SLOVENSKI STANDARD
SIST EN 12259-4:2001

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Vgrajene naprave za gašenje - Sestavni deli sprinklerjev in sistemov s pršečo vodo - 4. del: Naprave za alarmiranje z vodnim pogonom

Fixed firefighting systems - Components for sprinkler and water spray systems - Part 4: Water motor alarms

Orstfeste Löschanlagen - Bauteile für Sprinkler- und Sprühwasseranlagen - Teil 4: Wassergetriebene Alarmglocken

Installations fixes de lutte contre l'incendie - Composants des systemes d'extinctions du type Sprinkleur et a pulvérisateur d'eau - Partie 4: Turbines hydrauliques d'alarmes

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ICS:

13.220.10	Gašenje požara	Fire-fighting
13.320	Alarmni in opozorilni sistemi	Alarm and warning systems

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Fixed firefighting systems - Components for sprinkler and water spray systems - Part 4: Water motor alarms

Installations fixes de lutte contre l'incendie - Composants des systèmes d'extinctions du type Sprinkleur et à pulvérisation d'eau - Partie 4: Turbines hydrauliques d'alarmes

Ortsfeste Löschanlagen - Bauteile für Sprinkler- und Sprühwasseranlagen - Teil 4: Wassergetriebene Alarmglocken

This European Standard was approved by CEN on 17 December 1999.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 191 "Fixed firefighting systems", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by August 2000, and conflicting national standards shall be withdrawn at the latest by August 2000.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

This part of EN 12259 is one of a number of European Standards prepared by CEN/TC 191 covering components for automatic sprinkler and water spray systems.

They are included in a series of European Standards planned to cover:

a) automatic sprinkler systems (EN 12259[1)]);

b) carbon dioxide systems (EN 12094[1)]);

c) powder systems (EN 12416[1)]);

d) explosion protection systems (EN 26 184);

e) foam systems (EN 13565[1)]);

f) gas systems (EN ISO 14520 and EN 12094)[1)];

g) hydrant and hose reel systems (EN 671);

h) smoke and heat control systems (EN 12101[1)]);

i) water spray systems[1)].

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[1] Under preparation

EN 12259 has the general title Fixed fire fighting systems - Components for sprinkler and water spray systems and will consist of the following Parts:

Part 1 : Sprinklers

Part 2 : Wet alarm valve assemblies

Part 3 : Dry alarm valve assemblies

Part 4 : Water motor alarms

Part 5 : Water flow detectors

Part 6 : Pipe couplings

Part 7 : Pipe hangers

Part 8 : Pressure switches

Part 9 : Deluge alarm valve assemblies

Part 10 : Multiple controls

Part 11 : Medium and high velocity water sprayers

Part 12 : Pump sets

Annexes A, B, C, D, E, F and G, give test methods and are normative.

Annex H gives an example of a test schedule suitable for type approval of conventional designs, and is informative.

Where reference is made to the application of components having imperial dimensions it has been necessary to use imperial units where appropriate.

This standard is to be entrusted for use to qualified and experienced organisations which have a capability to design and manufacture to recognised international standards.

1 Scope

This Part of EN 12259 specifies requirements for construction and performance of water motor alarms for use in conjunction with alarm valves conforming to EN 12259-2, EN 12259-3 and prEN 12259-9:1999 used in automatic sprinkler systems complying with prEN 12845:1997 and water spray systems conforming to the relevant european Standard[1)]

Type approval tests and a recommended test schedule for type approval testing are also given.

Auxiliary components or attachments to water motor alarms are not covered by this Part of EN 12259.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12259-2	Fixed firefighting systems - Components for sprinkler and water spray systems - Part 2: Wet alarm valve assemblies
EN 12259-3	Fixed firefighting systems - Components for sprinkler and water spray systems - Part 3: Dry alarm valve assemblies
prEN 12259-9:1999	Fixed firefighting systems - Components for sprinkler and water spray systems - Part 9: Deluge valves
prEN 12845:1997	Fixed firefighting systems - Automatic sprinkler systems - Design and installation
ISO 7-1	Pipe threads where pressure-tight joints are made on the threads - Part 1: Dimensions, tolerances and designation

1) Under preparation

3 Terms and definitions

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

3.1
water motor alarm
Hydraulically actuated alarm device fitted to an alarm valve to provide a local audible alarm when the sprinkler installation operates.

3.2
alarm valve
Check valve, of the wet, dry or deluge type that also initiates the water motor alarm when the sprinkler installation operates.

3.3
pelton wheel
Device which is rotated by the impingement of a water jet.

3.4
rated working pressure
Maximum pressure at which the device is intended to operate.

3.5
minimum response pressure
Lowest pressure at the water motor alarm inlet which causes rotating parts to turn continuously.

4 Construction requirements

4.1 Connections

4.1.1 All threaded waterway connections shall comply with ISO 7-1.

4.1.2 The water motor alarm shall have:

a) a threaded opening for the water supply of not less than 20 mm nominal diameter; and

b) a threaded drain connection with a cross-sectional area of at least 50 times the cross-sectional area of the water motor alarm nozzle bore.

4.2 Nozzles

4.2.1 Nozzles shall be made of bronze, brass, monel metal or austenitic stainless steel.

4.2.2 Nozzles shall have a bore of not less than 3 mm diameter.

4.3 Strainers

The water motor alarm shall have a strainer which shall be either integral with the casing or fitted immediately upstream of the water motor alarm inlet connection.

The strainer shall be made of bronze, brass, monel metal or austenitic stainless steel. The strainer shall be accessible for cleaning.

The strainer mesh shall have openings with a maximum dimension not more than two-thirds of the nozzle bore diameter. The total area of openings in the strainer mesh shall be not less than 10 times the cross-section of the nozzle bore.

4.4 Enclosures

The moving parts of the water motor alarm shall be covered.

Enclosures of the moving parts shall protect against sedimentation, weather, birds and vermin.

4.5 Bearings

All bearings shall be maintenance free.

5 Performance requirements

NOTE A testing schedule and example of test specimen numbers for water motor alarms is given in table H.1.

5.1 Resistance to pressure

The water motor alarm inlet and any strainer assembly shall withstand a pressure of 24 bar for a period of 5 min without leakage or failure when tested in accordance with annex A.

5.2 Resistance to high and low temperatures

When tested in accordance with annex B, after exposure to high and low temperatures, the water motor alarm shall be capable of sounding at inlet pressures between 0,5 bar and 12 bar.

5.3 Resistance of non-metallic elements to ageing

5.3.1 After ageing of non-metallic elements in air in accordance with C.2 there shall be no cracking of these elements and aged elements shall not prevent the sounding of the water motor alarm when tested in accordance with E.1 Method 3.

5.3.2 After ageing of non-metallic elements in warm water in accordance with C.3 there shall be no cracking of these elements, and aged elements shall not prevent the sounding of the water motor alarm when tested in accordance with E.1 Method 3.

5.4 Resistance of non-metallic bearings and pelton wheel to water immersion

The water motor alarm if fitted with a non-metallic bearing or pelton wheel shall be capable of operating at inlet pressures of 0,5 bar to 12 bar when tested in accordance with annex D.

5.5 Operation

5.5.1 The water motor alarm shall sound continuously, when tested in accordance with annex E.1 Methods 1 and 2. After testing, all parts of the water motor alarm shall drain automatically.

5.5.2 The minimum response pressure shall be not more than 0,35 bar measured at the inlet of the water motor alarm when tested in accordance with E.2.

5.6 Sound level

The minimum sound levels at a distance of (3000 ± 5) mm of the water motor alarm shall not be less than as given in table 1, when determined in accordance with annex F.

Table 1 - Minimum sound levels

Inlet pressure [bar]	Minimum sound level at any of three locations [dB(A)] ABC	Average sound levels of the three locations [dB(A)]
0,5	not applicable	70
2-10	80	85

5.7 K-factor

The average K-factor shall be not more than 20 when tested in accordance with annex G.

6 Marking

6.1 The alarm gong shall be marked with the words "Sprinkler Alarm". The markings shall be directly on the alarm gong with painted, raised or depressed cast letters, or on a metal label mechanically attached. The letters shall be not less than 25 mm in height.

6.2 The water motor alarm shall also be marked with the following:

a) name or trade mark of manufacturer;

b) model number, catalogue designation or equivalent marking;

c) name of device;

d) year of manufacture;

e) factory of origin, if manufacture is at two or more factories.

The markings shall be either:

a) directly on the water motor alarm with raised or depressed cast letters; or

b) on a metal label mechanically attached (for example with rivets or screws); a cast label shall be of non-ferrous metal.

Cast markings shall be in letters and figures at least 4,7 mm high, and raised or depressed at least 0,75 mm. Cast label markings shall be at least 4,7 mm high and raised or depressed at least 0,5 mm. Letters on an etched or stamped label shall be at least 4,7 mm high. The year of manufacture shall be stamped in figures at least 3 mm high.

7 Installation and maintenance

7.1 Instruction charts

Details of the installation and maintenance procedures including an illustration shall be provided with the water motor alarm.

7.2 Installation and servicing procedures shall not require the use of non-standard tools, or the drilling, welding or cutting of the water motor alarm or its parts except for cutting to length or threading of a part (i.e. drive shaft, pipework).