

Anti-pollution check valves - DN 6 to DN 250 inclusive Family E, type A, B, C and D

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13959:2004 sisaldab Euroopa standardi EN 13959:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.12.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13959:2004 consists of the English text of the European standard EN 13959:2004.</p> <p>This document is endorsed on 21.12.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: The purpose of this European Standard is to specify: - field of application of Anti-pollution Check Valves; - backflow prevention properties, dimensional and physio-chemical properties, and properties of general hydraulic, mechanical and acoustic design to which Anti-pollution Check Valves of nominal sizes DN 6 to DN 250 inclusive shall conform; - Family E, type A, controllable Anti-pollution Check Valve (with test port); - Family E, type B, non-controllable Anti-pollution Check Valve, including Cartridge Check Valve; - Family E, type C, controllable Anti-pollution Double Check Valve (with test ports); - Family E, type D, non-controllable Anti-pollution Double Check Valve, including Cartridge Double Check Valve;</p>	<p>Scope: The purpose of this European Standard is to specify: - field of application of Anti-pollution Check Valves; - backflow prevention properties, dimensional and physio-chemical properties, and properties of general hydraulic, mechanical and acoustic design to which Anti-pollution Check Valves of nominal sizes DN 6 to DN 250 inclusive shall conform; - Family E, type A, controllable Anti-pollution Check Valve (with test port); - Family E, type B, non-controllable Anti-pollution Check Valve, including Cartridge Check Valve; - Family E, type C, controllable Anti-pollution Double Check Valve (with test ports); - Family E, type D, non-controllable Anti-pollution Double Check Valve, including Cartridge Double Check Valve;</p>
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Võtmesõnad:

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English version

**Anti-pollution check valves - DN 6 to DN 250 inclusive family E,
type A, B, C and D**Clapets de non retour antipollution DN 6 à DN 250 - Famille
E, Type A, B, C et DRückflussverhinderer - DN 6 bis DN 250 - Familie E, Typ A,
B, C und D

This European Standard was approved by CEN on 22 July 2004.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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Foreword

This document (EN 13959:2004) 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 April 2005, and conflicting national standards shall be withdrawn at the latest by April 2005.

This standard has been worked out in reference EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and 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 the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

1 Scope

The purpose of this document is to specify:

- field of application of anti-pollution check valves;
- backflow prevention properties, dimensional and physio-chemical properties, and properties of general hydraulic, mechanical and acoustic design for anti-pollution check valves of nominal sizes DN 6 to DN 250 inclusive;
- family E, type A, controllable anti-pollution check valve (with test port);
- family E, type B, non-controllable anti-pollution check valve, including cartridge check valve;
- family E, type C, controllable anti-pollution double check valve (with test ports);
- family E, type D, non-controllable anti-pollution double check valve, including cartridge double check valve;
- test procedures and requirements for verifying the backflow protection properties of stop valves, draw-off taps etc. which incorporate a check valve function. Stop valves, draw off taps etc, need also to comply with a recognised standard;
- marking;
- presentation at delivery.

This document specifies the characteristics of anti-pollution check valves of DN 6 up to and including DN 250 that are suitable for use in drinking water systems. For application feasibility see Table 1.

Table 1 — Nominal size vs Conditions of use

Nominal size (DN)	Max. Operating temperature	Max. Operating pressure	Installation
DN ≤ 50	65 °C + 90 °C, 1 h	1 000 kPa (10 bar)	Any position
DN > 50	65 °C	1 000 kPa (10 bar)	Horizontal only

Anti-pollution check valves covered by this document are of pressure class PN 10. In case of devices with pressure class PN 16, the anti-pollution check valves has to comply with the tests which characterise the PN of the device.

The field of application of EN 1717 is limited to 10 bar, flanges could be drilled in PN 16 pattern.

2 Normative references

The following referenced documents are indispensable for the application 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 558-1, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanges pipe systems — Part 1: PN-designated valves.*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges.*

EN 1092-2, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges.*

EN 1092-3, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 3: Copper alloy flanges.*

EN 1254-1, *Copper and copper alloys — Plumbing fittings — Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes.*

EN 1254-2, *Copper and copper alloys — Plumbing fittings — Part 2: Fittings with compression ends for use with copper tubes.*

EN 1254-3, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes.*

EN 1254-4, *Copper and copper alloys — Plumbing fittings — Part 4: Fittings combining other end connections with capillary or compression ends.*

EN 1267, *Valves - Test of flow resistance using water as test fluid.*

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

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 3822-1:1999).*

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-live valves and appliances (ISO 3822-3:1997).*

EN ISO 5167-3, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full — Part 3: Nozzles and Venturi nozzles (ISO 5167-3:2003).*

EN ISO 6509, *Corrosion of metals and alloys — Determination of dezincification resistance of brass (ISO 6509:1981).*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests.*