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Swimming pools - Part 2: Safety requirements for operation

Piscines - Partie 2: Exigences de sécurité pour le fonctionnement

Schwimmbäder - Teil 2: Sicherheitstechnische Anforderungen an den Betrieb

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Foreword

This document (EN 15288-2:2008) has been prepared by Technical Committee CEN/TC 136 “Sports, playground and other recreational equipment”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2009, and conflicting national standards shall be withdrawn at the latest by March 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This standard EN 15288 "*Swimming pools*" consists of the following parts:

— *Part 1: Safety requirements for design*

— *Part 2: Safety requirements for operation*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Pools come in a wide range of types, from water parks with thousands of visitors per day, through communal pools, to hotel and guest houses. Such a wide range implies a gradation of the safety requirements, considering the specific level of hazards. It should also be considered that in Type 1 swimming pools the user expects poolside supervision, while in other Types the user may not expect it.

On the basis of regular risk assessment, the operators of swimming pools should take reasonable measures to ensure the safety of users taking into consideration the risks as well as the restrictions imposed by technical and commercial factors.

Pool operators should also consider EN 15288-1, when carrying out risk assessments.

This European Standard includes requirements, recommendations and notes. While compliance with requirements is mandatory, recommendations indicate best practices and notes give additional information and/or explanations.

1 Scope

This European Standard specifies safety requirements for operating of classified pools according to clause 4. It is intended for those concerned with the operation and management of classified swimming pools. It provides guidance about the risks for staff and users associated with public swimming pools, by identifying the precautions needed to achieve safety.

This European Standard has limited application to classified pools which consist of segregated areas of rivers, lakes or the sea. The requirements for safe working methods and supervision should be followed insofar as they are relevant.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 15288-1:2008, *Swimming pools — Part 1: Safety requirements for design*

EN ISO 14121-1, *Safety of machinery — Risk assessment — Part 1: Principles (ISO 14121-1:2007)*

ISO 7001, *Graphical symbols — Public information symbols*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
pool/swimming pool
facility, with one or more water areas, intended for swimming, leisure or other water based physical activities

3.2
indoor swimming pool
one or more constructed water areas for bathing enclosed in a building, covered by a roof (fixed or moveable)

3.3
outdoor swimming pool
one or more constructed open-air water areas for bathing

3.4
private use
use of an installation designated solely for the owner's/proprietor's/operator's family and guests including the use connected with renting houses for family use

3.5
public use
use of an installation open to everyone or to a defined group of users, not designated solely for the owner's/proprietor's/operator's family and guests independently from paying an entrance fee

3.6
therapeutic pool
designed to provide medical and physiotherapeutic care under control of a competent person

NOTE Pools destined for fitness and related activities are not considered therapeutic pools.

3.7
pool basin
water tank where water-related activities can take place

3.8
pool surround
walkable area around a pool basin, to do with the use of the basin itself, like circulation areas, areas of entry and exit, etc.

3.9
pool operator
designated person/organization responsible for the operation of the pool in terms of health and safety

3.10
staff areas
areas only the staff have access to

3.11
pool technical staff
trained and competent people responsible for the operations of the technical equipment

3.12
supervision
assistance to the users and/or surveillance from trained and competent personnel to ensure safe pool operation

3.13
pool supervisory staff
trained and competent persons (e. g. lifeguards) responsible for the supervision of users in the controlled area

3.14
poolside supervision
action of supervising users in water and on the pool surround

4 Classification

4.1 Swimming pool Type 1

Pool where the water-related activities are the main business (e. g. communal pools, leisure pools, water parks, aquaparks) and whose use is "public" according to 3.5.

4.2 Swimming pool Type 2

Pool which is an additional service to the main business (e. g. hotel pools, camping pools, club pools, therapeutic pools) and whose use is "public" according to 3.5.

4.3 Swimming pool Type 3

All pools except:

— pools Type 1;

— pools Type 2;

— pools of private use according to 3.4.

5 Organisational requirements

5.1 General operational procedure

5.1.1 General

Pool operators shall follow four steps, considering the specific pool facilities and related hazards:

a) prepare a written procedure on managing health and safety;

b) identify the hazard, assess the risk (see EN ISO 14121-1), set related procedures and instructions to prevent and protect from the assessed risks, distribute procedures and instructions and train the staff;

c) define the organisation chart and the related roles and responsibilities;

d) monitor the performance of the organisation and evaluate the results on a regular basis and adapt and improve the organisation accordingly.

In pools where constant supervision is not foreseen, the requirements stated below may not be fully applicable but the relevant principles are always valid and shall be followed by the pool operator.

NOTE Where appropriate, technical and supervisory roles can be combined.

5.1.2 Prepare a written procedure on managing health and safety

Based on a safety concept the procedure shall include:

a) the name and roles of key individuals and their responsibilities;

b) a list of hazards and the safe systems of work or precautions for avoiding them;

c) the arrangements for dealing with incidents and accidents;

d) the arrangement for providing the instructions, training and supervision to ensure that safe systems of work are always adopted and followed;

e) the arrangements to ensure that employees follow the rules and precautions.

5.1.3 Define the organisation chart and the related roles and responsibilities

An organisation chart shall be formulated, distributed and maintained. It shall include a functional job description, and shall identify who does what, when and the results expected.

5.1.4 Assess the risk, set related procedures and instructions

A specific risk assessment shall be performed for every swimming pool before its first opening to the user and shall be maintained and reviewed in any case every time there is a major technical change, an accident or a series of incidents.

The aim of the risk assessment is to examine the aspects of pool operation that could possibly harm people. It shall:

a) evaluate the severity and probability of the hazards;

b) establish the necessary precautions;

c) check what precautions have been taken, and act if necessary.

The necessary steps in a risk assessment are:

d) identifying the hazards;

e) deciding who might be harmed, and how;

f) assessing the risk;

g) take appropriate actions (eliminate or reduce it, or protect who could be harmed);

h) preparing procedures and instructions;

i) distributing them;

j) training the staff;

k) recording the findings;

l) reviewing the assessment.

The risk assessment has to be dated and signed by the pool operator.

5.1.5 Monitor the performance, evaluate the results, adapt and improve the organisation

The organisation shall also consider audits at set intervals, determined by the risk assessment, and every time there is a major technical change, an accident or a series of incidents. The purpose is to monitor the performance of the organisation and evaluate its results.

Actions to adapt and improve the organisation shall be taken on the basis of the evaluations and on the feedback.

5.2 Pool safety procedures/instructions

5.2.1 General

Where it has been identified from the risk assessment that arrangements are required, they shall be in a written procedure.

Procedures shall comply with the following structure:

a) purpose;

b) field of application;

c) definitions;

d) allocation of roles and responsibilities;

e) description of process;

f) controlled distribution (issue and recording of written procedure/instruction, controlled issue of the copies);

g) monitor and review (monitor the effectiveness of the procedures/instructions, periodic review, responsibility of reviewing).

In the following paragraphs the essential procedures are listed. The operator shall add additional procedures, if necessary in relation to the specific facility and to the related activities.

5.2.2 Working procedures for plant and equipment

The general risk assessment (see 5.1) shall decide about the following procedure:

a) access control (prevention of overloading and unauthorised access), see 6.1.1.3 and 6.1.1.4;

b) checking the pool site, the buildings and the associated technical equipment, see 6.1.3;

c) checking the pool equipment and components and the safety devices, see 6.1.4*;*

d) cleaning and disinfecting the premises, see 6.1.5;

e) the operation of water treatment systems, see 6.1.6;

f) the operation of heating, ventilation and air conditioning, see 6.1.7;

g) the operation of lighting systems, see 6.1.8;

h) maintenance of the pool equipment, see 6.1.9;

i) selection and safe delivery, storage, handling and use of chemicals, see 6.1.10;

j) applying and controlling the chemicals in pool water, see 6.1.11;

k) pool water sampling for physical, chemical and microbiological analysis, see 6.1.12.

5.2.3 Working procedures and instructions for pool staff

The general risk assessment (see 5.1) shall decide about the following procedure:

a) deployment and training pool supervisory staff;

b) deployment and training pool technical staff;

c) deployment and training of other pool staff (e. g. swimming teachers), if responsible for the safety of a group of users;

d) structuring the duties, duty spells, job rotation, etc.;

e) selection and use of personal protective equipment (PPE) in accordance with relevant 89/686/EEC directive;

f) recording incidents and accidents;

g) operation and checking of safety equipment.

5.2.4 Emergency procedures

The general risk assessment (see 5.1) shall decide about the following procedure:

a) general emergency procedures, see 6.3.1, such as:

   1) fire;

   2) structure/component/equipment failure;

   3) a terrorist act;

b) requirements for raising the alarm, see 6.3.2;

c) requirements for rescuing, see 6.3.3;

d) requirements for evacuation, see 6.3.4;

e) additional specific requirements, see 6.3.5;

   1) solid faecal contamination;

   2) liquid faecal/blood/vomit contamination;

   3) breakdown in pool water clarity;

   4) cleaning chemicals such as detergents in the pool water;

   5) microbiological contamination;

   6) lighting failure;

   7) lighting storm;

f) emergencies concerning chemicals, see 6.3.5.4;

   1) contact with chemicals;

   2) emission of toxic gas;

g) responding to incidents involving pool users or pool staff;

   1) a casualty in the water;

   2) disorderly behaviour, physical violence;

   3) first aid.

To prevent confusion among the swimming pool staff, there shall be a clear allocation of roles and responsibilities when external emergency services are summoned.

6 Operational requirements

6.1 Operational requirements for safe working practices for a swimming pool and its equipment

6.1.1 Occupancy

6.1.1.1 General

The safe level of occupancy has to be considered and defined by the pool operator on the basis of a risk assessment, considering at least

a) the design of the facility (layout, available space, water areas, features, attractions etc.);

b) the type of users and activities taking place at any one time;

c) the levels of supervision actually provided.

6.1.1.2 Guidance on the maximum number of users at one time in a swimming pool

The maximum number of users shall be defined by the pool operator on the basis of the results of a risk assessment which takes into account

a) the designation of the pool (e. g. swimming pool, wave pool, hotel pool);

b) the pool design capacity (e. g. outdoor leisure pools with large sunbathing areas, small hydromassage pools);

c) the pool use at any one time (e. g. training swimming, diving, water gymnastic);

d) the presence of additional facilities and areas outside the pool surround, which could increase the allowed number of users in the whole pool facility (e. g. saunas, rest areas, sunbathing areas, restaurants);

e) the type of users (e. g. adults, children, people with disabilities).

NOTE A typical occupancy ratio for swimming pools Type 1, mainly used for swimming and teaching swimming, would be a minimum of 3 m² of water area per bather.

6.1.1.3 Control of authorised access of users

The pool operator has the right to refuse access to users not conforming to the rules of the house.

For all Types of swimming pools children up to 8 years shall be accompanied by a person responsible for them.

For Type 1 authorized access to the pool shall be controlled, conforming to the house rules, through a check point or other effective controls (e. g. code access).

For Type 2 and Type 3, the risk assessment shall identify whether there is the need and the way to control the max. number of users.

6.1.1.4 Control of unauthorised access of users

Areas where access needs to be restricted (e. g. staff areas, plant rooms) shall be suitably marked and secured to prevent unauthorised access.

When a feature or a part of a facility is intended to be out of use (e. g. closed, while under repairs), unauthorised access shall be prevented.

NOTE The installation of a suitable method of prevention of unauthorised access especially of children (e. g. a fence, a shelter, a cover, an alarming system) could be considered.

6.1.2 Supervision arrangements

The risk assessment shall:

a) show for all Types whether poolside supervision is required and, if yes, its types and level;

b) take into account the balance between risks and prevention costs;

c) take into account any overriding requirements on supervision;

d) consider special risk factors, e. g.

1) deep water areas (e. g. swimmer areas, diving pools);
2) the presence of abrupt changes in water depth;

3) the swimming pool layout (e. g. division into separate areas);
4) if diving from the poolside (e. g. into shallow water, from raised positions) is allowed;
5) if there is equipment or features, at poolside or in the water, posing a significant additional risk (e. g. inflatable/floating playground equipment, wave pools, diving installations, leisure equipment, water slides);
6) crowded periods;
7) presence of critical user groups (e. g. users with special needs, unruly behaviours, youth and inexperienced);

as well as factors which possibly may decrease the risk, as:

e) enforceable house rules for safe behaviour;

f) the presence of devices preventing the access of children to the basins;

g) presence of technical devices for emergency detection (e. g. computer aided video systems, to detect users in difficulty and to warn the pool staff);

h) access restricted to defined user groups (e. g. hotel residents, camp site users, club members, hospital staff, patients).

The risk assessment shall also take into consideration the possibility of factors increasing the risks only occasionally (e. g. parties, happenings, availability of alcohol at poolside) which could require supervision only on that occasions.

Where a risk assessment determines that a pool does not require poolside supervision, the arrangements shall include:

— for all Types:

i) information to users prior to entrance, including signs in the hall, in the changing rooms and at the poolside, indicating that the pool is not staffed and drawing attention to simple rules of use and safety;

j) signs at poolside area showing the depth of the water;

— and additionally, for Type 1 and Type 2 only:

k) an alarm to summon help in an emergency and a notice giving instruction in its use;

l) suitable rescue equipment (e. g. poles, throwing ropes, buoyancy aids) available by the poolside, and clearly identifiable.

Whenever supervision is not provided, the user shall be informed:

— when arriving at the facility and when passing the control point;

— in the pool area.

A written safety procedure is required where a pool may be used without poolside supervision. The procedure shall be included in the pool operating procedures.

Whenever a public pool is in use without poolside supervision, a trained and competent member of the staff shall be designated as "on call" to respond immediately to the alarm and deal with any emergency.

6.1.3 Checking the pool site, the buildings and the associated technical equipment

Procedures for checking the pool site, the buildings and the associated technical equipment shall:

a) ensure that there has been no deterioration and that they are fit for purpose;

b) list the items of the risk assessment that shall be checked to ensure that no additional or increased risks have arisen since;

c) define which checks shall be carried out only by trained and competent persons (e. g. investigations for stress corrosion).

6.1.4 Checking the pool equipment and components and the safety devices

Procedures shall ensure that there has been no change of the parameters considered for the risk assessment (e. g. damage to the equipment and components, safety devices like barriers and handrails not in proper position, outlet grids not in position) which may result in increased risks.

NOTE For Type 1 and Type 2 pools a visual inspection should be carried out every opening day, before the pool is open to the public, particularly to check that the equipment is properly ready for use (e. g. protections correctly in place, components secured). For Type 3 a visual inspection should be carried out periodically.

6.1.5 Cleaning and disinfecting the premises

Procedures shall include how to select proper detergents and disinfecting agents. Manufacturer's advice shall be followed regarding application and storage. When floors are cleaned during pool operation, precautions shall be taken to protect against related risks (e. g. slippery surfaces, presence of chemicals, long hoses, machinery).

Chemicals used to clean the pool surround shall not adversely react with the chemicals used in the pool water. Particular attention shall be paid to avoid contamination of pool water by detergents and disinfectants, which could also affect the pool water control devices.

On the pool surround only the quantity of chemicals needed for that day shall be available.

NOTE For Type 1 and Type 2 pools, to check the quality and efficiency of cleaning and disinfection, periodical sampling and testing of microbiological contamination of the surfaces would be advisable.

6.1.6 Operation of water treatment systems

A dye test of the water circulation system of every pool, according to Annex A, shall be performed at the time of commissioning.

NOTE It is recommended that the dye test be repeated every 5 years, to ensure that all components are still working effectively.

Procedures for the operation of the water treatment system shall primarily conform to the operating instructions given by the manufacturer of the equipment. The procedures shall include a requirement to maintain a log book for the equipment.

6.1.7 Operation of heating, ventilation and air conditioning

Procedures for heating, ventilation and air conditioning shall primarily conform to the operating instructions given by the manufacturer of the equipment. They shall describe the operation of the equipment in accordance with requirements and utilisation taking into consideration the constructional safety (e. g. temperature, relative humidity, dew point). If the conditions of operation will be modified and/or after operational alteration an examination is necessary.

6.1.8 Operation of lighting system

Procedures shall ensure:

a) a minimum level of illumination according to EN 15288-1;

b) the effectiveness of the emergency illumination system;

c) procedures and instructions during special events with different illumination.

6.1.9 Maintenance of the pool equipment

Procedures shall primarily conform to the maintenance instructions given by the manufacturer of the equipment. They shall:

a) state the required maintenance, and its frequency;

b) indicate where remedial work may be necessary;

c) define the competence and/or qualifications for those doing the work.

Procedures shall also state that:

d) where maintenance work is undertaken during public use, suitable precautions, conforming to valid regulations, shall be taken to protect the public who may be present;

e) the required frequency of inspection for dosing lines and the related injection points.

6.1.10 Operation for selection, and safe delivery, storage, handling and use of chemicals

Procedures for selecting chemicals shall specify the criteria for selection of the most suitable products, based on relevant standards and on the information given by the supplier.

Procedures for safe delivery of chemicals shall be agreed between the supplier and the pool operator, on the basis of a safe delivery location, secured from access, and of the safety information available. They shall include a safe means of unloading the chemicals to the delivery area. In case of bulk delivery, suitable precautions (e. g. specific coupling, separate fill points clearly marked) shall be taken to prevent a chemical product being poured into the wrong tank.

Procedures for safe storage and handling of chemicals shall:

a) refer to the related Material Safety Data Sheets;

b) state the environmental conditions (e. g. temperature, humidity, effectiveness of ventilation) to be provided, and the means to check and record them;

c) state that only trained and authorized staff can store and handle chemicals;

d) indicate the PPE to be used for each type of chemical and for each activity;

e) provide proper instructions about how to handle and where to store each chemical, including the equipment (e. g. for transport) needed;

f) provide proper instructions for the case of spillage;

g) indicate the maximum quantity of each product which can be stored at the same time in each location;

h) indicate where and how to dispose empty containers/packages.

6.1.11 Applying and controlling the chemicals in pool water

Application of chemicals shall be performed to provide a pool water quality conforming to valid regulations.

Procedures for proper application shall:

a) specify safe systems of work to prepare solutions;

b) state that smoking is prohibited when handling chemicals;

c) concerning hand dosing:

   1) specify if hand dosing is always foreseen, or only as an emergency measure;
   2) describe the working practices that will ensure proper dilution of the chemicals into the pool water, to avoid peaks and to give a water quality that always complies with the parameters stated;
   3) state that direct application into the pool basin in presence of the users is always prohibited;

d) where automatic dosing is employed:

   1) state how to feed and control the equipment;

   2) define proper storage of the equipment during periods of shut-down.

6.1.12 Monitoring physical, chemical and microbiological quality of pool water

Procedures for monitoring the pool water quality shall include statements that prescribe:

a) the water quality parameters to be achieved (including pH, clarity, temperature, disinfection level, bacteriological quality);

b) the correct way of sampling the water, for both automatic and manual testing equipment;

c) the type, method and frequency of each test;

d) the proper way of recording and storing the related findings;

e) how to store the reagents and how to check their fitness for purpose (e. g. compliance with expiry dates);

f) the method and frequency of calibration of the equipment used, referring to the instructions of the producer.

6.2 Operational requirements for management of pool staff

6.2.1 General

The management of swimming pools consists of the operation and supervision of the premises, the technical plant and equipment, the features and the water related activities of the users.

In a swimming pool different types of supervision can be required — e. g. general supervision of swimming pool facility, supervision of dry activity areas, supervision of children's areas, supervision of sauna, supervision of swimming pool basin users.

The staff of a pool normally performs one or more of the following functions:

a) management and administration;

b) poolside supervisory staff;

c) technical staff;

d) teaching and coaching staff;

e) cleaning, servicing and selling and other generic staff.

The role of management is to plan, organize and define safe systems of work, implement, training, monitor and review.

NOTE To ensure safe operation of the swimming pools, the pool management should preferably have professional qualifications, covering the knowledge and understanding.

The personnel with a direct and essential influence on the safety of the users is the supervisory and technical staff. The following paragraphs give requirements for their deployment and training.

6.2.2 Poolside supervisory staff

6.2.2.1 General

The staff designated to supervise water areas and pool surrounds shall be trained and competent.

They may undertake other duties, as long as the supervisory levels given in the risk assessment are maintained.

NOTE Swimming teachers, being staff members or not trained and competent as stated in this paragraph, can cover more than one role at the same time only for their groups.

For the purposes of this standard, the following subclauses deal only with supervising water areas and pool surrounds.

6.2.2.2 Training and competence of lifeguards

The requirements for the training and competence of lifeguards shall include:

a) a minimum age;

b) physical and mental suitability to fulfil the task;

c) the ability to swim conforming to valid national requirements;

d) the ability to rescue persons drowning or in danger, appropriately validated;

e) knowledge of water safety and accident prevention;

f) the ability to recognise a casualty and competence in the principles of rescue;

g) understanding responsibilities under law;

h) competence in cardio-pulmonary resuscitation (CPR), first aid and spinal cord injury management;

i) familiarity with the swimming pool;

j) understanding of the pool operation procedures, valid for the respective place of work, and its rescue equipment;

k) competence in the safety procedures, validated by practical tests carried out and recorded at appropriate intervals at the site.

For paragraphs a), c), d), e), f), g), h) and k), compliance with national life guarding requirements is mandatory.

NOTE Lifeguards aged 16 to 18 should be under the supervision and responsibility of senior supervisory staff.

6.2.2.3 Training and competence of other pool supervisory staff

The requirements for training and competence of other pool supervisory staff depend on the task they are required to do and can require, depending from the results of the risk assessment, training and competence in one or more of the elements given above.

NOTE Supervisory staff members aged 16 to 18 should be under the supervision and responsibility of senior supervisory staff.

6.2.2.4 Deployment

Procedures for deployment of supervision shall take into account the operational characteristics of a facility, e.g.:

a) opening hours;

b) duty spells, necessity of rotation, breaks;

c) occupancy (number of users at a time), age, ability and location of users, and type of attendance;

d) proper overview of the designated water areas;

e) results of the updated risk assessment;

f) special activities, events, programmes;

g) distracting poolside activities;

h) presence of technical systems (e. g. computer aided video systems, motion detectors).

Procedures shall also take into account those characteristics of the swimming pool design which can affect the performance of the pool supervisory staff, influencing vision, hearing or concentration, including:

i) type and characteristics of the swimming pool;

j) size of the pool basins;

k) illumination;

l) glare and reflection;

m) acoustic effects;

n) the ventilation system;

o) heat and humidity;

p) special features provided (e. g. water slides, wave pools).

Procedures shall also state at least:

q) the qualifications and number of supervisory staff;

r) possible co-operation with third parties;

s) the areas of responsibility of each supervisor (water areas and pool surrounds).

Technical systems for supervision, (e. g. computer aided video systems, motion detectors) shall not replace human supervision but can be provided as an additional help.

6.2.2.5 Induction

Supervision staff shall receive specific initial training in the safety procedures of the site, validated by practical tests whose results are recorded.

Procedures shall state the training required for every aspect of supervision in line with the risk assessment and the written safety procedures.

6.2.2.6 Ongoing training

Supervision staff shall receive ongoing training in safety procedures and skills, to maintain their competence.

Staff competence shall be checked at appropriate intervals.

NOTE Training in dealing with physical violence should be provided, including de-escalation in conflicts.

6.2.2.7 Structuring the duties

On the basis of the results of the deployment, and to maintain appropriate levels of concentration, the procedures shall define:

a) the three-dimensional space location for which the respective supervisor is responsible;

b) the maximum period of uninterrupted supervision at a defined location;

c) the length of the working day;

d) the programmed breaks from duty and the way to grant an adequate level of supervision for this time;

e) the job rotation between activities at the poolside and away from the poolside.

6.2.2.8 Clothing and equipment

Pool supervision staff shall wear a distinctive uniform clothing, where necessary different for every task. Clothing shall be selected for the specific pool environment.

Proper equipment, including shoes, shall be made available to the supervisory staff.

6.2.3 Technical staff

6.2.3.1 Deployment

Procedures shall state the duties, numbers of staff and level of responsibilities and the required qualification for the respective jobs. They shall take into consideration:

a) the type of swimming pool;

b) the size of the pool basins;

c) the type, technology and size of the technical equipment;

d) manufacturer's guidance;

e) the operation timetable.

6.2.3.2 Training pool technical staff

The procedures shall define the type of training required for every role in respect of:

a) the type and size of the equipment;

b) the technology adopted;

c) the materials and chemicals used;

d) the manufacturer's recommendations.

Procedures shall also state:

e) the required level of knowledge in basic water treatment technology;

f) the required level of knowledge in pool procedures for maintaining water quality;

g) the necessary training.

6.2.4 Operation for selection and use of PPE

The procedures shall require the use of the relevant PPE.

For the chemicals used, they shall comply with the PPE stated by the relevant Material Safety Data Sheet.

6.2.5 Operation for recording incidents and accidents

Procedures for recording incidents and accidents shall state that every incident or accident which requires either first aid or/and emergency response, or an act to prevent an emergency, shall be recorded in a log in sufficient detail to allow subsequent analysis.

Procedures shall also state that periodic review of all incidents and accidents shall be formally executed at least once per year and after every major accident, with the aim of defining effective corrective/preventive actions.

6.3 Operational requirements for emergency procedures

6.3.1 General

When pools are staffed, procedures shall be prepared and distributed to the relevant staff at least for the following foreseeable emergencies:

a) fire;

b) structure/component/equipment failure;

c) a casualty in the water;

d) faecal/blood/vomit water contamination;

e) breakdown in pool water clarity;

f) physical violence;

g) a terrorist act;

h) contact with chemicals;

i) emission of toxic gas;

j) electrical failure;

k) lighting failure;

l) lightning storm.

Where supervising staff is not in place, a method to give guidance to the users in the above emergencies shall be stated.

Depending on the type of emergency, procedures shall foresee some main actions:

m) when possible, act quickly to prevent the emergency from escalating;

n) raise the alarm;

o) rescue;

p) evacuate;

q) perform first aid;

r) when possible, act to reduce the consequences of the emergency;

s) at every stage, avoid generating panic.

Procedures for these actions shall at least state for every case:

t) the identification of the area/facility affected and to be alerted/evacuated;

u) the restriction of the emergency activities to the affected area/facility only, avoiding alarm to areas/facilities/users not involved;

v) who shall be alerted/evacuated/rescued and in which order;

w) the methods and levels of alert suitable for every emergency.

6.3.2 Operational requirements for raising the alarm

Procedures for raising the alarm shall anticipate two stages, to be performed in the following order:

a) raise the internal alarm, alerting involved users and staff;

b) raise the external alarm, calling for proper emergency services.

6.3.3 Operational requirements for rescuing

Procedures for rescuing shall anticipate three stages, to be performed in the following order:

a) remove casualty from the danger;

b) first aid;

c) calling for proper emergency services.

Procedures shall also guarantee staff safety, e.g. by use of PPE if necessary.

6.3.4 Operational requirements for evacuation

Procedures for evacuation shall anticipate two stages:

a) clear the affected area/facility, in a controlled and systematic way;

b) prevent further access to the area/facility.

Procedures shall avoid generating panic.

6.3.5 Additional specific procedures for selected emergency cases

6.3.5.1 Operation in case of some organic water contaminations

6.3.5.1.1 Solid faecal contamination

Procedures shall state what to do to restore the situation when solid faecal contamination is detected, to ensure that there are no related risks for the users.

NOTE A typical sequence foresees the following steps:

a) remove the solid stool;

b) verify that the chlorine level is within the limits.

6.3.5.1.2 Liquid faecal/blood/vomit contamination of low volume pools

Procedures shall state what to do to restore the situation when liquid faecal/blood/vomit contamination of water in low volume pool basins is detected, to ensure that there are no related risks for the users.

NOTE A typical sequence foresees the following steps:

a) evacuate the basin;

b) empty the basin;

c) clean and disinfect the basin;

d) refill and treat the water;

e) re-open the basin.

6.3.5.1.3 Liquid faecal/blood/vomit contamination of medium/high volume pools

Procedures shall state what to do to restore the situation when liquid faecal/blood/vomit contamination of water in medium/high volume pool basins is detected, to ensure that there are no related risks for the users.

NOTE In case of incidents by liquid faecal and vomit contamination, which can imply presence of pathogens (e. g. cryptosporidium), a typical sequence foresees the following steps:

a) evacuate the basin;

b) apply a coagulant if technically possible;

c) increase the level of free chlorine or equivalent disinfectant to the top of the permitted range;

d) vacuum sweep the pool bottom, sending the water to the waste;

e) in case of faecal contamination, wait for six filtration cycles;

f) backwash the filters;

g) restore the level of free chlorine or equivalent disinfectant to normal;

h) re-open the basin.

In case of incidents by blood contamination, a typical sequence foresees the following steps:

i) evacuate immediately the area around the incident;

j) increase the level of free chlorine or equivalent disinfectant at least to the top of the permitted range;

k) restore the level of free chlorine or equivalent disinfectant to normal;

l) re-open the basin.

6.3.5.2 Operation in case of lighting failure

Procedures shall state at least that the first action shall be evacuation of the basins.

6.3.5.3 Operation in case of lightning storm

6.3.5.3.1 Operational requirements for indoor pools

If a lightning storm threatens, operation can be continued without restriction.

6.3.5.3.2 Operational requirements for pools with connected indoor/outdoor basins

If a lightning storm threatens, the outdoor basin has to be evacuated. The passage between indoor and outdoor pools shall be closed and the barriers (see EN 15288-1:2008, 5.6.3.3) installed. Under these circumstances, indoor operation can be continued without restriction.

Pools with connected indoor/outdoor basins not complying with the requirements of this paragraph shall be evacuated.

6.3.5.3.3 Operational requirements for pools with connected indoor/outdoor water related features

If a lightning storm threatens, indoor/outdoor features as rivers, crazy rivers, open slides and so on shall be evacuated and the access at both ends shall be suitably prevented.

6.3.5.3.4 Operational requirements for outdoor pools

If a lightning storm threatens, outdoor basins shall be evacuated. Users shall be ordered to leave the facility or to seek refuge in the buildings.

Sheltering under trees shall be prohibited, as it constitutes a life hazard.

6.3.5.4 Operational procedures in case of chemical emergencies threatening the users

Procedures for a chemical emergency threatening the users shall state at least:

a) how to raise the alarm for appropriate emergency service;

b) how to deal with users contaminated;

c) how to determine when evacuation is required (e. g. in case of significant toxic gas emission) and the related guidelines (e. g. against wind direction), or segregation of the affected area is sufficient.

7 Instruction to the users

7.1 General

Instruction to the users in a swimming pool shall be given in visible or audible form, or by a combination of both. The information supplied shall include safety instructions.

Information should preferably be in form of graphical symbols, according to relevant ISO standards if any. A supplementary text sign can be added in the language(s) of the country where the facility is installed.

Multilingual text signs, appropriate to the expected users, are preferred.

7.2 Information to the users

7.2.1 General

Information to the users shall include:

a) the rules for the use of the facility;

b) safety information/instructions (e. g. water depth);

c) for Type 1, and if necessary for Types 2 and 3, a basic orientation plan of the facility;

d) public information.

7.2.2 Rules for the use of the facility

The pool operator shall prepare a set of rules to be complied with by the users.

These rules shall at least indicate:

a) rules of admission;

b) recommended behaviour for use of pool basins, features and services;

c) allowed behaviour for use of pools, features and services e. g. consumption of alcohol, food and drink, use of glassware in and around the pool areas, smoking policy, prevention of unauthorized photography;

d) hygienic requirements, (e. g. to take a shower every time before entering a pool, not to contaminate the water during the use of the pool basins, do not wear outdoor footwear on the poolside);

e) to obey the instructions of the staff, if any.

The functions of the staff, if any, should be specified, including the right to enforce the house rules, and to act when someone is not complying with them.

The users shall be notified of the rules for the use of the facility at least by a display placed at the entrance to the controlled area, or at the reception for Type 2 pools.

Additional displays inside the facility are recommended.

7.2.3 Safety information/instructions

7.2.3.1 Safety signs

If safety signs are used, they shall conform to the relevant ISO standards.

The location and mounting of the safety signs shall be considered at the design stage, see EN 15288-1:2008, 5.3. The pool operator shall be responsible for the signage, ensuring the suitability of the signage in relation to any subsequent revisions of the risk assessment and its maintenance.

7.2.3.2 Emergency and warning signals

Emergency signals shall conform to valid regulations.

Emergency alarm switches for general use shall be built to avoid unintentional operation.

If a box with a breakable front window is used, it shall be of a type non-hazardous to bare feet.

After operation by users or staff, only authorized staff shall be able to reset the emergency warning signals.

Audible/visible warning signals shall be given to alert users when equipment or water features might interfere with users (e.g. water cannons, wave machines, moveable floors).

Warning signals shall be audible/visible and effective to all the users present in the relevant area.

7.2.4 Basic orientation plan of the facility

It shall be shown prior to the entry to, and inside the controlled area, clearly indicating:

a) the location of pool basins and services;

b) the designation of the areas;

c) information suitable to allow access also to people with special needs;

d) information for safe use of the facility.

7.2.5 Public information

Public information (e. g. toilets, lockers, cafeteria, pools, slides), shall also consider guidance for people with special needs.

Wherever possible, public information signs shall conform to ISO 7001.

Annex A
(normative)

Dye test — Operational Instructions

A.1 Provide a quantity of Eriochrom Black T of about 100 g every 500 m^3 of basin water. Consider the basin volume plus 60 % of the usable volume of balance tank, if any.

A.2 During the test bypass components of the water treatment equipment which use filtering media which can interfere with the pigment (e. g. active carbon, hydro anthracite) to avoid adsorption, and set up the equipment to compensate the lowered water column.

A.3 Lower to 0 the chlorine value, e. g. by using thiosulphate.

A.4 Prepare a 1 % solution of Eriochrom Black T in water with a zero chlorine content (100 g pigment each 10 l water), in the quantity of 10 l of solution every 500 m³ of basin water as defined in A.1.

A.5 Apply the solution into the circulation system:

— in the balance tank or into an outlet of the overflow channel; or

— into a skimmer; or

— through a dosing pump and an injector into the piping of the water treatment system.

Application shall be such that a continuous flow of pigmented water in the basin is granted for at least 15 min.

A.6 Verify the progress of colouration, and register it through photographs or a video recording. Measure the time lapse from the initial apparition of pigmented water into the basin up to a complete colour uniformity.

A.7 Compliance with the first part of the Dye test is achieved if the uniformity is reached within 15 min.

A.8 Wait until stabilisation is achieved.

A.9 Apply at the same point chlorine, with the same criteria used for Eriochrom Black T, in a quantity of about 5 mg/l of basin water.

A.10 Verify the progress of water clarification and register it through photographs or video recording. Measure the time lapse from the initial application of chlorine up to a complete water clarification.

A.11 Compliance with the second part of the dye test is achieved if the clarification is reached within 15 min.

Annex B
(informative)

Samples of accident recording form

B.1 Sample of accident recording form from the Netherlands

Accident form			
			Mark there the exact location of the injuries
For small (plaster list) accidents at least fill in the marked fields			
Name of the victim			
Address			
City			
First aid by (person)			
Further treatment by			
Insurance company			
Necessary further assistance	☐ First aid in swimming pool ☐ Hospital ☐ (Family)doctor		
Date of birth or age of the victim		M/F	
Swim experience or level		Date of accident:	
Personal circumstances (e.g. illness)		Time of accident:	
Activity during accident	Exercise / Aquarobics / Recreational/		
Location of the accident			
Reason for the accident	☐ Spraining		
	☐ Fall at even level (e.g. slipping), namely		
	☐ Fall at different level (e.g. stairs), namely		
	☐ Collision with an other person		
	☐ Collision with an object (e.g. ball, column, pool bottom):		
	☐ Overburdening		
	☐ Drowning		
	☐ Entangled or sucked		
Involved products	☐ Water slide ☐ Diving board ☐ Waves ☐		
Type of the injuries	☐ Spraining ☐ Fracture ☐ Superficial ☐ Open wound		
Location of the injuries	☐ Head	☐ Eye ☐ Nose ☐ Mouth ☐ Skull ☐ Ear ☐ Chin	
	☐ Body	☐ Back ☐ Breast ☐ Collar bone ☐ Stomach/belly ☐ Hip	
	☐ Arm	☐ Shoulder ☐ Upper arm ☐ Elbow ☐ Fore-arm	
	☐ Leg	☐ Upper leg ☐ Knee ☐ Lower leg ☐ Feed	
	☐ Other / unknown		
Kind of injure	☐ Small (Plaster list) ☐ Serious (Accident register)		
Actions undertaken related to the reason of the accident	.....		
When possible: Mark the exact location of the accident on the backside of this form (on a floor plan or sketch)			

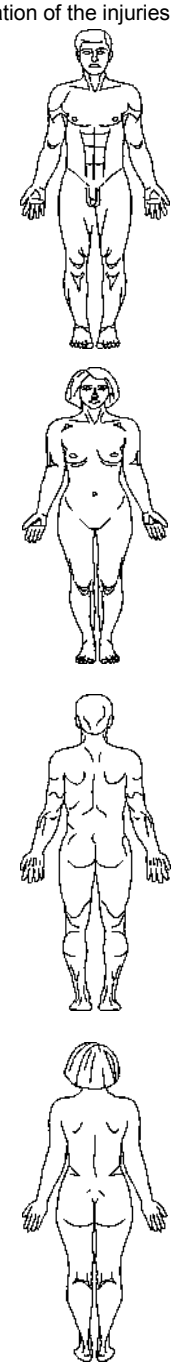

Figure B.1 — Sample of accident recording form from the Netherlands

B.2 Sample of accident report form from United Kingdom

ACCIDENT FORM (Public Only)

To be completed by the duty manager for all accidents to members of the public

Distribution:

1. Centre copy
2. Personnel dept. for Health & Safety Officer
3. Contract manager

NUMBER:

<table>
<tr><td colspan="2">1. Centre:</td><td>Date:</td><td>Time:</td></tr>
<tr><td colspan="2">2. Name of Injured Person:
Address:
Telephone No.</td><td colspan="2">3. Age (if under 18):

Gender: M ☐ F ☐</td></tr>
<tr><td colspan="4">4. Exact Location of Accident and Activity partaking:</td></tr>
<tr><td colspan="4">5. Details of Accident (Show location if in pool on reverse):</td></tr>
<tr><td colspan="4">6. Apparent Injuries (use manikin on reverse):</td></tr>
<tr><td colspan="2" rowspan="3">7. Treatment Given:

By Whom:</td><td colspan="2">8. Was an Ambulance Required? YES/NO</td></tr>
<tr><td colspan="2">9. For under 18’s — were parents informed? YES/NO</td></tr>
<tr><td colspan="2">10. Did the injured person resume activities? YES/NO</td></tr>
<tr><td colspan="4">11. Witnesses:
Name Name
Address Address
Telephone No. Telephone No.</td></tr>
<tr><td colspan="4">12. This block must be signed by the Duty Manager on duty at the time of the accident
Name Signature Date Time
If as a result of an accident any member of the public is taken to hospital by whatever means then the Health & Safety Officer must be informed as soon as possible but no later than within 24 hours.</td></tr>
<tr><td colspan="4">13. RIDDOR Report required: YES/NO
If Yes Date and Time HSE Telephoned
Date F2508 Raised Dispatched
Signature Date
To be completed by the Manager</td></tr>
</table>

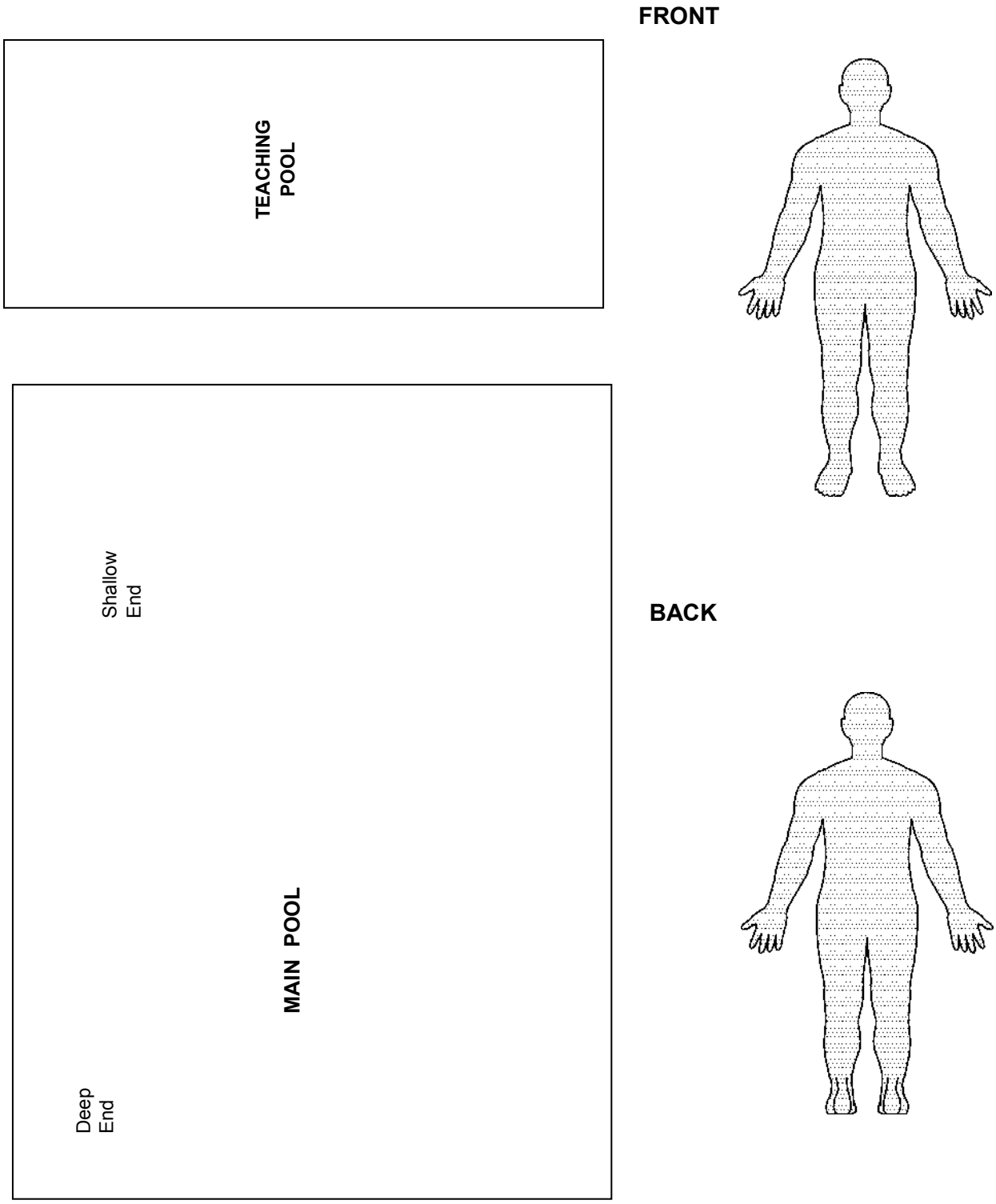

Figure B.2 — Sample of accident report form from United Kingdom

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