SLOVENSKI STANDARD
SIST EN 13078:2004

01-maj-2004

Naprave za varovanje pred onesnaģenjem pitne vode zaradi povratnega toka - Prosti iztok s potopljeno cevjo in ozraļ enim prelivom - Druģina A, tip C

Devices to prevent pollution by backflow of potable water - Air gap with submerged feed incorporating air inlet plus overflow - Family A, type C

Sicherungseinrichtungen zum Schutz des Trinkwassers gegen Verschmutzung durch Rückfließen - Freier Auslauf mit belüftetem Tauchrohr und Überlauf - Familie A, Typ C

Dispositifs de protection contre la pollution de l'eau potable par retour - Surverse avec alimentation immergée incorporant une entrée d'air et un trop plein - Famille A, type C

Ta slovenski standard je istoveten z: **EN 13078:2003**

ICS:

13.060.20	Pitna voda	Drinking water
23.060.99	Drugi ventili	Other valves
91.140.60	Sistemi za oskrbo z vodo	Water supply systems

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EUROPEAN STANDARD

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ICS 13.060.20; 23.060.99

English version

Devices to prevent pollution by backflow of potable water - Air gap with submerged feed incorporating air inlet plus overflow - Family A, type C

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This European Standard was approved by CEN on 1 September 2003.

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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 Management Centre has the same status as the official versions.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13078:2003) 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of an identical text or by endorsement, at the latest by May 2004, and conflicting national standards shall be withdrawn at the latest by May 2004.

Annex A is normative.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland 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 standard:

a) this standard provides no information as to whether the product may be used without restriction in any of the Member State 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 characteristics and the requirements of air gaps with submerged feed incorporating air inlet and an overflow, Family A, type C. Air gaps are devices for protection of potable water in water installations from pollution. This standard applies to air gaps in factory assembled products and to constructed air gaps in situ and defines the physico-chemical characteristics of materials of construction used for the purpose and application to ensure compliance with this standard during normal working use.

Annex A specifies the vacuum test.

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

EN 837-1, *Pressure gauges – Part 1: Bourdon tube pressure gauges – Dimensions, metrology, requirements and testing.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1717:2000, and the following apply.

3.1
air gap with submerged feed incorporating air inlet plus overflow Family A, type C
"A C" air gap is a permanent and vertical distance between the lowest point of the air inlet orifice in the feed pipe and the critical water level at which the container overflows

NOTE See Figure 1 for the design principle.

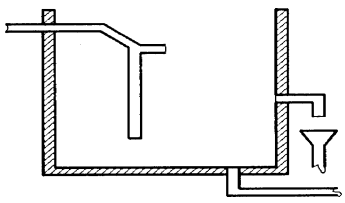

Figure 1 — Design principle

3.2
spillover level
level at which water will start to overflow the receiving vessel with all outlets closed

3.3
critical water level
physical or piezometric level of the liquid reached in any part of the appliance 2 s after closing the water inlet starting from maximum fault level

3.4
dimension *h*
height between the spillover level and the critical level

3.5
maximum level
highest water level *H* reached above the spillover level under positive pressure fault conditions with all outlets closed

3.6
splashing
when contamination from microbiological or viral elements is likely to occur and when maintaining the maximum flow rate at the normal operational level, will contact be observed between the air inlet orifice and the liquid in the receiving vessel due to the splashing, foaming or turbulence, the air gap will be increased to a point where no contact is observed

3.7
diameter of feed pipe (bore *D*)
diameter *D* is the maximum internal diameter found within the last metre of the supply pipe or the DN of the inlet connection

NOTE The dimension is in millimetres.

4 Symbolization

The graphic representation of the air gap with submerged feed incorporating air inlet plus overflow Family A, type C is as follows (see Figure 2).

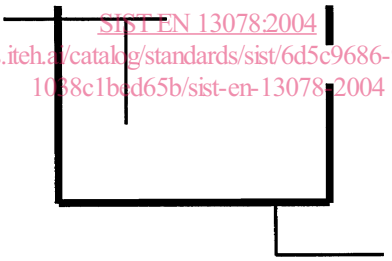

Figure 2 — Graphic symbol

5 Designation

An air gap with submerged feed incorporating air inlet plus overflow Family A, type C is designated by:

— name;

— family and its type;

— denomination (see 3.7 DN or D);

— reference to this standard.

EXAMPLE Air gap, EN 13078, Family A, type C, DN 15.

6 Materials

The manufacturer shall state the type of materials chosen in his technical and commercial documents.

The materials used in water installations, including the materials of protection units in contact with drinking water, shall satisfy the European Standards and national acceptance criteria and/or national restrictions for use currently in force in EU and EFTA.

They shall be compatible among themselves, with the water supplied and with the fluids or substances that can come into contact with them.

There are no special requirements concerning the materials used downstream of the atmospheric outlet opening provided they do not have any harmful effect on the upstream part.

7 Requirements

7.1 General

The protection assembly comprises four parts integral with one another:

— water inlet device;

— receiving vessel (container);

— air inlet orifice;

— overflow.

7.2 Water inlet device

Every float-operated valve or other device, which controls the inflow of water to receiving vessel, shall be securely and rigidly fixed to that vessel.

Every feed pipe supplying water to such a valve or other device shall be fixed in its position to prevent it from moving or buckling.

The air inlet orifice shall not come into contact in any way with a product from downstream; it shall always be above the maximum level *H*.

Adjustable or dismantle able joints to submerged supply pipes to the inlet device are not permitted below the critical level. Submerged supply pipes shall be made from corrosion resistant materials and be pressure tested as part of the inlet device.

7.3 Overflow arrangement

The overflow arrangements shall not be less than 19 mm internal diameter.

The overflow arrangements shall include an air break prior to a connection to drain. An air break to drain shall comply with the requirements of EN 1717, excluding WCs.

7.4 Air gap (distance)

7.4.1 Single supply

For air gaps Family A, type C the critical water level shall be established and the air gap distance *A* measured from the lowest point of the air inlet orifice to the critical water level and shall also satisfy the vacuum test in annex A (see Figure A.1). The distance *A* is ≥ 20 mm for valves not exceeding G½, ≥ 25 mm for valves exceeding G½ but not exceeding G¾ and 2 *D* for valves exceeding G¾.

The distance *h* is determined by measurement of the depth of water above the spillover level of the overflow 2 s after the inflow equal to $Q = 0{,}14\ D^2$ in litres per minute has stopped, or, a dynamic pressure of 1 MPa (10 bar) has stopped if the flow rate *Q* cannot be achieved, where *D* is the inlet bore (see 3.7) and with all outlets closed (except