
**Industrial valves — Isolating valves for
low-temperature applications —**

**Part 2:
Type testing**

*Robinetterie industrielle — Robinets d'isolement pour application à
basses températures —*

Partie 2: Essais de type



This document is a preview generated by EBS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2015, Published in Switzerland

All rights reserved. Unless otherwise specified, 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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	iv
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Test conditions	2
4.1 Valve selection	2
4.2 Testing criteria and selection of valve design	2
4.2.1 General	2
4.2.2 Representative valve design selection	3
4.2.3 Selection and qualification of sealing elements	3
4.3 Requirements for test valve, direction for installation and conditions	3
4.4 Preparation for low temperature test	3
4.4.1 General	3
4.4.2 Valve tests	3
4.4.3 Test equipment	3
5 Low temperature testing requirements	4
5.1 Safety provisions	4
5.2 Cooling of the valve	4
5.3 Test gas	4
5.4 Equipment	4
5.4.1 General	4
5.4.2 Test equipment	6
5.4.3 Instruments calibration	6
6 Information to be supplied by the purchaser	6
Annex A (normative) Test procedure for type testing of valves at low temperature	7
Annex B (informative) Information to be supplied by the purchaser	13
Annex C (informative) Low-temperature type test record	14
Bibliography	18

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 on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is Technical Committee ISO/TC 153, *Valves*, Subcommittee SC 1, *Design, manufacture, marking and testing*.

ISO 28921 consists of the following parts, under the general title *Industrial valves — Isolating valves for low-temperature applications*:

- *Part 1: Design, manufacturing and production testing*
- *Part 2: Type testing*

Industrial valves — Isolating valves for low-temperature applications —

Part 2: Type testing

WARNING — Persons using this International Standard should be familiar with normal laboratory practice. This International Standard does not purport to address all of the safety issues, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any national regulatory requirements.

1 Scope

This part of ISO 28921 specifies requirements for the type testing of isolating valves for low-temperature applications to verify the performance of valves at a low temperature from $-50\text{ }^{\circ}\text{C}$ down to $-196\text{ }^{\circ}\text{C}$.

NOTE Nominal sizes (DN), nominal pipe sizes (NPS), nominal pressure (PN) and Classes are covered in ISO 28921-1.

This part of ISO 28921 does not evaluate valve actuators unless they are integral part of the valve. Valves during testing can be operated manually or an actuator can be used during the testing. The effect of cold gas vapours during testing is taken into consideration in particular if the actuator is mounted directly over the test stand with the cold gases engulfing the actuator.

This part of ISO 28921 does not apply to valves for cryogenic services, designed in accordance with ISO 21011, used with cryogenic vessels.

2 Normative references

The following referenced documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5208, *Industrial valves — Pressure testing of metallic valves*

ISO 28921-1, *Industrial valves — Isolating valves for low-temperature applications — Part 1: Design, manufacturing and production testing*

ASME B31.3, *Process Piping*

EN 13480-2, *Metallic industrial piping — Part 2: Materials*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 28921-1 and the following apply.

3.1

symmetric seated valve

valve with an internal construction which has a plane of symmetry perpendicular to the axis of the body ends

Note 1 to entry: This is a valve where both seat sealing elements are identical.