SLOVENSKI STANDARD
SIST EN 12729:2023

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Nadomešča:
SIST EN 12729:2003

Naprave za varovanje pred onesnaženjem pitne vode zaradi povratnega toka - Sistemski ločevalnik z nadzorovanim območjem znižanega tlaka - Družina B - Tip A

Devices to prevent pollution by backflow of potable water - Controllable backflow preventer with reduced pressure zone - Family B - Type A

Sicherungseinrichtungen zum Schutz des Trinkwassers gegen Verschmutzung durch Rückfließen - Systemtrenner mit kontrollierbarer druckreduzierter Zone - Familie B - Typ A

Dispositifs de protection contre la pollution de l'eau potable - Disconnecteur à zone de pression réduite contrôlable - Famille B - Type A

Ta slovenski standard je istoveten z: **EN 12729:2023**

ICS:

13.060.20	Pitna voda	Drinking water
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

SIST EN 12729:2023 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12729

March 2023

ICS 13.060.20; 91.140.60

Supersedes EN 12729:2002

English Version

Devices to prevent pollution by backflow of potable water - Controllable backflow preventer with reduced pressure zone - Family B - Type A

Dispositifs de protection contre la pollution de l'eau potable - Disconnecteur à zone de pression réduite contrôlable - Famille B - Type A

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This European Standard was approved by CEN on 30 January 2023.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12729:2023) has been prepared by Technical Committee CEN/TC 164 “Water supply”, 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of an identical text or by endorsement, at the latest by September 2023, and conflicting national standards shall be withdrawn at the latest by September 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 12729:2002.

The main changes compared to the previous edition are listed below:

— hydraulic and mechanical requirements have been revised;

— the Scope has been updated;

— all tests have been described in more detail and optimized;

— acoustics have been updated;

— endurance tests have been revised;

— section coatings have been added;

— solvent resistance test section has been added.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

Introduction

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

a) this document 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 document specifies the field of application, the dimensional, the physico-chemical, the design, the hydraulic, the mechanical, and the acoustic characteristics of controllable backflow preventers with reduced pressure zone, Family B, Type A.

This document covers controllable backflow preventers of Family B, Type A, with reduced pressure zones, intended to prevent pollution of potable water by backflow, caused by backsiphonage or by backpressure.

It is applicable to controllable backflow preventers in denominations DN 6 up to DN 250.

It covers controllable backflow preventers of PN 10 that are capable of working without modification or adjustment:

— at any pressure, up to 1 MPa (10 bar);

— with any pressure variation, up to 1 MPa (10 bar);

— in permanent duty at a limited temperature of 65 °C and for maximum 1 h at 90 °C.

It specifies also the test methods and requirements for verifying their characteristics, the marking and the presentation at delivery.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 806-1, *Specifications for installations inside buildings conveying water for human consumption - Part 1: General*

EN 1267, *Industrial valves - Test of flow resistance using water as test fluid*

EN 1329-1, *Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes, fittings and the system*

EN 1453-1, *Plastics piping systems with structured-wall pipes for soil and waste discharge (low and high temperature) inside buildings - Unplasticized poly(vinyl chloride) (PVC-U) - Part 1: Specifications for pipes and the system*

EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 10310:2003, *Steel tubes and fittings for onshore and offshore pipelines - Internal and external polyamide powder based coatings*

EN 13959, *Anti-pollution check valves - DN 6 to DN 250 inclusive family E, type A, B, C and D*

EN 13828, *Building valves - Manually operated copper alloy and stainless steel ball valves for potable water supply in buildings - Tests and requirements*

EN 14901-1, *Ductile iron pipes, fittings and accessories - Requirements and test methods for organic coatings of ductile iron fittings and accessories - Part 1: Epoxy coating (heavy duty)*

EN ISO 868, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868)*

EN ISO 2409, *Paints and varnishes - Cross-cut test (ISO 2409)*

EN ISO 2808, *Paints and varnishes - Determination of film thickness (ISO 2808)*

EN ISO 2812-2, *Paints and varnishes - Determination of resistance to liquids - Part 2: Water immersion method (ISO 2812-2)*

EN ISO 3822-1, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 1: Method of measurement (ISO 3822-1)*

EN ISO 3822-3, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 3: Mounting and operating conditions for in-line valves and appliances (ISO 3822-3)*

EN ISO 21920-2, *Geometrical product specifications (GPS) - Surface texture: Profile - Part 2: Terms, definitions and surface texture parameters (ISO 21920-2)*

EN ISO 4624, *Paints and varnishes - Pull-off test for adhesion (ISO 4624)*

EN ISO 4628-2, *Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering (ISO 4628-2)*

EN ISO 4628-3, *Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 3: Assessment of degree of rusting (ISO 4628-3)*

EN ISO 6272-1, *Paints and varnishes - Rapid-deformation (impact resistance) tests - Part 1: Falling-weight test, large-area indenter (ISO 6272-1)*

EN ISO 8501-1, *Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness - Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings (ISO 8501-1)*

EN ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227)*

EN ISO 11357-1, *Plastics - Differential scanning calorimetry (DSC) - Part 1: General principles (ISO 11357-1)*

EN ISO 6509-1, *Corrosion of metals and alloys - Determination of dezincification resistance of copper alloys with zinc - Part 1: Test method (ISO 6509-1)*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1717 and EN 806-1 and the following apply:

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— IEC Electropedia: available at https://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp

3.1
controllable backflow preventer with reduced pressure zone, Family B, Type A
device, called "BA", with following specific characteristics:

— 3 pressure zones such that upstream p_1 > intermediate p_i > downstream p_2 (static no flow and under water flow conditions);

— $p_1 - p_i$ > 14 kPa (140 mbar);

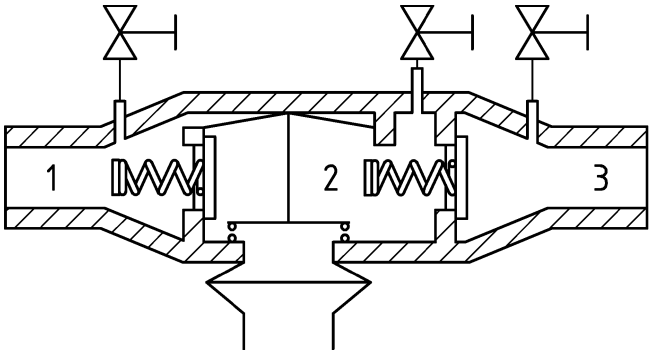
— connection from the intermediate pressure zone (p_i) to the atmosphere when $p_1 - p_i \leq 14$ kPa (140 mbar);

— disconnection by venting the intermediate pressure zone (p_i) to the atmosphere when $p_1 < 14$ kPa (140 mbar);

— a minimum set discharge flow (backflow rate);

— devices that allow verification in every zone of the disconnection and of the sealing of the protection devices (check valves, discharge valve)

Note 1 to entry: See Figure 1.



Key
1 upstream zone p_1
2 intermediate zone p_i
3 downstream zone p_2

Figure 1 — Design principle

Note 2 to entry: For the purposes of this document, "controllable backflow preventer BA" is hereafter referred to as "device".

3.2
in line device
device installed within the pipework where the downstream flow of water supplies one or more points of use

3.3
incorporated device
device integrated in appliances

EXAMPLES Cleaning apparatus, heating boilers, etc.

3.4
end of line device
device installed at the end of the pipework at the point of use for a specific purpose

EXAMPLES Temporary filling heating system, jetwasher machine, feeding points for events, etc.

4 Denomination

For the purposes of this document, for the devices the nominal size DN is a function of the minimum flow rate given in Table 6.

5 Designation

A controllable backflow preventer with reduced pressure zone, Family B, Type A is designated by:

— its name;

— its family and its type;

— type of installation (in line, end of line or incorporated device);

— its denomination;

— its size of end connection;

— the material of its body;

— its surface finish (possible coating);

— the acoustic group I, II or nc (for DN ≤ 32);

— the reference to this document.

Examples for a designation:

— Controllable backflow preventer with reduced pressure zone — Family B — Type A, in line, DN 32, R 11/4 × R 11/4, bronze, I, EN 12729.

— Controllable backflow preventer with reduced pressure zone — Family B — Type A, in line DN 100, flanged, cast iron, epoxy coated, EN 12729.

6 Symbolization

The graphic representation of the controllable backflow preventer with reduced pressure zone, Family B, Type A is as follows (see Figure 2).

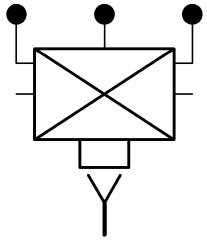


Figure 2 — Graphic symbol

7 Physico-chemical characteristics

7.1 General

The selection of materials is the responsibility of the manufacturer, provided they satisfy the following requirements:

a) materials and coatings shall not contaminate the potable water;

b) in a technical document, the manufacturer shall state the nature of the materials and coatings used;

c) materials with inadequate corrosion resistance shall have additional protection;

d) the materials used shall be suitable for the temperatures specified in the tests in this document;

e) the materials, and in particular copper alloys, for which recommendations or international standards exist, shall comply with the relevant European standards.

7.2 Materials

7.2.1 General

All materials coming into contact with water intended for human consumption shall present no health risk nor cause any change to the water in terms of quality, appearance, smell or taste.

NOTE While awaiting the adoption of verifiable European criteria for testing materials in contact with water intended for human consumption, existing national regulations concerning the use and/or the characteristics of these products remain in force.

7.2.2 Dezincification resistant copper alloy

Copper-zinc alloys containing more than 15 % zinc are subject to dezincification when submitted to water capable of dezincification. In the countries where the use of products made of dezincification resistant materials is required, the materials used shall guarantee a dezincification depth less than 200 µm in any direction. For this purpose, materials shall be tested in accordance with EN ISO 6509-1 and the product shall be marked in compliance with the indications according to Clause 11.