SLOVENSKI STANDARD
oSIST prEN 13434:2020

01-julij-2020

Naprave za varovanje pitne vode pred onesnaženjem zaradi povratnega toka - Mehanski ločilniki s hidravličnim aktiviranjem - Družina G, tip B

Devices to prevent pollution by backflow of potable water - Mechanical disconnector, hydraulic actuated - Family G, type B

Sicherungseinrichtungen zum Schutz des Trinkwassers gegen Verschmutzung durch Rückfließen - Rohrtrenner, durchflussgesteuert - Familie G, Typ B

Dispositifs de protection contre la pollution par retour de l'eau potable - Disconnecteur mécanique assisté hydrauliquement - Famille G, type B

Ta slovenski standard je istoveten z: **prEN 13434**

ICS:

13.060.20	Pitna voda	Drinking water
23.060.50	Blokirni ventili	Check valves

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Devices to prevent pollution by backflow of potable water - Mechanical disconnector, hydraulic actuated - Family G, type B

Dispositifs de protection contre la pollution par retour de l'eau potable - Disconnecteur mécanique assisté volumiquement - Famille G, Type B

Sicherungseinrichtungen zum Schutz des Trinkwassers gegen Verschmutzung durch Rückfließen - Rohrtrenner, durchflussgesteuert - Familie G, Typ B

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 164.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 13434:2020) has been prepared by Technical Committee CEN/TC 164 “Water supply”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

Introduction

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

1) 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;

2) 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 dimensional, the physical-chemical, the design, the hydraulic, the mechanical and the acoustic characteristics of mechanical disconnectors flow actuated Family G, type B.

This document is applicable to mechanical disconnectors flow actuated in nominal sizes DN 8 up to DN 250, intended to prevent the return of water having lost its original sanitary and drinking qualities (called “polluted water” in this document), into the potable water distribution system whenever the pressure of the latter is temporarily lower than in the polluted circuit.

This document covers the mechanical disconnector of PN 10 that are capable of working without modification or adjustment:

— at any pressure up to 1,0 MPa (10 bar);

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

It specifies also the test methods and requirements for verifying these 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 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 systems*

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 1717:2000, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 10310, *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 14901-1:2014+A1:2019, *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 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation (ISO 228-1)*

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 3822-3:2018, *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 3822-3:1984)*

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)*

3 Terms and definitions

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

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

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

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

3.1
mechanical disconnector, flow actuated — Family G, type B
device, also referred to as “GB”, the characteristics of which are as follows:

— two pressure zones in flow position: upstream and downstream;

— three pressure zones in drain position (zero-flow): upstream, intermediate and downstream. The upstream spring loaded obturator with discharge system and the downstream check valve separate the intermediate zone from the upstream and downstream zone;

— the disconnector is actuated by a mechanical hydraulic valve

— at zero flow the disconnector is in drain position;

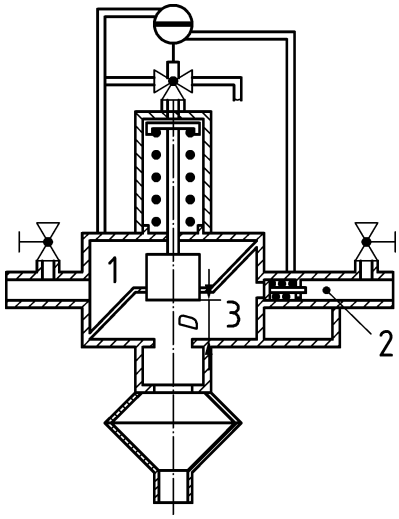
— flow position is achieved at a pressure difference $\Delta P \geq 50$ kPa (0,5 bar):

— a determined relief flow rate;

— a drain position visible directly or by a position indicator

Note 1 to entry: See Figure 1.

Note 2 to entry: For the purposes of this standard “Mechanical disconnector, flow actuated – Family G, type B” are hereafter referred to as “device”.



Key

1, 2, 3 pressure zones

D disconnection distance

Figure 1 — Design principle of Mechanical disconnector, flow actuated – Family G, type B

3.2
inlet pressure
p_1
pressure on upstream (inlet side, zone 1) of the device

3.3
intermediate pressure
p_i
pressure in the intermediate chamber of the device (in drain position $p_i = p_{atm.}$ and under flow condition $p_i = p_1$) (zone 3)

3.4
outlet pressure
p_2
pressure on the downstream (outlet side, zone 2) of the device

3.5
differential pressure
Δp
differential pressure between the inlet pressure p_1 and the outlet pressure p_2

3.6
differential pressure
Δpf
differential pressure between the inlet pressure p_1 and the outlet pressure p_2 in flow position

Note 1 to entry: f = flow position

3.7
differential pressure
Δpd
differential pressure between the inlet pressure p_1 and the outlet pressure p_2 in drain position

Note 1 to entry: d = drain position

3.8
set pressure
p_S
pressure at which the relief valve starts to open

3.9
disconnection distance
D
minimal vertical distance between the seat 1 of the relief valve and the seat 2 (see Figure 1) of the upstream zone

4 Denomination

For the purpose of this document for the devices the nominal sizes DN is a function of the minimum flow rate given in Table 4.

5 Designation

Mechanical disconnectors flow actuated Family G, Type B are designated by:

— name;

— reference to this document, EN 13434;

— family and type;

— nominal size;

— connection type;

— material of its body;

— surface finish (possible coatings);

— acoustic group (if applicable).

EXAMPLE Mechanical disconnector flow actuated, family G type B, DN 32, G 1 1/4 × G 1 1/4, brass, I, EN 13434.

6 Symbolization

The graphic representation of the mechanical disconnector flow actuated Family G, Type B is as follows (see Figure 2):

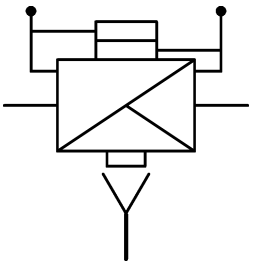


Figure 2 — Graphic symbol design principle of Mechanical disconnector

7 Physical-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 Standard;

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 10 % 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 the standard EN ISO 6509-1 and the product shall be marked in compliance with the indications according to Clause 11.

7.3 Surface of the body

7.3.1 General

The outside and inside surfaces of the device may or may not contain a coating. Such coating shall not impair the functional characteristics of the device.