



# SLOVENSKI STANDARD

## oSIST prEN 17070:2016

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### Industrijski ventili - Minimalne zahtevane lastnosti

Industrial valves - Minimum performance requirements

Industriearmaturen - Mindestleistungsanforderungen

Robinetterie industrielle - Exigences minimales de performance

Ta slovenski standard je istoveten z: **prEN 17070**

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EUROPEAN STANDARD  
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**prEN 17070**

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English Version

## Industrial valves - Minimum performance requirements

Robinetterie industrielle - Exigences minimales de performance

Industriearmaturen - Mindestleistungsanforderungen

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

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## European foreword

This document (prEN 17070:2016) has been prepared by Technical Committee CEN/TC 69 “Industrial valves”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

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**prEN 17070:2016 (E)**

## **Introduction**

The purpose of this document is to define the minimal performances required for industrial valves.

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## 1 Scope

This European Standard defines the minimum performance requirements which apply to industrial valves. It specifies test procedures and acceptance criteria for each performance requirement of this European Standard.

Valves for specific use, where such a performance requirements already exists are excluded from this standard:

- a) valves to be used in water supply pipe system in accordance with EN 1074 (all parts);
- b) valves to be used in gas distribution system with pressure lower than 16 bar in accordance with EN 13774;
- c) control valves in accordance with EN 1349;
- d) safety devices in accordance with EN ISO 4126 (all parts).

## 2 Normative references

The following 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.

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*

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EN 12266-1:2012, *Industrial valves — Testing of metallic valves — Part 1: Pressure tests, test procedures and acceptance criteria — Mandatory requirements*

## 3 Terms and definitions

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

### 3.1 cycle

movement of the obturator from the fully opened to the fully closed position and return

## 4 Minimum performances

### 4.1 Seat tightness P12: maximum allowable leakage rate

#### 4.1.1 Purpose

The test shall confirm the capability of the seat(s) to conform to the maximum allowable leakage rate given in Table 1:

- a) at the time of manufacture;
- b) in the direction(s) for which the valve is designed.

**prEN 17070:2016 (E)****4.1.2 Test method**

The test procedure, the test pressure and the test duration of test reference P12 defined in EN 12266-1:2012, A.4 shall be applied.

**4.1.3 Acceptance criteria**

The maximum allowable leakage rate is given in Table 1:

**Table 1 — Maximum allowable leakage rate**

<b>Resilient seated valves including check valves</b>	<b>Metal seated valves except check valves</b>	<b>Metal seated check valves</b>
Rate A	Rate B	Rate G

**4.2 Endurance test****4.2.1 Cycle test for isolating valves****4.2.1.1 Purpose**

The test shall confirm the capacity of a valves range to keep the maximum allowable leakage rate after a number of cycles given in Table 2 to Table 6.

**4.2.1.2 Test method**

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**4.2.1.2.1 Representative valves**

Cycle test is a type test. It shall be carried out by the manufacturer with representative valves.

Representative valves shall be selected:

- in each applicable size range defined in Table 2 to Table 6;
- for each basic type of seat design;
- at the maximum pressure class than the valves range being designed.

**4.2.1.2.2 Test procedure**

Each cycle shall consist of applying the pressure to the obturator in the direction for which the valve is designed then opening the valve (relieving the pressure) to the wide-open position, and then closing the obturator again.

The minimum test pressure shall be the maximum allowable differential pressure, except that if the test fluid is a gas, the test pressure may be the lower of the maximum allowable differential pressure or  $(6 \pm 1)$  bar.

The test is carried out at room temperature.

The detailed test procedure is given in Annex A.

**4.2.1.2.3 Minimum required cycles number**

The representative valves shall be subjected to the number of cycles specified in Table 2, Table 3, Table 4, Table 5 and Table 6. The number of cycles depends on the valve types.



**Table 2 — Minimum required cycles number for ball and plug valves**

DN	Resilient seated valves		Metal seated valves	
	Liquid	Gaz	Liquid	Gaz
Up to DN 200	10 000	3 000	2 000	1 000
DN 250 to 400	5 000	1500	800	300
DN 450 to DN 1 000	600	200	150	100

**Table 3 — Minimum required cycles number for gate valves**

DN	Resilient seated valves		Metal seated valves	
	Liquid	Gaz	Liquid	Gaz
Up to DN 200	3 000	1 000	1 000	500
DN 250 to DN 500	2 500	500	500	200
DN 550 to DN 1 000	2 500	500	300	100

**Table 4 — Minimum required cycles number for globe valves**

DN	Without bellow		With bellow
	Resilient seat	Metal seat	All seats
Up to DN 400	3 000	1 000	1 000

**Table 5 — Minimum required cycles number for diaphragm valve**

DN	Elastomer membrane	Plastomer membrane
Up to DN 32	15 000	8 000
DN 40 to 125	11 000	4 000
DN 150 to 300	10 000	2 000

**Table 6 — Minimum required cycles number for Butterfly valves**

DN	Resilient seated valves		Metal seated valves	
	Liquid	Gaz	Liquid	Gaz
Up to DN 200	15 000	3 000	1 500	750
DN 250 to 500	10 000	2 000	1 000	500
DN 550 to 1000	5 000	1 000	500	250

**prEN 17070:2016 (E)****4.2.1.3 Acceptance criteria**

On completion of the cycle test, the maximum allowable leakage rate is given in Table 7.

**Table 7 — Maximum allowable leakage rate after cycle test**

Resilient seated valves	Metal seated valves
Rate A	Rate B

**4.2.2 Endurance test for check valves****4.2.2.1 Purpose**

The test shall confirm the capacity of a check valves to keep their functional capacity after a significant number of operations (opening/closing cycles).

**4.2.2.2 Test method****4.2.2.2.1 Representative check valves**

Endurance test is a type test. It shall be carried out by the manufacturer with representative check valves.

Representative check valves shall be selected:

- in each applicable pressure class group defined in Table 8;
- for each basic type of seat design.

**Table 8 — Definition of pressure class groups**

Pressure class group 1	≤ PN 25
Pressure class group 2	≥ PN 40

The size of each selected check valve shall be the maximum size of the selected check valve pressure class range but no greater than DN 300.

**4.2.2.2.2 Test procedure**

Each cycle shall consist in establishing in sequence a water flow situation through the valve with a minimum velocity of 1 m/s and a no flow situation with a downstream pressure equal to PS.

The test shall be performed with water at ambient temperature.

The detailed test procedure is given in Annex C.

**4.2.2.2.3 Minimum required cycles number**

The representative valves shall be subjected to 2 500 cycles.

**4.2.2.3 Acceptance criteria**

On completion of the endurance test:

- the maximum allowable leakage rate is given in Table 9;
- no breakage of any part shall be detected by visual inspection after dismantling the check valve.