# SLOVENSKI STANDARD
# SIST EN 1074-4:2001

**01-december-2001**

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**Ventili za vodooskrbo - Zahteve za ustreznost in ustrezni preskusi - 4. del: Prezračevalni in odzračevalni ventili**

Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 4: Air valves

Armaturen für die Wasserversorgung - Anforderungen an die Gebrauchstauglichkeit und deren Prüfung - Teil 4: Be- und Entlüftungsventile mit Schwimmkörper



Robinetterie pour l'alimentation en eau - Prescriptions d'aptitude a l'emploi et vérifications s'y rapportant - Partie 4: Purgeurs et ventouses a flotteur



**Ta slovenski standard je istoveten z:** **EN 1074-4:2000**

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**ICS:**

| | | |
|---|---|---|
| 23.060.01 | Ventili na splošno | Valves in general |
| 91.140.60 | Sistemi za oskrbo z vodo | Water supply systems |

**SIST EN 1074-4:2001** **en**

# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 1074-4**

July 2000

ICS 91.140.60

English version

# Valves for water supply - Fitness for purpose requirements and appropriate verification tests - Part 4: Air valves

Robinetterie pour l'alimentation en eau - Prescriptions d'aptitude à l'emploi et vérifications s'y rapportant - Partie 4: Purgeurs et ventouses à flotteur

Armaturen für die Wasserversorgung - Anforderungen an die Gebrauchstauglichkeit und deren Prüfung - Teil 4: Be- und Entlüftungsventile mit Schwimmkörper

This European Standard was approved by CEN on 18 June 2000.

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 Central Secretariat 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 Central Secretariat 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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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Ref. No. EN 1074-4:2000 E

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 69 "Industrial valves", the secretariat of which is held 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 January 2001, and conflicting national standards shall be withdrawn at the latest January 2001.

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

prEN 1074 consists of six parts :

— *Part 1 : General requirements ;*

— *Part 2 : Isolating valves ;*

— *Part 3 : Check valves ;*

— *Part 4 : Air valves ;*

— *Part 5 : Control valves ;*

— *Part 6 : Hydrants.*



Part 1, in conjunction with the subsequent parts, lays down the general requirements and test procedures to be carried out in production and during the assessment of conformity of these valves (type tests). The detailed requirements, which depend on the types of valves, are defined in parts 2 to 6 of this standard.

## Introduction

In respect of potential adverse effects on the quality of water intended for human consumption caused by the product covered by this standard :

a) this standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA ;

b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

## 1 Scope

This European Standard specifies the minimum fitness for purpose requirements for valves to be used in, or connected to, water supply pipe systems above or below ground (see EN 805), carrying water intended for human consumption.

This standard specifies the design requirements, the performance requirements, and the conformity assessment method for valves, whatever their type and materials.

This standard applies in priority to any other product or test standard : the requirements from other standards apply only when this standard refers to them.

This standard deals with the requirements applicable to air valves with DN up to DN 300 and PFA 6 to PFA 25.

## 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 the types of valves.*



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

EN 805, *Water supply — Requirements for systems and components outside buildings.*



EN 1074-1:2000, *Valves for water supply — Fitness for purpose requirements and appropriate verification tests — Part 1 : General requirements.*

EN 1074-2:2000, *Valves for water supply — Fitness for purpose requirements and appropriate verifications tests — Part 2 : Isolating valves.*

## 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1074-1 apply together with the following :

**3.1**
**float type purgers and air valves**
self-operating float type valves for the evacuation of air from, or for the ingress of air into water pipelines. Such valves may be single float or double float and may fulfil one or more of the following functions : air release, air intake, air venting

**3.2**
**air release function**
to discharge a large air flow from a water pipeline

**3.3**
**air intake function**
to admit a large air flow into a water pipeline

**3.4**
**air venting function**
to purge entrapped air from a water pipeline in service under pressure

# 4 Design requirements

Self-operating float type purgers and air valves shall be designed in compliance with the requirements given in clause 4 of EN 1074-1:2000. In addition, these valves may be fitted with an integrated isolating device which shall be in accordance with EN 1074-2.

# 5 Performance requirements

## 5.1 Mechanical strength

### 5.1.1 Resistance to internal pressure of the shell and all pressure containing components

Requirement and test shall be in accordance with 5.1.1 of EN 1074-1:2000. For double float valves, the obturators may be tested simultaneously or separately.

### 5.1.2 Resistance of the obturator to differential pressure

Tested within 5.1.1.

### 5.1.3 Resistance of valves to bending

Not applicable.

### 5.1.4 Resistance of valves to operating loads



Not applicable, except for any integrated isolating device which shall be in accordance with 5.1.4 of EN 1074-2:2000.



## 5.2 Leaktightness

### 5.2.1 Leaktightness of the shell and all pressure containing components

#### 5.2.1.1 Leaktightness to internal pressure

The requirement of leaktightness to internal pressure is fulfilled by conformance to 5.1.1.

#### 5.2.1.2 Leaktightness to external pressure

Not applicable, except for any integrated isolating device which shall be in accordance with 5.2.1.2 of EN 1074-2:2000.

### 5.2.2 Seat tightness

#### 5.2.2.1 Seat tightness at high pressure

Requirement and test shall be in accordance with 5.2.2.1 of EN 1074-1:2000, the test fluid shall be water. The leakage rate shall be the rate A. For a type test, the test duration shall be not less than 10 min. For double float valves, the obturators may be tested simultaneously or separately.

#### 5.2.2.2 Seat tightness at low pressure

Requirement and test shall be in accordance with 5.2.2.2 of EN 1074-1:2000, with test fluid, leakage rate and test duration as given in 5.2.2.1. For double float valves, the obturators may be tested simultaneously or separately.

### 5.2.3 Maximum operating torque (MOT) for operation and tightness

Not applicable, except for any integrated isolating device which shall be in accordance with 5.2.3 of EN 1074-2:2000.

## 5.3 Airflow characteristics

Requirement shall be in accordance with 5.3 of EN 1074-1:2000.

The characteristics given by the manufacturer shall be the air flow as a function of pressure. When it is measured according to the conditions defined in the relevant hereafter subclauses, the flow shall be not less than 90% of the value indicated by the manufacturer, at two points of the curve, these two points being indicative of the range and functions of the valve.

### 5.3.1 Air release function

The type test shall be in accordance with annex A.

Testing is not required for air valves larger than DN 100.

### 5.3.2 Air intake function

The type test shall be in accordance with annex B.

Testing is not required for air valves larger than DN 100.

### 5.3.3 Air venting function

The air venting function shall be verified by measuring the section of the small orifice of the valve, calculating the flow through it under sonic conditions and comparing the result with the value given in the manufacturer's catalogues.



The difference shall be no greater than ± 10 %.



## 5.4 Resistance to disinfection products

Requirement and test shall be in accordance with 5.4 of EN 1074-1:2000.

## 5.5 Endurance

### 5.5.1 Endurance of valves with air intake and/or air release functions

The endurance of a valve with air intake and/or air release functions shall be evaluated by subjecting the valve to 250 consecutive cycles of filling and draining in accordance with annex C, the pressure varying from atmospheric to PFA ; the valve shall open and close fully during the test and shall pass the leaktightness tests in accordance with 5.2.1 and 5.2.2 after the 250 cycles.

### 5.5.2 Endurance of valves with an air venting function

The endurance of a valve with air venting function shall be evaluated by subjecting the valve to 2 500 consecutive cycles of air venting. This may be achieved by continuous injection of air into the system allowing the valve to cycle automatically, or by cyclic injection of air. The valve shall open and close fully at each cycle of the test and shall pass the leaktightness tests in accordance with 5.2.1 and 5.2.2 after the 2 500 cycles.