

Antipollution of water installations

Technical document 045-11

Combined antipollution products and
assembled antipollution units

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MODIFICATION HISTORY

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01	25/07/2022	- Editorial update according to the structure in force following the creation of the Technical management appendix of the NF045 reference system rev. 17.

Table of contents

1	TECHNICAL SPECIFICATIONS-----	5
1.1	General -----	5
1.1.1	Scope-----	5
1.1.2	Normative and technical references -----	5
1.1.3	Definitions-----	5
1.2	Field of application -----	6
1.3	Marking -----	6
1.4	Technical documentation and presentation at delivery-----	6
1.4.1	Technical documentation-----	6
1.4.2	Presentation at delivery -----	6
1.5	Verification and maintenance of the devices-----	7
1.6	Materials-----	7
1.7	Analysis methodology-----	7
1.7.1	Analysis overview diagram -----	7
1.7.2	The different stages in the analysis -----	7
1.7.3	Tests-----	8
1.8	Combined antipollution product and assembled antipollution unit-----	8
	Appendix A-----	8

1 TECHNICAL SPECIFICATIONS

This document defines the analysis method used to assess the "combined antipollution products" within the framework of certification.

If the devices that make up the combined product diverge from the design described in the normative reference documents, the requirements and the test methods may be adapted accordingly.

1.1 General

1.1.1 Scope

The purpose of this document is to define the following:

- the technical requirements (i.e. dimensions, materials, performances, etc.)
- the test methods
- the marking and presentation at delivery

pertaining to combined antipollution products connected to the potable water supply system, that combine with existing devices designed based on European standards.

1.1.2 Normative and technical references

NF EN 1717 :2001, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow.*

NF EN 13828 :2004, *Building valves - Manually operated copper alloy and stainless steel ball valves for potable water supply in buildings - Tests and requirements.*

NF EN 13959 :2005, *Anti-pollution check valves DN 6 to DN 250 inclusive - Family E, Type A, B, C and D.*

1.1.3 Definitions

For the purpose of this document, the terms and definitions below apply.

Function:

Hydraulic and/or mechanical action(s) associated with a device (non-return, isolation, filtration function, etc.).

Device:

Hydraulic element subjected to a specific standard (backflow preventer BA, antipollution check valve EA, RTS (ball valve), etc.).

Combined antipollution product:

One-piece product that combines at least two functions and whose main function is related to antipollution.

Assembled antipollution unit:

A set of associated devices among which at least one ensures backflow prevention.

1.2 Field of application

The field of application is defined in the appendices to this document, specific to each combined antipollution product.

1.3 Marking

The marking shall be permanent and legible.

The information shall be indelible and formed by casting, engraving or any other method.

It shall indicate at least the following information:

- - On the product's body: The holder's name or logo,
- The family and the type of antipollution protection device,
- The flow direction,
- The DN,
- The acoustic group,
- The certification logo,
- The fluid's maximum temperature permitted.

- If there is a lever,

- the direction of operation of the lever,
- the certification logo.

1.4 Technical documentation and presentation at delivery

1.4.1 Technical documentation

Technical documentation shall be supplied with the product.

It shall indicate the following:

Information	To be placed on	
	Documentation	Packaging
Field of application (max T° in °C, PN, DN, etc.)	X	X (*)
Recommended use	X	X (*)
Holder's name or logo	X	X
Family, type	X	X
Connection dimensions	X	X
Flow rate/Head loss curve	X	
Reference of the product	X	X
Reference to Technical document DT045-11 and to normative references	X	X(*)
Certification logo	X	X
Assembly and installation instructions	X	X(*)
Instructions for use and maintenance	X	X(*)
Spare parts	X	
Type of materials	X	

(*) This information is optional

1.4.2 Presentation at delivery

The presentation at delivery is specified in each appendix.

1.5 Verification and maintenance of the devices

The verification and maintenance requirements are specified in each appendix.

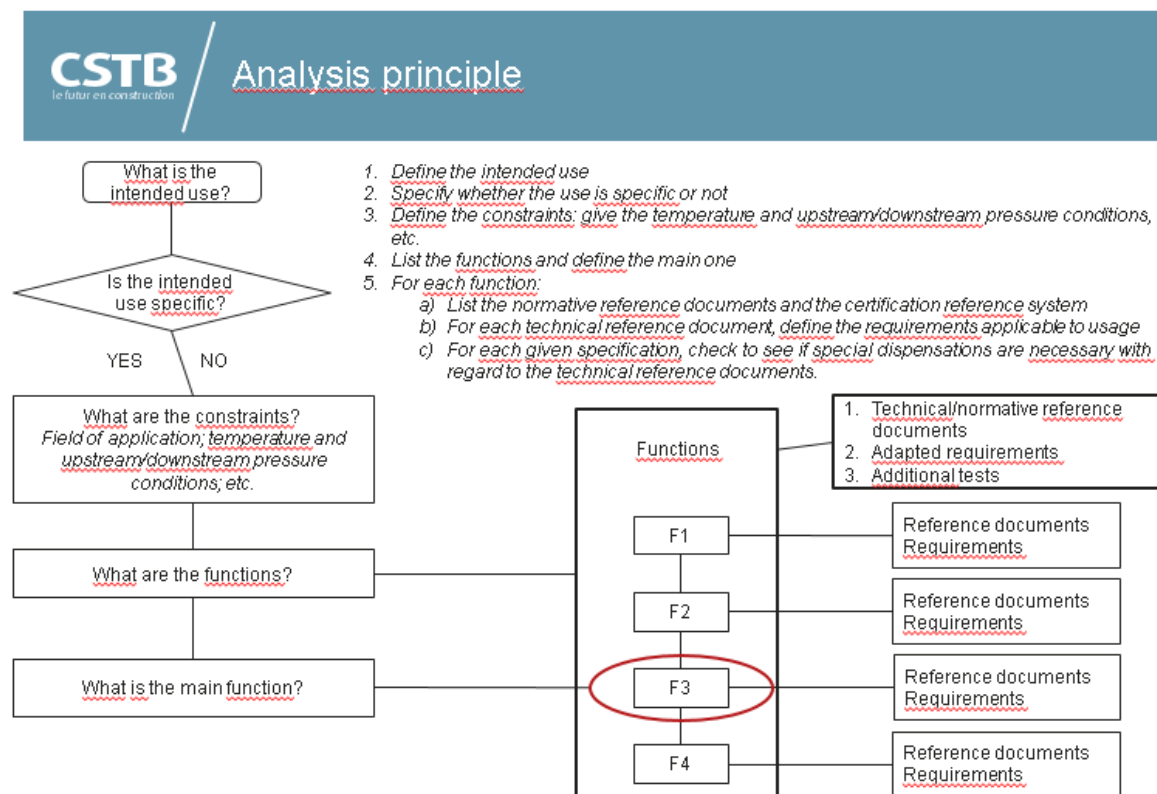
1.6 Materials

The materials shall comply with the French regulations in force.

It is the responsibility of the applicant/holder to use materials that are suitable for use.

1.7 Analysis methodology

1.7.1 Analysis overview diagram



1.7.2 The different stages in the analysis

Step 1: Define the intended use.

Step 2: Specify whether the use is specific or not.

Step 3: If the use is specific, define the constraints: give the temperature and upstream/downstream pressure conditions.

Step 4: List the standardised functions and define the main function.

Step 5: For each function

1. List the normative reference documents and the certification reference system
2. For each technical reference document, define the requirements applicable to the intended use
3. For each given specification, check to see if special dispensations are necessary with regard to the technical reference documents.

Step 6: List the non-standardised functions and for each of them, specify the tests to be performed.

1.7.3 Tests

The tests are conducted in accordance with the normative reference documents, taking into account the results of the analysis described above.

1.8 Combined antipollution product and assembled antipollution unit

See the analysis pertaining to the different combinations in appendix.

Appendix A Combination no. 1

1. Definition

Combination no. 1 associates both functions in the flow direction:

- RTS (ball valve) design isolation according to Standard NF EN 13828,
- Backflow prevention Type EA according to Standard NF EN 13959.

This combination complies with the EA protection unit described in Appendix A of Standard NF EN 1717.

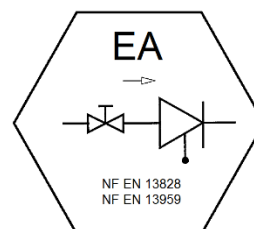
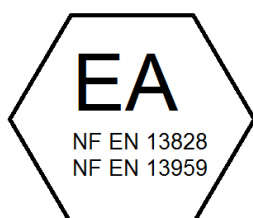
2. Field of application

Appendix A applies to combined antipollution products and to assembled antipollution units from DN 15 to 50.

The use conditions are as follows:

- Temperature: 5°C to 65°C uninterrupted and 90 °C for an hour,
- Maximum operating pressure of 1000 kPa (10 bar),
- Installation in whatever position.

3. Graphic symbol for the combination



4. Analysing the combination

Step 1: Define the intended use:

Antipollution check valve and isolation from the water system

Step 2: Specify whether the use is specific or not:

This product is intended for use in a potable water supply system.

Its field of application refers to EA antipollution check valves, which is more restrictive than the RTS (ball valve) field of use defined in Technical document DT079-09.

Step 3: Definition of the constraints:

The constraints are those related to the field of application.

Step 4: List the standardised functions and define the main function:

The standardised functions in the flow direction are as follows:

- Isolating valve
- Controllable antipollution check valve

This combined antipollution product protects an upstream potable water supply system from any backflow from a category 2 downstream water supply system as laid down in Standard NF EN 1717.

The main function is the backflow prevention function (controllable antipollution check valve).

Step 5: Technical reference documents, requirements of each function and possible dispensations

- Isolating valve: Standard NF EN13828 and Technical document DT079-09

- Angular seal
- Operating torque
- Leak-tightness
- Stop resistance
- Checking the roughness of the sphere
- Endurance (dispensation) only 90°C for 1hr / 65°C
- Hydraulic strength of the operating axis
- Dimensions of the connections and of the lever
- Colour

- Check valve EA: Standard NF EN 13959 and Technical document DT045-06

- All the requirements laid down in the standard except for the dimensions of the connections and for the overall external dimensions.

5. Presentation at delivery

The products shall be delivered ready to be installed.

6. Verification and maintenance of the devices

The device shall be designed in accordance with Standard NF EN 13959 so that both verification and maintenance operations can be conducted as provided for in the regulatory documents or technical guides or maintenance sheets, etc.