BRITISH STANDARD

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15154-2:2006

Emergency safety showers —

Part 2: Plumbed-in eye wash units

The European Standard EN 15154-2:2006 has the status of a British Standard

ICS 71.040.10

BSI
British Standards

National foreword

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A list of organizations represented on LBI/18 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Douches de sécurité - Partie 2 : Unités de lavage d'yeux raccordées au réseau d'eau

Sicherheitsnotduschen - Teil 2: Augenduschen mit Wasseranschluss

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Foreword

This document (EN 15154-2:2006) has been prepared by Technical Committee CEN/TC 332 “Laboratory 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of an identical text or by endorsement, at the latest by March 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

EN 15154 consists of the following parts, under the general title *Emergency safety showers*

- Part 1: Plumbed-in body showers for laboratories
- Part 2: Plumbed-in eye wash units
- Part 3: Portable body showers (in preparation)
- Part 4: Portable eye wash units (in preparation)
- Part 5: Plumbed-in body showers for production facilities (in planning)

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Introduction

Plumbed-in eye wash units are designed and intended to be installed in close range of persons working in a potentially hazardous area. The main purpose of these devices is to immediately deliver flushing fluid in sufficient volume to flush the eyes following exposure to injurious substances or heat. With this accomplished the injured person can proceed to medical care.

1 Scope

This document is a product specification, giving performance requirements for emergency safety eye wash units connected to the water supply. It is applicable to plumbed-in eye wash units only.

Requirements are given in respect of the performance, installation, adjustment and marking of the eye wash units, as well as installation, operation and maintenance instructions to be given by the manufacturer.

NOTE Attention is drawn to national regulations which may apply in respect of the installation and use of eye wash units.

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.

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs in workplaces and public areas*

3 Terms and definitions

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

3.1
emergency safety eye wash unit
device specially designed and intended to deliver a flushing fluid to irrigate and flush the eyes and to sufficiently wash away contaminants or to dilute them, rendering them harmless

3.2
plumbed-in emergency safety eye wash unit
emergency safety eye wash unit that is permanently connected to a continuous water supply

4 Performance

4.1 Flow rate of water

Plumbed-in eye wash units shall be designed to deliver a constant flow rate of minimum 6 l/min at a flow pressure to be specified by the manufacturer and to be measured where the eye wash unit is connected to the water system. Eye wash units shall be capable of delivering this supply for a minimum of 15 min.

The velocity of the water shall be low enough to be non-injurious to the user.

Nozzle(s) shall be protected from airborne contaminants. Whatever means is used to afford such protection, its removal shall not require a separate motion by the user when activating the eye wash unit.

4.2 Jet height

The jet of water supplied by the nozzle(s) shall spray at a minimum height of 100 mm and may spray at a maximum height of 300 mm both measured from the nozzle centre, before tipping over or collapsing.

4.3 Water quality

Potable water or water of a similar quality complying with European or national standards is required for eye wash units.

Materials used in the construction of the eye wash unit shall not affect the water quality or contaminate the water supply.

4.4 Water temperature

Information on water temperatures is given in Annex A (informative).

NOTE Attention is drawn to national regulations which may apply in some European countries, e. g. in Sweden (see Bibliography [1] and [2]).

5 Design requirements for installation

The outlet nozzle(s) on plumbed-in eye wash units mounted in fixed positions, shall be designed to be installed at a height of (1 000 ± 200) mm above the level on which the user stands and at least 150 mm from the nearest wall or obstruction.

6 Valve

For manual operation, the valve shall be opened in a single operation by turning or moving a valve actuator to maximum 90° or maximum 200 mm stroke. The maximum force for the operation shall be 100 N or the maximum torque 7 Nm. By using this force/torque, the valve shall be fully open within 1 s.

For automatic operation, the valve shall be fully open within 1 s and shall be fail-safe at the open position if operated electrically.

The valve shall not close automatically once it has been opened. The direction of operating the valve actuator shall be clearly visible and unmistakable.

The valve actuator shall be large enough to be easily located and operated by the user even when wearing protective gloves.

7 Outlet Nozzle(s)

The unit shall be designed to provide enough room to allow both eyelids to be held open while the eyes are in the water flushing stream.

It shall only be possible to make adjustments with a tool to the direction of spray of the outlet nozzle(s).

The outlet nozzle(s) shall be removable for maintenance but only by use of a tool.

8 Manufacturer's information

The manufacturer shall supply with the emergency eye wash unit information on installation, operation and maintenance as well as the method and frequency of routine testing.

NOTE Attention is drawn to national regulations that might apply for installation, maintenance and routine testing.

9 Marking

The eye wash unit shall be clearly and permanently marked showing requirements for minimum and maximum flow pressure and the maximum static pressure. Marking shall be performed by the manufacturer and shall show the name of the manufacturer and the model/article number.

In addition, a safety sign in accordance with ISO 3864-1 displayable near the eye wash unit shall be supplied with each emergency eye wash unit.

Annex A
(informative)

A.1 Water temperature

Continuous and timely irrigation of affected tissues for the recommended irrigation period are the principal factors in providing first aid treatment. Providing water at temperatures conducive to use for the recommended irrigation period is considered an integral part of providing suitable facilities. Medical recommendations suggest water at tepid temperatures be delivered to affected chemically injured eyes. Temperatures in an excess of 37 ºC have proven to be harmful to the eyes and can enhance chemical interaction with the eyes and skin.

While cold water temperatures provide immediate cooling after burns or chemical contact, prolonged exposure to cold water can result in the premature cessation of first aid treatment. Recent information indicates that a temperature of 15 ºC is suitable for the lower parameter for tepid water.

A.2 Filter

To avoid a build-up of water-borne contaminants, the water supply pipe can be fitted with a fine mesh filter.

Bibliography

[1] AFS 1997:10, Provisions issued by the National Board of Occupational Safety and Health concerning Laboratory Work with Chemicals, together with General Recommendations on the Implementation of the Provisions – Section 26

[2] AFS 1999:07, Provisions issued by the National Board of Occupational Safety and Health concerning First Aid and Crisis Support, together with General Recommendations on the Implementation of the Provisions – Section 9

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