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Interested committees:

Title: Draft BS ENISO 20380 Public swimming pools - Computer vision systems for the detection of drowning accidents in swimming pools - Safety requirements and test methods

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Introduction

This draft standard is based on international discussions in which the UK has taken an active part. Your comments on this draft are invited and will assist in the preparation of the consequent standard. Comments submitted will be reviewed by the relevant BSI committee before sending the consensus UK vote and comments to the international secretariat, which will then decide appropriate action on the draft and the comments received.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	(7)
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/ Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	

DRAFT INTERNATIONAL STANDARD

ISO/DIS 20380

ISO/TC 83

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2017-01-24

Public swimming pools — Computer vision systems for the detection of drowning accidents in swimming pools — Safety requirements and test methods

Piscines publiques — Systèmes de vision par ordinateur pour la détection de noyades en piscines — Exigences de sécurité et méthodes d'essai

ICS: 35.240.99; 97.220.10

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ISO/CEN PARALLEL PROCESSING



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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ISO 20380 was prepared by Technical Committee ISO/TC 83, Sports and other recreational facilities and equipment.

Introduction

Currently available epidemiological data shows that despite the presence of lifeguards, drowning (according to the WHO¹⁾) process of experiencing respiratory impairment from submersion/immersion in liquid) subsists in public swimming pools with entrance fees. A certain number of studies [6], [7] together demonstrate that for several reasons (whether physiological, cognitive, architectural, organisational etc.), lifeguards may sometimes find themselves in difficulty when watching over swimmers, knowing that a potential risk of a drowning accident may occur.

It is important to bear in mind that a lifeguard can supervise and inform swimmers to help ensure their safety as well as anticipate and intervene early to prevent an accident occurring

Computer vision systems do not save people from drowning, as saving a drowning person necessarily requires human intervention.

Computer vision systems can only be used to support a competent person on duty. Installation and use of computer vision systems cannot serve as an excuse to reduce human monitoring of swimming pools or to modify organization of monitoring, under any circumstances, in reference to applicable national regulation.

In addition to the safety organization, these tools are solely for use by competent person, and having received prior training in the operational performances of these systems in accordance with the manufacturers' and the swimming pool operators' instructions.

Not all possible drowning accidents can be detected by the systems described in this standard, e. g. persons floating on or close under the water surface. Although the current state of the art does not allow 100 % effectiveness. For several years, these technologies have proved their worth worldwide, by regularly helping lifeguards to identify potential drowning accidents that they had not observed.

Whilst it is possible to retrofit this type of equipment to an existing pool, consideration of its introduction is best at the pool design stage.

In order to really enhance the drowning prevention in swimming pools, computer vision systems are designed to:

- Scan continuously and redundantly the pool basin;
- Detect mathematically a solid mass, without trajectory, lying at the pool basin bottom;
- Trigger electronically an alarm within a few seconds after the detection;
- Limit false alarms by automatically differentiating a solid mass from light and shadow projections on the texture of the pool basin and by discriminating without human intervention a motionless solid mass above and below the water surface.

The performance of the system can be reduced by the following factors:

- Number of swimming pool users/swimmers in the pool basin;
- Water depth;
- Water clarity;
- Lighting conditions;
- Swimming pool attractions;
- Moveable floors and booms;
- Changes of the construction.

1) WHO: World Health Organization