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Varnostne prhe za prvo pomoč - 6. del: Večšobne prhe za spiranje telesa s priključkom na vodovod za uporabo zunaj laboratorijev

Emergency safety showers - Part 6: Plumbed-in multiple nozzle body showers for sites other than laboratories

Sicherheitsnotduschen - Teil 6: Körperduschen mit mehreren Duschköpfen und Wasseranschluss für andere Standorte als Laboratorien

Douches de sécurité - Partie 6: Douches multijets pour le corps raccordées au réseau d'eau utilisées ailleurs que dans les laboratoires

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If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 15154-6:2018) has been prepared by Technical Committee CEN/TC 332 “Laboratory equipment”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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: Non-plumbed-in body showers*
- *Part 4: Non-plumbed-in eyewash units*
- *Part 5: Water overhead body showers for sites other than laboratories*
- *Part 6: Plumbed-in multiple nozzle body showers for sites other than laboratories*

This document prEN 15154-6 is part of a series of standards on emergency safety showers dealing with plumbed-in multiple nozzle body showers, used on sites other than laboratories (see Table 1).

Table 1 — Subject areas covered under the EN 15154 series of standards and by this part 6 of EN 15154

Part of EN 15154	Type	Laboratories	Sites - other than Laboratories	Non plumbed-in	Plumbed-in
1	Body shower	X ^c			X
2	Eye-wash unit	X	X		X
3	Body shower	X ^a	X ^a	X ^a	
4	Eyewash unit	X	X	X	
5	Body shower		X ^c	X ^b	X
6	Body shower		X		X

^a Non plumbed-in body showers affected by EN 15154-3 are fixed, transportable or portable.

^b Non plumbed-in body showers affected by EN 15154-5; Tank showers and Trailer-mounted.

^c In possible combination with eye wash units.

Introduction

Emergency safety body showers for sites other than laboratories are designed and intended to be installed in close range of persons working in a potentially hazardous area exposed to the risk of burns and/or hazardous chemical substances getting splashed onto all or part of the body.

The main purpose of these devices is to deliver immediately a flushing fluid in a volume sufficient to extinguish flames and/or to flush the body following exposure to injurious substances or heat.

Once this is accomplished, the injured person can proceed to medical care.

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1 Scope

This document is a product specification, giving performance requirements for plumbed-in multiple nozzle emergency safety body showers which are permanently connected to a water supply and installed on industrial and logistic sites.

Emergency safety body showers using fluid other than water are not considered in this standard.

This standard also specifies requirements in respect of installation, adjustment and marking of the showers as well as operation and maintenance instructions to be given by the manufacturer.

NOTE 1 Plumbed-in emergency safety body showers designed for laboratory facilities are dealt with in EN 15154-1.

NOTE 2 Water overhead body showers for sites other than laboratories are dealt with in prEN 15154-5.

NOTE 3 Attention is drawn to national regulations which may apply in respect of the installation and use of emergency safety showers.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 420, *Protective gloves — General requirements and test methods*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

emergency safety shower

device specially designed and intended to deliver a flushing fluid to extinguish flames and to sufficiently wash away contaminants or to dilute them, rendering them harmless

[SOURCE: EN 15154-1:2006, 3.1]

3.2

multiple nozzle emergency safety body shower

emergency safety body shower with multiple spray heads delivering water from head to feet

4 Performance

4.1 Flow rate

The water supplied by the shower shall be of constant flow pressure and flow rate as specified by the manufacturer

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The flow rate shall be at least 60 L/min.

The flow pressure shall be specified and measured where the shower is connected to the water system.

4.2 Minimum operational time

The shower shall be able to deliver water at a constant manufacturer-specified pressure, and continued for at least 15 min.

NOTE An intervention time of less than 10 s and speedy removal of clothing can help effective decontamination.

4.3 Water quality and water temperature

Potable water or water of a similar quality complying with European or national standards is required for body showers.

Materials used in the construction of the shower shall not affect the water quality or contaminate the water supply.

NOTE Guidance on water temperature is given in A.1.

4.4 Water distribution

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

4.5 Type test**4.5.1 General**

Water distribution shall meet the requirements listed below and illustrated in Figure 1:

4.5.2 Spray requirement

The nozzle layout shall be designed such that the body, represented by a cylinder of height $A = 2\,000$ mm with a base formed by a circle of diameter 550 mm, is jet-sprayed directly over its entire surface.

By means of a UV lamp, visual testing of the distribution efficiency of the nozzles shall be made by washing off a fluorescent solution applied to the entire surface of the body model described under Figure 1 within maximum of 90 s.

4.5.3 Spray pattern requirement

At least 90 % of the water sprayed shall collect in a cylinder of height $A = 2\,000$ mm with a base formed by a 550 mm-diameter cylinder. The subdistribution of this net total collected water volume shall be as follows:

- lower limbs: $(25+/-5)$ % over a height $B = 825$ mm corresponding to the lower limbs (height from foot to inside leg),
- abdomen: $(25+/-5)$ % over a height $C = 325$ mm corresponding to the abdomen (height from inside leg to elbows, with arms by the sides),
- chest: $(30+/-5)$ % over a height $D = 425$ mm corresponding to the chest (height from elbows to shoulders, with arms by the sides),
- head and neck: $(20+/-5)$ % over a height $E = 425$ mm corresponding to the head plus neck section (height from the shoulders to the crown of the head).

4.5.4 Measuring device

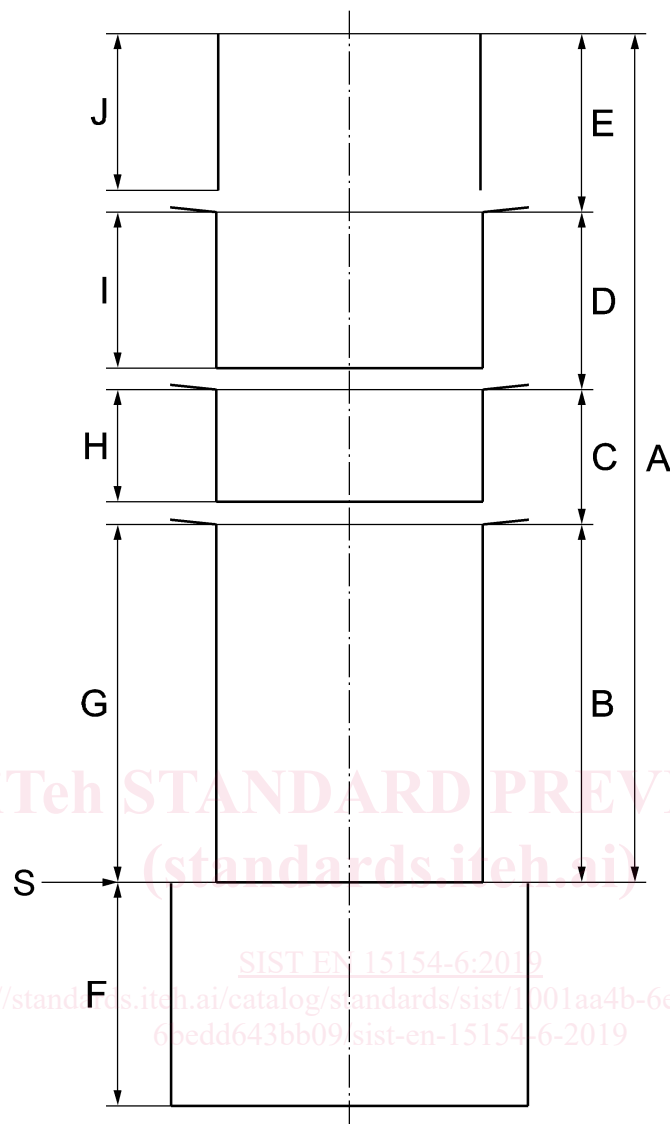
The device used to measure the volume of water collected shall be formed of five vats, as illustrated in Figure 1:

- F collects the water flowing down from height B. It shall have a 750 mm diameter base. The major axis is the axis of the cylinder symbolizing the human body.
- G collects the water flowing down from height C. To achieve this, a 100 mm-wide collared-rim water collector shall be adjusted-to-fit, and the height of vat H shall be cut to 50 mm shorter than height C.
- H collects the water flowing down from height D. To achieve this, a 100 mm-wide collared-rim water collector shall be adjusted-to-fit, and the height of vat I shall be cut to 50 mm shorter than height D.
- I collects the water flowing onto and into height E. To achieve this, a 100 mm-wide collared-rim water collector shall be adjusted-to-fit and the height of vat J shall be cut to 50 mm shorter than height E.
- J channels the water flowing onto and into height E and towards vat I. To achieve this, the height of vat J shall be cut to 50 mm shorter than height E.

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Key

- A total net height of the cylinder representing the human body = 2 000 mm.
- B height of the cylinder corresponding to the lower limbs = 825 mm.
- C height of the cylinder corresponding to the abdomen = 325 mm.
- D height of the cylinder corresponding to the chest = 425 mm.
- E height of the cylinder corresponding to the head and neck = 425 mm.
- F cylindrical vat
- G cylindrical vat corresponding to body-section B
- H cylindrical vat corresponding to body-section C
- I cylindrical vat corresponding to body-section D
- J cylindrical vat corresponding to body-section E, featuring a hole pierced in the base. S: Floor level of the emergency safety shower basin.

Figure 1 — Spray pattern distribution of a multiple nozzle emergency body shower