TECHNICAL DOCUMENT

WATER

Antipollution of water installations

Technical document 045-08

Testing device

Technical document 045-08 rev. 16
25/07/2022

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Modification history

Revision No.	Date	Modifications
15	**01/07/2017**	**Update to the document introduction and reference.** **Basic modifications:** - Part 1: Technical specifications Chapter 4: Extra details concerning valve No. 7 removed Chapter 8: Terminology modified – the term “transmitter” has been deleted - Part 2 Production quality requirements Paragraph 2.1.2: extra details on the testing device and procedures added - Part 3 Inspection procedures employed by the CSTB; the following chapters have been removed: Types of products and Inspection operations following admission Extra details added on sampling during admission.
16	**25/07/2022**	- Chapter 4: Addition of a note concerning valve no. 7. - 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

Standard NF P 43-018 was formally approved on 5 May 1990.

This standard is used as a technical reference for the on-site testing device for checking BA backflow preventers.

Admission requests for electronic instruments and devices equipped with mechanical differential pressure gauges whose measurement range is below 1 bar have required certain articles of the standard to be supplemented.

The purpose of this document is to add detail to certain paragraphs of Standard NF P 43-018 using the same paragraph numbers, and to supplement this reference system.

1 Purpose

No modifications.

2 Field of application

Please note that Standard NF P 43-010 was replaced in April 2003 by Standard NF EN 12729.

3 Reference

NF EN 12729:2003, *Controllable backflow preventer with reduced pressure zone — Family B — Type A.*

4 Description

Note: This article supplements the specifications in article 4 of Standard NF P 43-018.

- Valve no. 7: Isolating valve of the differential pressure gauge – upstream pressure tap.

If an electronic differential pressure transmitter is used, valve cannot be installed. In that case, such information will have to be provided to the operator in the maintenance sheets, to alert him.

(Example: valve 7 does not apply to devices fitted with an electronic differential pressure gauge).

- The electronic on-site testing device shall be capable of operating independently of mains power.
- The electronic system shall have a charge fault indicator or system preventing the device from being used if insufficient voltage is available.

Verification of the charge fault indicator on the electronic testing device

When the device switches to charge fault mode, the values given by it shall comply with Points c and d of articles 8.1 and 8.2.

5 Denomination

No modifications.

6 Designation

No modifications.

7 Materials

No modifications.

8 Dimensional and metrological characteristics

8.1 Pressure gauges M1 and M2

The pressure range of the analogue or digital pressure gauges shall be 0-10 bar (minimum) and 0-25 bar (maximum). The minimum accuracy class shall be 2.

Analogue pressure gauges M1 and M2

For pressure gauges M_1 and M_2, the minimum permitted nominal dimension is **63.**

Whereby:

Nominal dimension	L min. (mm)	d_1 min (mm)
63	23	61
100	36	97
150	57	147

L: Minimum length of the needle
d_1: outer diameter of the case

Digital pressure gauges M1 and M2

Digital pressure gauges may be acceptable if:

a) The display height is 9 mm or over.
b) The pressure readout is expressed in bars.
c) There is 1 digit after the decimal point.
d) The accuracy class is 1 or above.
e) The protection rating of the case is IP 63 or above.
The b & d readouts and measurement range shall be readily visible.

8.2 Differential pressure gauge

The minimum permitted nominal dimension for the differential pressure gauge is **100**.

Whereby:

Nominal dimension	L min. (mm)	d_1 min (mm)
100	36	97
150	57	147

L: Minimum length of the needle
d_1: outer diameter of the case

Mechanical type differential pressure gauges with measurement ranges less than 1 bar may be accepted, if:

a) they have a measurement range of at least 400 millibars

b) they are fitted with a positive limit stop safety device

c) they are capable of withstanding a line pressure of 10 bar, irrespective of fitting direction

d) the maximum tolerated error at 140 millibars shall be equivalent to that of the differential pressure gauge described in the standard (Class 2, range 0-1 bar).

	Standard	Possible variants	
ΔP Max. (bar)	1	0.4	0.7
Class	2	4	2.5
Maximum tolerated error NF EN 837-1 (mbar)	± 16	± 12.8	± 14

Note: The PN 10 is commonly used.

Digital differential pressure gauge

The differential pressure gauge shall comply with the following specifications:

a) Minimum display height: 9 millimetres.

b) Pressure readout expressed in bars as a minimum requirement.

c) 2 digits after the decimal point with a resolution of 10 millibars

d) Minimum accuracy: Class 0.5 (over a measurement range of 2 bar max.).

e) Permissible static pressure corresponding to the nominal pressure of the device to be tested.

f) The case shall have a minimum protection rating of IP 63.

The b & d readouts and measurement range shall be readily visible.

The remainder of the standard articles remain unchanged.

Information note: The installation and maintenance information sheets are available on the CSTB website at the following address:

http://evaluation.cstb.fr/certifications-produits-services/produit/anti-pollution-des-installations-d-eau/

9 Mechanical characteristics

9.1 Pressure resistance and tightness

A check on the metrological conformity of the manometers is carried out before and after this test.