

Devices to prevent pollution by backflow of potable water - Mechanical disconnect, direct actuated - Family G, type A

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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ICS 23.060.50

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English Version

Devices to prevent pollution by backflow of potable water
- Mechanical disconnecter, direct actuated - Family G, type
A

Dispositifs de protection contre la pollution par retour
de l'eau potable - Disconnecteur mécanique à action
directe - Famille G, type A

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

This European Standard was approved by CEN on 8 November 2021.

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European foreword

This document (EN 13433:2021) 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of an identical text or by endorsement, at the latest by June 2022, and conflicting national standards shall be withdrawn at the latest by June 2022.

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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 can 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, physical-chemical, design, hydraulic, mechanical and acoustic characteristics of mechanical disconnectors, direct actuated Family G, Type A.

This document is applicable to mechanical disconnectors 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 disconnectors of PN 10 that are capable of working without modification or adjustment:

- at any pressure up to 1,0 MPa (10 bar);
- with any pressure variation 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 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 1717:2000, *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 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 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 3822-3:2018)*

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 <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

mechanical disconnecter, direct actuated — Family G, Type A

device, also referred to as “GA”, the characteristics of which are as follows:

- two pressure zones in flow position: upstream (zone 1) and downstream (zone 2);
- two pressure zones in zero flow position (static): upstream (zone 1) and downstream (zone 2), check valve closed;
- three pressure zones in drain position: upstream (zone 1) and downstream (zone 2) and intermediate zone (zone 3) at atmospheric pressure;
- the upstream spring loaded obturator with discharge system and the downstream (zone 2) check valve separate the intermediate zone (zone 3) from the upstream (zone 1) and downstream zone (zone 2);
- flow position is achieved at a pressure $p_f \geq p_s + 50 \text{ kPa}$ (0,5 bar);
- the relief valve starts opening at the set pressure $p_s \geq p_{\text{stat}} + 50 \text{ kPa}$ (0,5 bar);
- drain position is achieved at a pressure $p_0 \geq p_s - 36 \text{ kPa}$ (0,36 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 document “Mechanical disconnecter, direct actuated — Family G, Type A” are hereafter referred to as “device”.