



# SLOVENSKI STANDARD

## SIST EN 12266-2:2003

01-julij-2003

---

### Industrijski ventili - Preskušanje ventilov - 2. del: Preskusi, postopki preskušanja in prevzemni pogoji - Dodatne zahteve

Industrial valves - Testing of valves - Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements

Industriearmaturen - Prüfung von Armaturen - Teil 2: Prüfungen, Prüfverfahren und Annahmekriterien - Ergänzende Anforderungen

Robinetterie industrielle - Essais des appareils de robinetterie - Partie 2: Essais, procédures d'essai et critères d'acceptation - Prescriptions complémentaires

**Ta slovenski standard je istoveten z: EN 12266-2:2002**

---

#### **ICS:**

23.060.01      Ventili na splošno                      Valves in general

**SIST EN 12266-2:2003**                              en

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN 12266-2:2003

<https://standards.iteh.ai/catalog/standards/sist/a0aec7d4-dd3e-4a8e-9c1a-9210db2d8d40/sist-en-12266-2-2003>

ICS 23.060.01

English version

## Industrial valves - Testing of valves - Part 2: Tests, test procedures and acceptance criteria - Supplementary requirements

Robinetterie industrielle - Essais des appareils de robinetterie - Partie 2: Essais, procédures d'essai et critères d'acceptation - Prescriptions complémentaires

Industriearmaturen - Prüfung von Armaturen - Teil 2: Prüfungen, Prüfverfahren und Annahmekriterien - Ergänzende Anforderungen

This European Standard was approved by CEN on 2 October 2002.

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/a0acc7d4-dd3e-4a8e-9c1a-9210db2d8d40/sist-en-12266-2-2003>



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

## Contents

	page
Foreword .....	3
Introduction .....	4
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Test requirements .....	5
5 Designation .....	5
Annex A (normative) Pressure tests – Test procedures and acceptance criteria .....	6
A.1 General requirements .....	6
A.2 Obturator strength, Test P20 .....	8
A.3 Back seat tightness, Test P21 .....	10
Annex B (normative) Functional tests — Test procedures and acceptance criteria .....	12
B.1 Operability, Test F20 .....	12
B.2 Anti-static design, Test F21 and Test F22 .....	12

**ITeCh STANDARD PREVIEW**  
**(standards.iteh.ai)**  
  
SIST EN 12266-2:2003  
<https://standards.iteh.ai/catalog/standards/sist/a0aec7d4-dd3e-4a8e-9c1a-9210db2d8d40/sist-en-12266-2-2003>

## Foreword

This document EN 12266-2:2002 has been prepared by 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 May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

EN 12266 consists of two parts, which can be used separately under the general title, *Industrial valves — Testing of valves* :

- Part 1: *Pressure tests, test procedures and acceptance criteria — Mandatory requirements*
- Part 2: *Tests, test procedures and acceptance criteria — Supplementary requirements*

Part 1 was drawn up on the basis of International Standard ISO 5208 and Part 2 contains supplementary testing requirements for tests, test procedures and acceptance criteria of valves.

Special requirements, which are specific to one product or one performance standard only, are not included in this standard. Details should be included in the appropriate standard.

Annexes A and B are normative.

(standards.iteh.ai)

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## Introduction

The purpose of this European Standard is to establish certain basic requirements for supplementary testing of industrial valves in order to ensure uniform tests and test procedures are adopted. The tests and procedures detailed may be used for production tests and also, when required, for type tests and acceptance tests.

### 1 Scope

This European Standard specifies supplementary requirements for tests, test procedures and acceptance criteria of industrial valves.

The specified tests may be used as type tests, production tests or acceptance tests. The application of these tests will be specified in the appropriate product or performance standards.

When specified as a normative reference in a valve product or performance standard, it is essential to consider this standard in conjunction with the specific requirements of that valve product or performance standard. Where requirements in a product or performance standard differ from those given in this standard, the requirements of the product or performance standard apply.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

### 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 736-1, *Valves — Terminology — Part 1: Definition of types of valves.*

EN 736-2, *Valves — Terminology — Part 2: Definition of components of valves.*

EN 736-3, *Valves — Terminology — Part 3: Definition of terms.*

EN 1267, *Valves — Test of flow resistance using water as test fluid.*

ISO 10497, *Testing of valves - Fire type testing requirements.*

prEN 12266-1<sup>1)</sup>, *Industrial valves — Testing of valves — Part 1: Pressure tests, test procedures and acceptance criteria — Mandatory requirements.*

### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 736-1, EN 736-2 and EN 736-3 apply.

---

1) To be published.

## 4 Test requirements

The product or performance standards shall specify which tests or inspections shall be applied to the valve from those listed in Table 1.

Test procedures and acceptance criteria shall be as given in annex A for pressure tests, in annex B for functional tests or in other specified standards, see Table 1.

**Table 1 — Requirements for tests, test procedures and acceptance criteria**

Test		Purpose	Test procedure and acceptance criteria
Title	Test reference		
Obturator strength	P20	To confirm the allowable differential pressure containing capability of the obturator in the closed position	see A.2
Back seat tightness	P21	To confirm the capacity of the back seat to conform to the specified leakage rate at the time of manufacture	see A.3
Operability	F20	To confirm the complete opening and closing capability of the valve and, where applicable, the correct operation of the position indicators or other auxiliary devices	see B.1
Anti-static design at 12 V	F21	To confirm electrical conductivity between the obturator and the body of the valve	see B.2.2.2
Anti-static design at 100 V	F22	To confirm electrical conductivity between the obturator and the body of the valve	see B.2.2.3
Fire tested design	F23	To confirm the pressure containing capability of the valve under pressure during and after specified fire conditions	ISO 10497
Flow resistance	F24	To confirm the specified flow coefficient or flow resistance coefficient	EN 1267

## 5 Designation

Tests in accordance with this standard shall be designated by the following elements:

- title of test, test reference;
- EN 12266-2.

EXAMPLE Operability, Test F20 — EN 12266-2

## Annex A (normative)

### Pressure tests – Test procedures and acceptance criteria

#### A.1 General requirements

##### A.1.1 Purpose

These general requirements shall be applied to all the test procedures defined in this annex.

Safety aspects of valve testing are not covered in this standard. The users of this standard should analyse the hazard resulting from the pressure and take proper safety precautions.

##### A.1.2 Test equipment

The test equipment shall be of such a design, that it does not subject the valve to externally applied loads which may affect the results of the test.

NOTE The test equipment can apply external loads sufficient to react to the forces resulting from the test pressure.

When using test equipment and procedures different to that detailed in this standard, the manufacturer shall be able to demonstrate the equivalence of such test procedures and acceptance criteria with the requirements of this standard.

SIST EN 12266-2:2003

##### A.1.3 Measuring equipment

<https://standards.iteh.ai/catalog/standards/sist/a0acc7d4-dd3e-4a8e-9c1a-9210db2d8d40/sist-en-12266-2-2003>

The measuring equipment shall be capable of measuring the fluid pressure with an accuracy of  $\pm 5\%$  of the required test pressure.

##### A.1.4 Painted, coated or lined valves

Valves with liners, internal linings or internal coatings that form a design feature of the valve may be tested with the liner or after lining or coating.

If tests in the presence of a representative of the purchaser are specified, valves from stock can be retested.

##### A.1.5 Test fluid

The test fluid to be used, as specified in the relevant test procedures detailed in A.2.2.1 and A.3.2.1, shall be:

- either a liquid (water which may contain a corrosion inhibitor, or any other suitable liquid having a viscosity not greater than water);
- or a gas (air or other suitable gas).

The test fluid temperature shall be between 5 °C and 40 °C.

##### A.1.6 Test pressure

The test pressure shall be calculated based on the allowable pressure at room temperature  $p_{s/RT}$ . For valves for which the allowable pressure  $p_s$  is given only for an elevated temperature  $t$ , the allowable pressure at room temperature,  $p_{s/RT}$ , to be used to determine the test pressure shall be calculated from the following equation:



$$p_{s/RT} = p_{s/t} \times \frac{R_{p0,2 \text{ min}/RT}}{R_{p0,2 \text{ min}/t}}$$

where :

$R_{p0,2 \text{ min}/RT}$  is the 0,2 % proof strength at room temperature according to the relevant material standard;

$R_{p0,2 \text{ min}/t}$  is the 0,2 % proof strength at temperature  $t$  according to the relevant material standard;

$p_{s/t}$  is the allowable pressure at temperature  $t$ .

NOTE The term maximum allowable pressure, PS, defined in EU Directive 97/23/EC (PED) is equivalent to the term allowable pressure,  $p_s$ , defined in EN 736-3.

### A.1.7 Equivalent DN numbers

For the purpose of calculating seat leakage rates and test duration times it is necessary to establish the equivalent DN number for those valves which are designated other than by DN.

The equivalent DN numbers of valves having flanged ends, threaded ends, weld ends, capillary or compression ends shall be as given in Table A.1.

Table A.1 — Equivalent DN numbers for different types of body ends

Equivalent DN numbers	Flanged, threaded or welding ends NPS	Capillary or compression ends for copper tube mm	Compression ends for plastic tube mm
8	¼	8	—
10	—	10; 12	10; 12
15	½	14; 14,7; 15; 16; 18	14,7; 15; 16; 18
20	¾	21; 22	20; 21; 22
25	1	25; 27,4; 28	25; 27,4; 28
32	1 ¼	34; 35; 38	32; 34
40	1 ½	40; 40,5; 42	40; 40,5
50	2	53,6; 54	50; 53,6
65	2 ½	64; 66,7; 70	63
80	3	76,1; 80; 88,9	75; 90
100	4	108	110
125	5	—	—
150	6	—	—
200	8	—	—
250	10	—	—
300	12	—	—
350	14	—	—
400	16	—	—
450	18	—	—
500	20	—	—
600	24	—	—
650	26	—	—
700	28	—	—
750	30	—	—
800	32	—	—
900	36	—	—
1 000	42	—	—