

Swim England Safety Guidance

The Use of Electrical Equipment and Appliances near Swimming Pools

Guidance and Information Document

Purpose of this Information note

To explain good practice relating to the use of electrical equipment in or near swimming pools.

1. Use of Electricity

- 1.1 The normal risks associated with the use of electrical equipment can be magnified by the wet and corrosive conditions in swimming pools and associated areas.
- 1.2 Swimming clubs are mainly concerned with the potential risk of electric shock from electrical equipment used in the water, on the poolside, in the pool hall and in rooms off the pool hall.
- 1.3 Such items of equipment include:
 - pace clocks, automatic timing and computerised results systems for swimming;
 - auxiliary lighting to increase lighting levels;
 - computerised results systems for diving;
 - computerised results systems, CD decks and back up units and underwater and air speakers for synchronised swimming;
 - duplicating equipment;
 - public address equipment;
 - water polo timing equipment.
- 1.4 The danger comes not only from the use and siting of equipment but also from the trailing cables used to make connections to electrical circuits.

2. Safety

- 2.1 There is a duty on the management of public and private pools and on the hirers of pools if they provide the equipment to ensure that when electrical equipment is used it does not pose an unacceptable risk to either employees or visitors to the premises.

Adequate liaison must be maintained between the pool management and the swimming club officials in order to minimise risk.

- 2.2 The design of electrical installations and equipment, as well as the use of the equipment and repairs are subject to various regulations and standards meant to reduce risk. They are complicated and cover matters far beyond the remit of swimming clubs. Nevertheless in the interests of safety clubs should be aware of the following points. Basically the areas in and around a swimming pool are zoned with

the voltage of each area specified. It is important that lengthy cabling does not transfer high voltage equipment into lower voltage areas. (see diagram below)

2.3 If portable equipment must be used within the pool, the pool area or areas adjacent to the pool the danger will be reduced by selecting equipment in the following hierarchy with the first named being the most suitable:

- i. low voltage battery powered equipment, for example 12 volts;
- ii. low voltage cable fed equipment, in this case a 12 volt supply is recommended;
- iii. cable fed equipment from a safe extra low voltage (SELV) system, 50 volts AC or below;
- iv. cable fed equipment from a reduced low voltage (RLV) system, 110 volts, incorporating an isolating transformer (BS 3535) that is centre tapped to earth on the secondary output winding.

Note: A voltage as low as 50 volts can result in fatal shock to someone immersed in the pool.

2.4 In addition, therefore, if electrical equipment is to be used close to the pool it should be:

- a) designed to withstand immersion; or
- b) fitted with a restraint to prevent it being able to fall into the pool; or
- c) barriers should be erected between the equipment and the pool edge to reduce the risk of accidental immersion.

The risks from electrical equipment will be reduced if it is used in a dry area or mounted or supported beyond the reach of splashes.

2.5 Socket outlets should not normally be located in wet areas, where they are, they must be of a type suitable for that environment, in accordance with EN 60309-2

2.6 Additional safety may be provided by installing a non-adjustable unit specific Residual Current Device (RCD) with a rated tripping current not exceeding 30 milliamps, for each socket outlet or outlet circuit which is to be used for connection of electrical equipment. Their operation should be checked regularly, by pressing the test button on the individual RCD, and on all occasions immediately prior to their use with equipment where possible.

It should be noted that buildings licensed for public entertainment under the Local Government (Miscellaneous Provisions) Act 1982 must have these devices installed

3. Additional Precautions

3.1 The correct installation/use of appropriate electrical equipment will decrease the risk of electric shock, but cannot eliminate it. Therefore, follow the additional precautions below.

3.2 Consult the pool operator/manager and get his approval before connecting any electrical equipment or apparatus as to its suitability and to ensure that protective devices are installed and working correctly.

3.3 Use equipment which is designed for the purpose. The equipment should be set up by an authorised and competent person who has received training and has

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an adequate knowledge of electrical safety or otherwise by a qualified electrician.

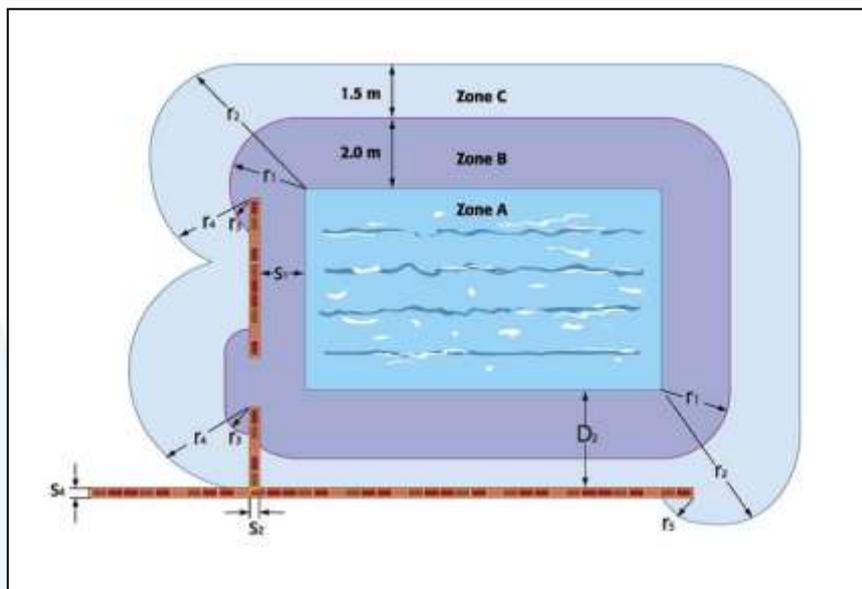
- 3.4 Avoid long cable runs and the use of connectors to join lengths of cable between equipment and the protected socket or supply source.
- 3.5 Portable equipment should be inspected before use for damage and if there appear to be signs of damage which give doubt to its safety it should not be used until it has been inspected by a qualified electrician.
- 3.6 There should be a formal programme of inspection and testing of portable equipment at periods determined by a risk assessment by a qualified electrician which is recorded on the equipment and in an inspection log.
- 3.7 In no circumstances, whatsoever should swimmers handle electrical equipment or cables when in the water.
- 3.8 If in doubt as to whether equipment is suitable for use, obtain professional advice.
- 3.9 Do not interfere with or touch electrical equipment if you are not suitably trained.

4. Sources of Information

4.1 For those wanting further guidance the following may be helpful:

- “Requirements for Electrical Wiring Installations – Swimming Pools and other basins BS 7671:2008 + A3:2015 HSE publications
- “Managing Health and Safety In Swimming Pools HSG 179” – “Electrical installations and equipment”, paragraphs 294 to 313.
- “Maintaining portable and transportable electrical equipment HSG 107”
- “FINA Handbook 2005 – 2009”
- “Facilities Rule 13 – Sound Equipment and Presentation Standards

Electrical zone arrangement



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