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**Naprave za varovanje pred onesnaženjem pitne vode zaradi povratnega toka -  
Prosti iztok z injektorjem - Družina A - Tip D**

Devices to prevent pollution by backflow of potable water - Air gap with injector - Family  
A - Type D

Sicherungseinrichtungen zum Schutz des Trinkwassers gegen Verschmutzung durch  
Rückfließen - Freier Auslauf mit Injektor - Familie A - Typ D

Dispositifs de protection contre la pollution de l'eau potable par retour - Surverse par  
injecteur - Famille A - Type D

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**Ta slovenski standard je istoveten z: EN 13079:2003**

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**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

**SIST EN 13079:2004****en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13079**

September 2003

ICS 13.060.20; 23.060.99; 91.140.60

English version

**Devices to prevent pollution by backflow of potable water - Air  
gap with injector - Family A - Type D**

Disconnexion sans pièce mobile pour la prévention de la  
contamination de l'eau pour retour - Spécification pour les  
surverses par injecteur de type AD

Sicherungseinrichtungen zum Schutz des Trinkwassers  
gegen Verschmutzung durch Rückfließen - Freier Auslauf  
mit Injektor - Familie A - Typ D

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

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 Management Centre 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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

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## Foreword

This document (EN 13079:2003) 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 March 2004, and conflicting national standards shall be withdrawn at the latest by March 2004.

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.

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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 standard:

- a) this standard provides no information as to whether the product may be used without restriction in any 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.

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## 1 Scope

This European Standard specifies the characteristics and the requirements of air gaps with injector Family A Type D intended 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.

## 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.*

## 3 Terms and definitions

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

### 3.1

#### air gap with injector Family A – Type D

'AD' air gap with injector is a permanent distance between the upstream feed orifice and the downstream receiving orifice

NOTE 1 This device is intended to work in the horizontal plane only.

NOTE 2 See Figure 1 for the design principle.

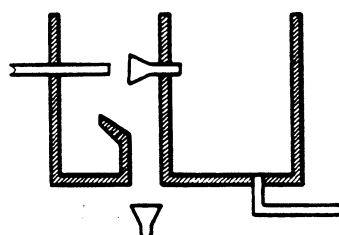


Figure 1 — Design principle

### 3.2

#### diameter of upstream feed pipe (bore "D")

diameter 'D' is the internal diameter of the upstream feed orifice

## EN 13079:2003 (E)

## 4 Designation

An air gap with injector Family A – Type D is designated by:

- its name;
- its family and its type;
- its denomination (DN or D, see 3.2);
- the reference to this standard.

EXAMPLE f

Air gap Family A - Type D DN 15, EN 13079.

## 5 Symbolization

The graphic representation of the air gap with injector Family A – Type D is as follows (see Figure 2).



Figure 2 — Graphic symbol

## 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 protector 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 with each other, with the water supply and with the fluids or substances that can come in to contact with them.

There are no special requirements concerning the materials 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:

- an injector/upstream feed orifice;
- a receiving device/downstream receiving orifice ;



- a receiving vessel (downstream element);
- an airbreak to drain.

## 7.2 Upstream feed orifice

The upstream feed orifice of the injector shall discharge across the horizontal distance 'A' (the air gap).

The smallest dimension for calculating the inlet section shall not be less than 4 mm. It shall not be possible for the injection orifice to be in contact with a product from downstream, whether owing to backflow or bending or deformation of the assembly. Every feed pipe supplying water to such a valve assembly or other device shall be fixed in its position to prevent it from moving or buckling.

## 7.3 Downstream receiving orifice.

This orifice shall be sized to accommodate the full flow rate of the feed it shall be positioned on the same horizontal axis and will discharge into the receiving vessel. Every pipe receiving water from such an assembly shall be fixed in its position to prevent it from moving or buckling.

## 7.4 Receiving vessel

The receiving vessel shall be so positioned that wasted water is kept to an absolute minimum and to ensure that any water returning due to the maximum possible positive pressure backflow does not come into contact with the upstream feed orifice.

## 7.5 Airbreak to drain

The airbreak to drain shall be capable of draining off the maximum flow rate without contacting the inlet device(injector(s)), with all injectors discharging with a individual flowrate of  $Q = 0,14D^2$  l/min. or, a dynamic pressure of 1 MPa (10 bar) if the flow rate  $Q$  cannot be achieved when the receiving vessel feed pipes are closed. The airbreak to drain shall comply with the requirements of EN 1717.

## 7.6 Air gap (Distance "A")

The airgap distance is the horizontal distance between the terminal end of the upstream orifice (injector) and the inlet end of the downstream receiving orifice. The distance, A, shall not be less than the value  $A \geq 2D$  but not less than 20mm (see Figure 3).

In normal conditions of use, no splashing towards the outside shall be observed.

There shall be no contact observed with the upstream component owing to retention, runoff, splashing or dripping from the downstream component.