
**Fire protection — Automatic sprinkler
systems —**

**Part 16:
Requirements and test methods for
fire pump relief valves**

iTeh Standards
(<https://standards.itih.ai>)
Document Preview

[ISO 6182-16:2020](https://standards.itih.ai/catalog/standards/iso/a0dca840-6f59-4dd5-96db-89d8f8a493fb/iso-6182-16-2020)

<https://standards.itih.ai/catalog/standards/iso/a0dca840-6f59-4dd5-96db-89d8f8a493fb/iso-6182-16-2020>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 6182-16:2020](https://standards.iteh.ai/catalog/standards/iso/a0dca840-6f59-4dd5-96db-89d8f8a493fb/iso-6182-16-2020)

<https://standards.iteh.ai/catalog/standards/iso/a0dca840-6f59-4dd5-96db-89d8f8a493fb/iso-6182-16-2020>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2020

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Requirements	2
4.1 Nominal sizes and tolerances.....	2
4.2 Connections.....	2
4.3 Rated working pressure.....	2
4.4 Body and cover.....	2
4.5 Body strength (see 6.4).....	3
4.6 Access for maintenance.....	3
4.7 Components.....	3
4.8 Leakage and deformation (see 6.3).....	4
4.9 Non-metallic components (excluding gaskets, diaphragms, seals and other elastomeric parts).....	4
4.10 Sealing assembly elements (see 6.7).....	4
4.11 Clearances.....	4
4.12 Operation and reseal (see 6.8).....	4
4.13 Flow capacity (see 6.9).....	4
4.14 Endurance (see 6.10).....	5
5 Production testing and quality control	5
6 Tests	5
6.1 Samples.....	5
6.2 Spring and diaphragm test (see 4.7.6 and 4.7.7).....	6
6.3 Leakage and deformation (see 4.8).....	6
6.3.1 Body leakage.....	6
6.3.2 Sealing assembly.....	6
6.4 Body strength (see 4.5).....	6
6.5 Warm-water ageing test for non-metallic components (excluding gaskets, seals and other elastomeric components).....	6
6.6 Air ageing test for non-metallic components (excluding gaskets, seals and other elastomeric components).....	7
6.7 Sealing element tests (see 4.10).....	7
6.8 Operational and reseal (see 4.12).....	8
6.9 Flow capacity (see 4.13).....	8
6.10 Endurance test (see 4.14).....	8
7 Marking	8
8 Manufacturer's installation instructions	9
Annex A (normative) Tolerances	10
Bibliography	11

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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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*.

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.

Fire protection — Automatic sprinkler systems —

Part 16:

Requirements and test methods for fire pump relief valves

1 Scope

This document defines performance requirements, methods of testing and marking requirements for fire pump relief valves intended to rapidly relieve the excessive water pressure in the supply piping for standpipe systems or sprinkler systems or both. Performance and test requirements for other auxiliary components or attachments to fire pump relief valves are not covered by this standard.

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 — Coarse thread and fine pitch thread*

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:

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

3.1

corrosion resistant material

bronze, brass, Monel¹⁾ metal, austenitic stainless steel, or equivalent, or plastic material conforming with the requirements of this document

3.2

main valve

part of the valve assembly that controls the flow of water

3.3

maximum set pressure rating

maximum pressure at which the valve is intended to be set to relieve pressure from a water supply system

1) Monel[®] is a trademark of Special Metals Corporation and is an example of a suitable product available commercially. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of this product. Equivalent products may be used if they can be shown to lead to the same results.

3.4

pilot valve

part of the valve assembly that controls the operating of the *main valve* (3.2)

3.5

rated working pressure

maximum service pressure at which a valve is intended to operate

3.6

reseal pressure

pressure at which the relief valve is intended to prevent the flow of water

3.7

set pressure

pressure at which the *main valve* (3.2) is intended to start to allow the flow of water

4 Requirements

4.1 Nominal sizes and tolerances

4.1.1 The nominal size of a fire pump relief valve shall be the nominal diameter of the inlet and outlet connections, i.e. the pipe size for which the connections are intended. The sizes shall be 20 mm, 32 mm, 40 mm, 50 mm, 65 mm, 80 mm, 100 mm, 125 mm, 150 mm, 200 mm, 250 mm or 300 mm. The diameter of the waterway through the sealing assembly seat ring may be no more than one size smaller than the nominal size.

4.1.2 Unless otherwise noted in a specific clause of this document, tolerances shall be in accordance with [Annex A](#).

4.2 Connections

4.2.1 All connections shall be designed for use at the rated working pressure of the valve.

4.2.2 The dimensions of all connections shall conform with the applicable requirements of relevant international standards. If international standards are not applicable, national standards may be used.

For example, ISO 6182-12 contains requirements for grooved-end components. Where there is not an ISO standard developed, a national standard may be used for other connection types (i.e. threaded, flanged, or other suitable connections).

4.3 Rated working pressure

4.3.1 The rated working pressure shall be not less than 1,2 MPa (12 bar).

4.3.2 Connections may be machined for lower working pressures to match installation equipment provided the valve is marked with the lower working pressure, as per 7.3, f).

4.4 Body and cover

4.4.1 The body and cover shall be made of a material with corrosion resistance at least equivalent to cast iron.

4.4.2 Cover fasteners shall be made of steel, stainless steel, titanium, or other materials with equivalent physical and mechanical properties.