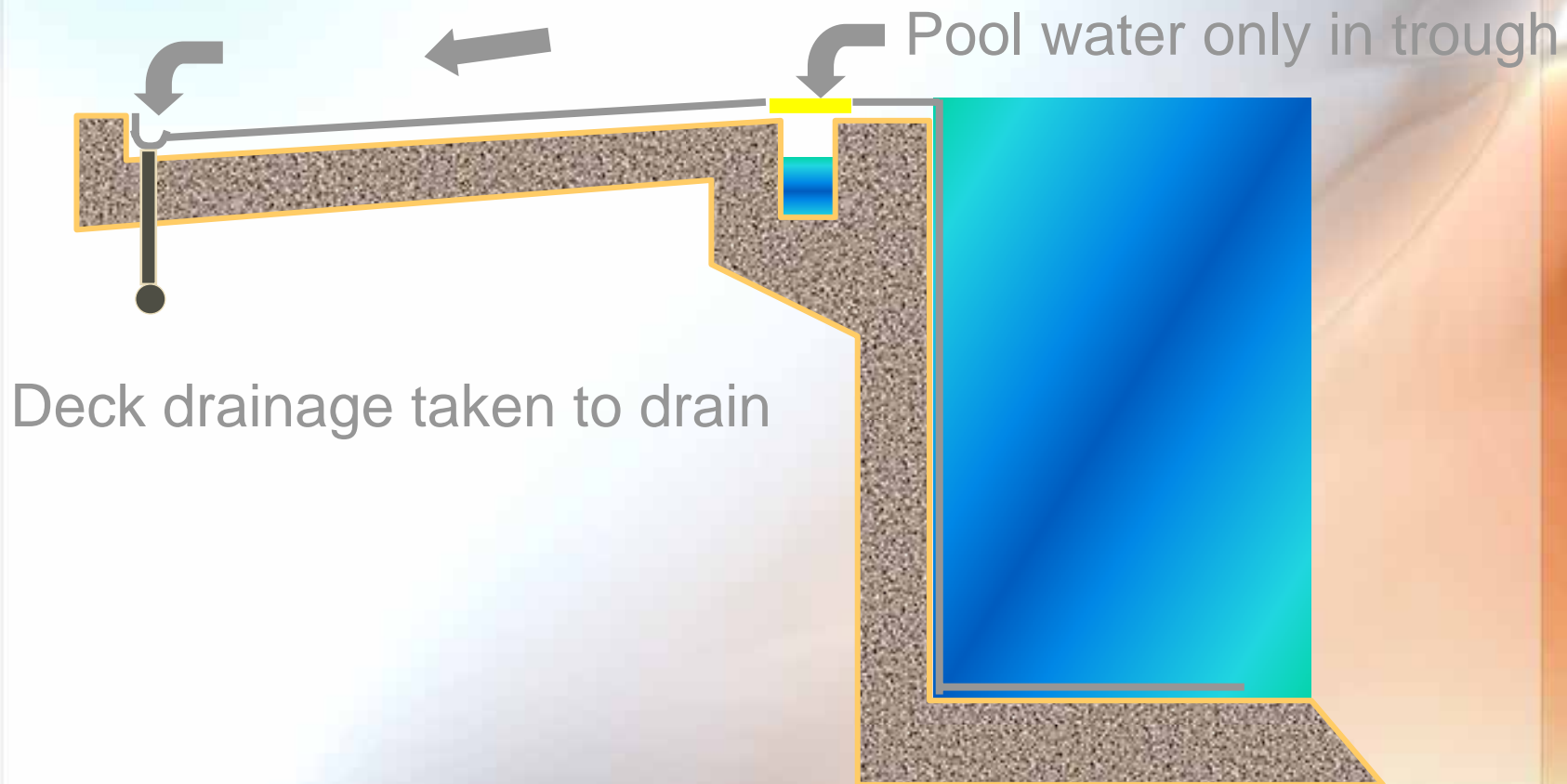
Heating and ventilation

- **Provision of controlled environment**
- **Designed to minimise concentration of pollutants**
- **Recommended air temperature 0C° - 4C° above water temperature**
- **Recommended RH between 40% & 80% - preferred 60%**
- **Recommended air velocity in proximity of bathers max 0.1 m/s**

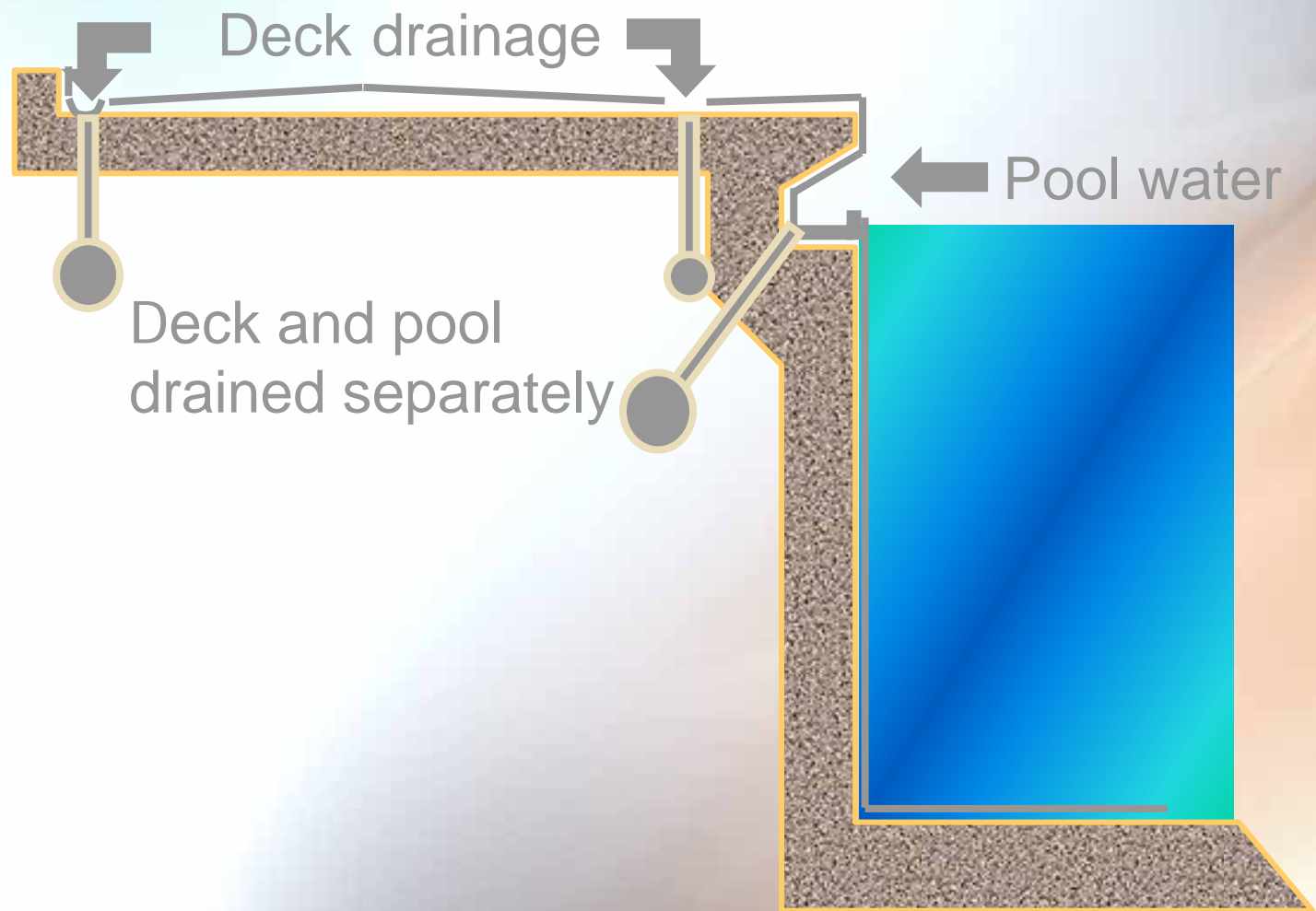
Pool surrounds

- **Where water depth is greater than 1.35m, distance between casualty and surround shall be no greater than 20m**
- **Water on pool surrounds must not contaminate the pool water**

Pool surround drainage



Pool surround drainage



Minimum pool surround widths

Location	Type 1	Type 2	Type 3	Type 4
Main access from changing	3.0m	2.5m	1.25m	2.5m
Other surrounds generally	2.5m	2.0m	1.25m	2.0m
Where starting blocks are installed	3.0m	2.5m	1.25m	2.5m

Minimum pool surround widths

Location	All types
Minimum distance between a swimming pool and a diving pool	3.0m
Minimum distance between a swimming / diving pool and a learner pool	4.0m
Other circulation around a pool less than 300m²	1.25m
Other circulation around a pool greater than 300m²	1.5m

Pool edge

- **Marked with a contrasting colour**
- **Any submerged area shall be group C slip resistant**
- **Deck level pools should have a finger grip no less than 15mm deep**

Pool tank floors

- In water depths of less than 1.5m no abrupt changes and a max gradient of 1 in 10 but 1 in 16 is preferred
- In water depths less than 0.8m 1 in 20 is the max recommended gradient
- Floors in water areas less than 1.35m deep shall have min group A slip resistance
- Floors in water areas less than 0.8m deep shall have min group B slip resistance

Pool tank floors

- **In water depths less than 1.35m - changes in inclination must be marked by a contrasting colour and tactile surface**
- **Where depth changes from 1.35m to deeper there must be a conspicuous line marked on the floor**
- **Anchor points must be installed at water level on the shallower side 0.5m before the change - to allow installation of a device to define an area for non swimmers**

Pool tank walls

- **Smooth and free from structural protrusions down to 1.5m except for rest ledges**
- **Rest ledges recommended in water depth greater than 1.4m**
- **Rest ledges must be between 1.0m and 1.5m from water surface – min 100mm width, max protrusion 150mm**

Electrical

- **Indoor pools and changing accommodation for outdoor pools must have lightning protection**
- **Where indoor and outdoor pools are connected a bonded separating gate must be installed. On the inside there should be provision for a floating barrier 2.0m from the gate to prevent public access**

Wave pools

- **Requirements of BS EN 13451 apply**
- **Rest ledges, stairs and ladders must be recessed**
- **Provision of a surveillance point with a full view over the water - fitted with an emergency stop**

Pool covers

- **Not yet covered by BS EN 13451**
- **Must withstand a vertical load of 1,000 N over an area of 0.5m x 0.5m**
- **Should extend over the complete water surface – otherwise access to the pool should be prevented**

First aid rooms

- **Necessity to be based on pre design risk assessment**
- **If provided must be min of 8m² and 2.5m high**
- **Requires a wash basin with hot and cold water**
- **Direct exit route to emergency vehicle with 1.2m min width and no stairs**
- **Where possible first aid exit route should not be visible from pool**

Control points

- **Designed to allow control of the water features**
- **To provide a good overview of the water area and pool surrounds**
- **Can be combined with first aid room**

Chemical stores

- **Must be separate or segregated from plant rooms**
- **Located away from public areas**
- **Access by ramp rather than stairs is recommended**
- **Natural ventilation preferred, if mechanical ventilation is used a malfunction alarm is required**
- **Chlorine gas must be stored in a gas tight room**

Plant rooms

- **Allow sufficient space for proper maintenance including filter media change**
- **The use of automatic dosing and control systems is preferred**
- **Where possible disinfection and pH control plant should be in a separate plant room**

BS EN 15288-2 Swimming pools - Safety requirements - operation.

- **Organisational requirements.**
- **Operational requirements.**
- **Instructions to users.**
- **A detailed risk analysis guide which can be used as a checklist with the operator.**

Feedback

- **The preparation of the standard is still ongoing and its not too late to propose changes.**
- **Please send your comments to me at msgconsult@aol.com**