



SLOVENSKI STANDARD
SIST EN 14367:2005

01-december-2005

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Non controllable backflow preventer with different pressure zones - Family C, type A

Systemtrenner mit unterschiedlichen nicht kontrollierbaren Druckzonen - Familie C, Typ A

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Disconnecteur non contrôlable a zones de pression différentes - Famille C, type A

[SIST EN 14367:2005](#)

Ta slovenski standard je istoveten z: **EN 14367:2005**

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ICS:

91.140.60 Sistemi za oskrbo z vodo Water supply systems

SIST EN 14367:2005

en

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EUROPEAN STANDARD

EN 14367

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2005

ICS 91.140.60

English Version

Non controllable backflow preventer with different pressure zones - Family C, type A

Disconnecteur à zones de pression différentes non contrôlables - Famille C - type A

Systemtrenner mit unterschiedlichen nicht kontrollierbaren Druckzonen - Familie C, Typ A

This European Standard was approved by CEN on 3 February 2005.

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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 Central Secretariat has the same status as the official versions.

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

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Foreword

This document (EN 14367:2005) 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of an identical text or by endorsement, at the latest by December 2005, and conflicting national standards shall be withdrawn at the latest by December 2005.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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.

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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 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.

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1 Scope

This document specifies the:

field of application;

the dimensional, the physico-chemical, the design, the hydraulic, the mechanical and the acoustic characteristics of non-controllable backflow preventer with different pressure zones, family C, type A, nominal sizes DN 6 to DN 50, nominal pressure PN 10.

It is applicable to:

— Family C, type A, class "a" for general use: devices of class "a" shall be capable of working:

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

with any pressure variation up to 1 MPa (10 bar);

at a supply temperature limit of 65 °C and 90 °C for 1 h;

— Family C, type A, class "b" for specific use: devices of class "b" shall be capable of working:

at any downstream pressure up to 0,3 MPa (3 bar);

with any downstream pressure variation up to 0,3 MPa (3 bar);

The devices of class "b" having specific hydraulic and no acoustic requirements and are meant for equipped filling devices built-in one or two functions boilers (heating only or heating and production of sanitation hot water). It concerns boilers with a 70 kW maximum power and maximum temperature of 110°C.

It specifies also:

— test methods and requirements for verifying these characteristics;

— marking;

— presentation and the delivery.

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

EN 1267:1999, *Valves-Test of flow resistance using water as test fluid.*

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

EN 13959, *Anti-pollution check valves - DN 6 to DN 250 inclusive Family E, Type A, B, C and D.*

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EN ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads - Part 1: Dimensions, tolerances and designation (ISO 228-1:2000).*

EN ISO 3822-1:1999, *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 3822-3:1997, *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 .*

EN ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements (ISO 5167-1:2003).*

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

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads -- Part 1: Dimensions, tolerances and designation.*

ISO 965-1, *ISO general-purpose metric screw threads -- Tolerances -- Part 1: Principles and basic data .*

3 Terms and definitions

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

3.1

non controllable backflow preventer with different pressure zones — Family C — Type A

the specific characteristics of this device called “CA”, are as follows:

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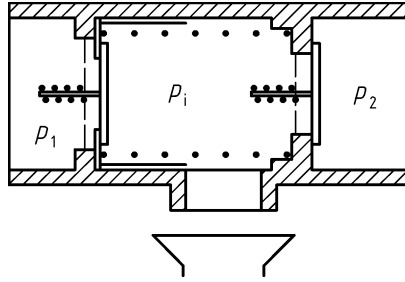
The device is divided into three zones: [standards.iteh.ai/catalog/standards/sist/96c628a6-c177-403b-9f33-e3d55e894cc3/sist-en-14367-2005](#)

- one upstream zone p_1 ;
- one intermediate zone (p_i not measurable) vented to the atmosphere;
- one downstream zone p_2 .

The device provides disconnection by venting the intermediate pressure zone to the atmosphere when the difference of pressure between the intermediate zone and the upstream zone is less than 10 % of the upstream pressure ($p_i - p_1 < 10 \% p_1$).

It ensures a discharge (backflow rate) through the intermediate zone, at least equal to the given discharge flow rate.

Means for the control of the protection device are not included.



Key

- 1 upstream zone p_1
- 2 intermediate zone p_i
- 3 downstream zone p_2

Figure 1 — Design principle

For the purposes of this standard “Non controllable backflow preventer with different pressure zones — Family C — Type A” is hereafter referred to as «device».

3.2 Specific use **iTeh STANDARD PREVIEW**

Specific use is related to use the backflow protection device at the filling point of domestic sealed heating systems.

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4 Nominal size (denomination) **(standards.iteh.ai)**

4.1 Class a device

The denomination of the device is given in Table 1:

Table 1 — DN versus threads of Class a device

Denomination DN	6	8	10	15	20	25	32	40	50
Threads of tailpieces	G1/8	G1/4	G3/8	G1/2	G3/4	G1	G1 1/4	G1 1/2	G2

4.2 Class b device

The denomination of this device is not related to the size of connection. All Class b devices shall comply with the same performances requirements.

5 Designation

A non controllable backflow preventer with different pressure zones family C, type A is designated by:

— family, its type and class;

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- denomination (see Table 1) except class b device;
- connection type;
- material of its body;
- surface finish (possible coating);
- acoustic group (for $DN \leq 32$) except class b device;
- reference to the present standard.

EXAMPLE for a designation:

class a:

- Non controllable backflow preventer with different pressure zones, EN 14367, family C, type A, class a, DN 20, G3/4 × G3/4, bronze, I,

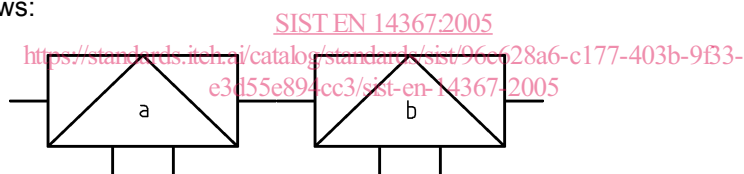
class b:

- Non controllable backflow preventer with different pressure zones, EN 14367, family C, type A, class b, M10 × 1, brass,

6 Symbolization

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The graphic representation of the non controllable backflow preventer with different pressure zones — family C, type A is as follows:



2 a) Class a

2 b) Class b

Figure 2 — Graphic symbol**7 Physico-chemical characteristics****7.1 Materials**

The materials and the coatings used, liable to come normally or accidentally in contact with potable water, shall satisfy the EC regulations concerning water quality.

And therefore, they:

- shall be corrosion resistant;
- shall be prone to the least scaling possible;

— shall be in conformity with the European Standards and regulations;

— shall be compatible among themselves; and

with the water distributed;

with the fluids or matter liable to come into contact with them;

with the products normally used for disinfection operations of the network: potassium permanganate and sodium hypochlorite.

7.2 Nature of the materials

- a) The choice of materials is left to the discretion of the manufacturer.
- b) 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 products have to guarantee a dezincification depth less than 200 μm in any direction, they have to be tested in accordance with the standard EN ISO 6509 and have to be marked in compliance with the indications under clause «Marking»;
- c) neither the materials nor the coatings used shall, by normal or accidental contact with drinking water, cause any risk of affecting or modifying the water up to a temperature of 90 °C (see also clause 1). The suitability of the water for human consumption is defined by national regulations;
- d) the manufacturer shall state in his technical and sales literature the nature of the materials and the coatings selected;
- e) the materials, and in particular copper alloys, for which recommendations or international standard exists shall comply with the relevant recommendations or international standards;
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- f) the devices whose whole body or part of it is made of plastic shall, in addition to the tests referred to in this standard, be submitted to complementary tests described in annex A.

8 Design

8.1 General

- a) Only the pressure of the water (upstream and/or downstream): shall have an affect of the function of components of the device;
- b) the settings of the springs shall be fixed and not adjustable;
- c) as regards devices designed in such a way that the access to the internal parts is possible (for inspection, repair or replacement), these components shall be able to be refitted at their initial place without ambiguity (impossibility of reversal, interchange of obturators, diaphragms, springs, ...). A visible mark is not sufficient.

8.2 Relief valve

If the relief valve system operates by means of pilot tube then the cross section of the pilot tube shall be equal to or greater than 45 mm^2 for devices $\text{DN} > 15$ or 12,5 mm^2 for devices $\text{DN} \leq 15$ no dimension being less than 4 mm.

The water passage through the discharge orifice shall have a cross-section of minimal 12,5 mm^2 .

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The smallest dimension used to calculate this cross-section shall not be inferior to 4 mm for non-moving part.

The control of the relief valve shall be of positive safety, i.e. in case of rupture or leakage, the relief shall be open.

This will be checked by examination of the behaviour of the device, after dismantling the control system of the relief valve (diaphragm, piston seal ...).

An air break to drain shall be placed at the discharge outlet. An air gap shall exist between any waste drain and any means to collect the discharged water (floor, tundish, curb, sink ...).

The device shall be capable, by design, evacuating the full relief flow rate as defined in 9.6.4 without spilling to the outside of the air break to drain.

Class a device shall be equipped with:

The air break to drain shall meet the dimensional requirements of chapter 9 of EN 1717:2000.

This air break to drain shall be:

- either directly incorporated into the device;
- or factory fitted;
- or supplied with the device.

In the last two cases, the relief valve outlet of the device shall permit neither fitting of a standardized threaded pipe, nor the connection by the inside of a standardized pipe or shape, be it by glue, welding or interlocking.

Class b device shall be equipped with:

- At least two air inlets openings with each a minimum cross-section of 12,5 mm² upstream of the relief piping shall be incorporated.

The smallest dimension used to calculate this cross-section shall not be less than 4 mm.

- A discharge construction allowing fitting of a standardized threaded or plain pipe without disturbing the working of the relief valve system and without obturating, even partially, the air inlets opening.

9 Characteristics and test methods**9.1 General**

Performance tests shall be carried out on the device as installed in accordance with the manufacturer's technical documents.

9.2 General tolerances**9.2.1 Accuracy of measurements**

In the absence of any particular specifications:

- flow rate and pressure : $\pm 2\%$ of the value specified;
- temperature : cold water ± 5 K of the value specified;