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ISO/TC 21/SC 5

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Fire protection — Automatic sprinkler systems

Part 2:
Requirements and test methods for sprinkler system alarm valves, check valves, water motor alarms, retard devices and accelerators

Protection contre l'incendie — Systèmes d'extinction automatiques du type sprinkler —

Partie 2: Exigences et méthodes d'essai des soupapes d'alarme hydrauliques, des limiteurs de surpression et des dispositifs d'alarme à moteur hydraulique

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at ~~www.iso.org/patents~~.www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 5, *Fixed firefighting systems using water*.

This fourth edition cancels and replaces the third edition (ISO 6182-2:2012), as well as ISO 6182-3:2012, ISO 6182-4:2019, ISO 6182-5:2012, ISO 6182-6:2020 and ISO 6182-8:2019.

The main changes are as follows:

— ~~—~~Consolidation of ISO 6182-2:2012, ISO 6182-3:2012, ISO 6182-4:2019, ISO 6182-5:2012, ISO 6182-6:2020, and ISO 6182-8:2019, into ~~6182-2~~this document.

Inclusion of requirements for additional preaction valve variations.

A list of all parts in the ISO 6182 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at ~~www.iso.org/members.html~~www.iso.org/members.html.

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Fire protection — Automatic sprinkler systems

Part 2: Requirements and test methods for sprinkler system alarm valves, check valves, water motor alarms, retard devices and accelerators

1 Scope

This document specifies performance, requirements, methods of test and marking requirements for the following equipment for use in automatic fire protection systems:

— wet alarm valves;

— retard devices;

— water motor alarms;

— dry pipe valves;

— accelerators

— deluge valves;

— preaction valves;

— check valves.

Performance and test requirements for trim valves for alarm valves are not covered by this document.

The requirements for pressure reducing valves and fire pump relief valves are provided by ISO 6182-16 and ISO 6182-17.

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.

ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread*

ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes*

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3 Terms and definitions

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

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

— ISO Online browsing platform: available at ~~https://www.iso.org/obp~~https://www.iso.org/obp

— IEC Electropedia: available at ~~https://www.electropedia.org/~~https://www.electropedia.org/

3.1 ~~3.1~~
accelerator
device which hastens the operation of a dry pipe valve using mechanical means other than by reducing installation pipework pressure

Note 1 to entry: For the purposes of this document, the term accelerator refers to an accelerator and any (internal or external) antiflooding device.

Note 2 to entry: See also ~~3.3~~3.3.

3.2 ~~3.2~~
alarm device
mechanical or electrical device which sounds an alarm upon operation of the valve

3.3 ~~3.3~~
antiflooding device
device intended to prohibit excessive water or other foreign matter from entering any relevant part or parts of the accelerator where this can potentially prevent subsequent operation.

3.4 ~~3.4~~
anti-~~reseat~~reseating latch
component that prevents the sealing assembly from returning to its closed position after operation

3.5 ~~3.5~~
automatic drain
device which is normally open and which automatically drains water from and vents the intermediate chamber of a valve to the atmosphere when the valve is in the ready position, and which limits water flow from the chamber after the valve has tripped

3.6 ~~3.7~~
check valve
valve that permits flow into a pipe system and that prevents reverse flow

3.7 ~~3.8~~
clapper
type of sealing assembly which includes rotational movement

Note 1 to entry: See also ~~3.29~~3.28.

3.8 ~~3.9~~
clapper-type valve
type of valve utilizing a clapper as the main sealing element which prevents flow from the system to the supply side of the valve

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3.9 ~~3.10~~
compensator
external or internal device such as an auxiliary valve that minimizes false alarms caused by a small increase of service pressure

3.10 ~~3.11~~
corrosion-resistant material
bronze, brass or nickel-copper alloys such as UNS N04400, austenitic stainless steel, or equivalent metallic or plastic material conforming with the requirements of this document

3.11 ~~3.12~~
deluge system
automatic fire protection system using a deluge valve which is operated by an auxiliary means to admit water into a system of open sprinklers or nozzles.

3.12 ~~3.13~~
deluge valve
automatic water-supply control valve intended to be operated by an auxiliary means to admit water into a system of open piping for a deluge system, or system of closed piping for a preaction system

Note 1 to entry: The auxiliary means of operating a deluge valve can be mechanical, electrical, hydraulic, pneumatic, thermal, manual or a combination of these.

3.12.1 ~~3.13.1~~
hydraulically operated deluge valve
deluge valve that is maintained in the set position by service hydraulic pressure acting against a diaphragm or piston that holds the sealing assembly closed.

Note 1 to entry: A change in pressure against the diaphragm or piston allows the valve to open. The pressure is changed by operation of a manual control, an electrical device such as solenoid valve, or hydraulically, thermally, or pneumatically operated device.

3.12.2 ~~3.13.2~~
pressure-loss operated deluge valve
~~a~~ valve in which the valve is released from the set position by reducing the pressure acting against an auxiliary diaphragm or piston~~.~~

3.12.3 ~~3.13.3~~
supply pressure operated deluge valve
a valve that is maintained in the set position by a spring or other means and is hydraulically operated by the application of service pressure to an auxiliary diaphragm or piston

3.13 ~~3.14~~
differential
ratio of service pressure to system air pressure (expressed as gauge pressure) at the trip point

Note 1 to entry: See also ~~3.36~~ 3.35.

3.14 ~~3.15~~
differential~~-~~type valve
type of valve in which air pressure in the system acts directly or indirectly or both on the sealing assembly to maintain it in the closed position

Note 1 to entry: The air seat of the sealing assembly is of equal or larger diameter than the diameter of the water seat of the sealing assembly, with the two separated by an intermediate chamber maintained at atmospheric pressure.

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