



SLOVENSKI STANDARD SIST EN ISO 10497:2004

01-november-2004

Preskušanje ventilov - Zahteve za protipožarno preskušanje

Testing of valves - Fire type-testing requirements (ISO 10497:2004)

Prüfung von Armaturen - Anforderungen an die Typprüfung auf Feuersicherheit (ISO 10497:2004)

Essais des appareils de robinetterie - Exigences de l'essai au feu (ISO 10497:2004)

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Ta slovenski standard je istoveten z: EN ISO 10497:2004

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ICS:

13.220.40	Sposobnost vžiga in obnašanje materialov in proizvodov pri gorenju	Ignitability and burning behaviour of materials and products
23.060.01	Ventili na splošno	Valves in general

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 10497

August 2004

ICS 23.060.01

English version

Testing of valves - Fire type-testing requirements (ISO 10497:2004)

Essais des appareils de robinetterie - Exigences de l'essai au feu (ISO 10497:2004)

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This European Standard was approved by CEN on 14 August 2004.

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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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 10497:2004 (E)**Foreword**

This document (EN ISO 10497:2004) has been prepared by Technical Committee ISO/TC 153 "Valves" in collaboration with Technical Committee CEN/TC 69 "Industrial valves", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

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

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INTERNATIONAL
STANDARD

ISO
10497

Second edition
2004-08-15

**Testing of valves — Fire type-testing
requirements**

Essais des appareils de robinetterie — Exigences de l'essai au feu

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Reference number
ISO 10497:2004(E)

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Published in Switzerland

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ISO 10497:2004(E)**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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 10497 was prepared by Technical Committee ISO/TC 153, *Valves*, Subcommittee SC 1, *Design, manufacture, marking and testing*.

This second edition cancels and replaces the first edition (ISO 10497:1992), which has been technically revised.

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Introduction

This International Standard covers the requirements and method for evaluating the performance of valves when they are exposed to defined fire conditions. The performance requirements establish limits of acceptability of a valve, regardless of size or pressure rating. The burn period has been established to represent the maximum time required to extinguish most fires. Fires of longer duration are considered to be of major magnitude with consequences greater than those anticipated in the test.

The test pressure during the burn is set at 0,2 MPa (2 bar) for soft-seated valves rated PN 16, PN 25 and PN 40, Class 150 and Class 300, to better simulate the conditions that would be expected in a process plant when a fire is detected and pumps are shut down. In this case, the source of pressure in the system is the hydrostatic head resulting from liquid levels in towers and vessels. This situation is approximated by this lower test pressure.

In production facilities, valves are typically of a higher rating and the pressure source is not easily reduced when a fire is detected. Therefore, for all other valves, the test pressure during the burn is set at a higher value to better simulate the expected service conditions in these facilities.

Use of this International Standard assumes that the execution of its provisions is entrusted to appropriately qualified and experienced personnel, because it calls for procedures that may be injurious to health if adequate precautions are not taken. This International Standard refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage of the procedure.

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Testing of valves — Fire type-testing requirements

1 Scope

This International Standard specifies fire type-testing requirements and a fire type-test method for confirming the pressure-containing capability of a valve under pressure during and after the fire test. It does not cover the testing requirements for valve actuators other than manually operated gear boxes or similar mechanisms when these form part of the normal valve assembly. Other types of valve actuators (e.g. electrical, pneumatic or hydraulic) may need special protection to operate in the environment considered in this valve test, and the fire testing of such actuators is outside the scope of this International Standard.

NOTE For the purposes of this International Standard, the terms “fire type-test” and “fire test” are synonymous.

2 Normative references

The following referenced documents are indispensable for the application 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 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

IEC 60584-2, *Thermocouples — Part 2: Tolerances*

3 Terms and definitions

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

3.1

nominal size

DN

alphanumeric designation of size for components of a pipework system, which is used for reference purposes, comprising the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

[ISO 6708:1995, definition 2.1]

3.2

nominal pressure

PN

numerical designation relating to pressure which is a convenient rounded number for reference purposes, and which comprises the letters PN followed by the appropriate reference number

NOTE 1 It is intended that all equipment of the same nominal size (DN) designated by the same PN number have compatible mating dimensions.

NOTE 2 The maximum allowable working pressure depends on materials, design and working temperatures, and is to be selected from the tables of pressure/temperature ratings given in the appropriate standards.

NOTE 3 Adapted from ISO 7268:1983, Clause 2.