



SLOVENSKI STANDARD

SIST EN 13564-2:2003

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Anti-flooding devices for buildings - Part 2: Test methods

Rückstauverschlüsse für Gebäude - Teil 2: Prüfverfahren

Clapets anti-retour pour les bâtiments - Partie 2: Méthodes d'essais

Ta slovenski standard je istoveten z: EN 13564-2:2002

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ICS:

91.140.80 Drenažni sistemi Drainage systems

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EUROPEAN STANDARD
NORME EUROPÉENNE
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Anti-flooding devices for buildings - Part 2: Test methods

Clapets anti-retour pour les bâtiments - Partie 2: Méthodes
d'essais

Rückstauverschlüsse für Gebäude - Teil 2: Prüfverfahren

This European Standard was approved by CEN on 9 October 2002.

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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 13564-2:2002) has been prepared by Technical Committee CEN/TC 165 "Wastewater engineering", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2003, and conflicting national standards shall be withdrawn at the latest by May 2003.

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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies test methods for anti-flooding devices for buildings in accordance with EN 13564-1:2002.

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 1253-2, *Gullies for buildings — Part 2: Test methods*.

EN 13564-1:2002, *Anti-flooding devices for buildings — Part 1: Requirements*.

3 Test methods

3.1 Temperature cycling for anti-flooding devices of types 4 and 5

Check that the samples are in directly ex-factory condition. Mount them as defined in clause 9 of EN 13564-1:2002 in accordance with the manufacturer's installation instructions.

Admit water as follows:

- 1) 10 l/min hot water at (93 ± 2) °C for 60 s;
- 2) pause for 60 s;
- 3) 30 l/min cold water at (15 ± 5) °C for 60 s;
- 4) pause for 60 s.

Repeat this cycle 1 500 times (100 h).

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Check to ensure that there is no deformation or change in surface structure of any component impairing the fitness for use.

This test does not apply to anti-flooding devices made of materials not affected by temperature.

3.2 Temperature cycling for anti-flooding devices of types 0 to 3

Connect two lengths of pipe 1 m long each to the inlet and outlet of the sample.

Check that the samples are in directly ex-factory condition. This assembly shall be positioned in accordance with the manufacturer's installation instructions.

Admit water as follows:

- 1) 10 l/min hot water at (75 ± 2) °C for 60 s;
- 2) pause 60 s;
- 3) 30 l/min cold water at (15 ± 5) °C for 60 s;
- 4) pause 60 s.

Repeat this cycle 600 times (40 h).

Check to ensure that there is no deformation or change in surface texture of any component impairing the fitness for use.

This test does not apply to anti-flooding devices made of materials not affected by temperature.

3.3 Watertightness

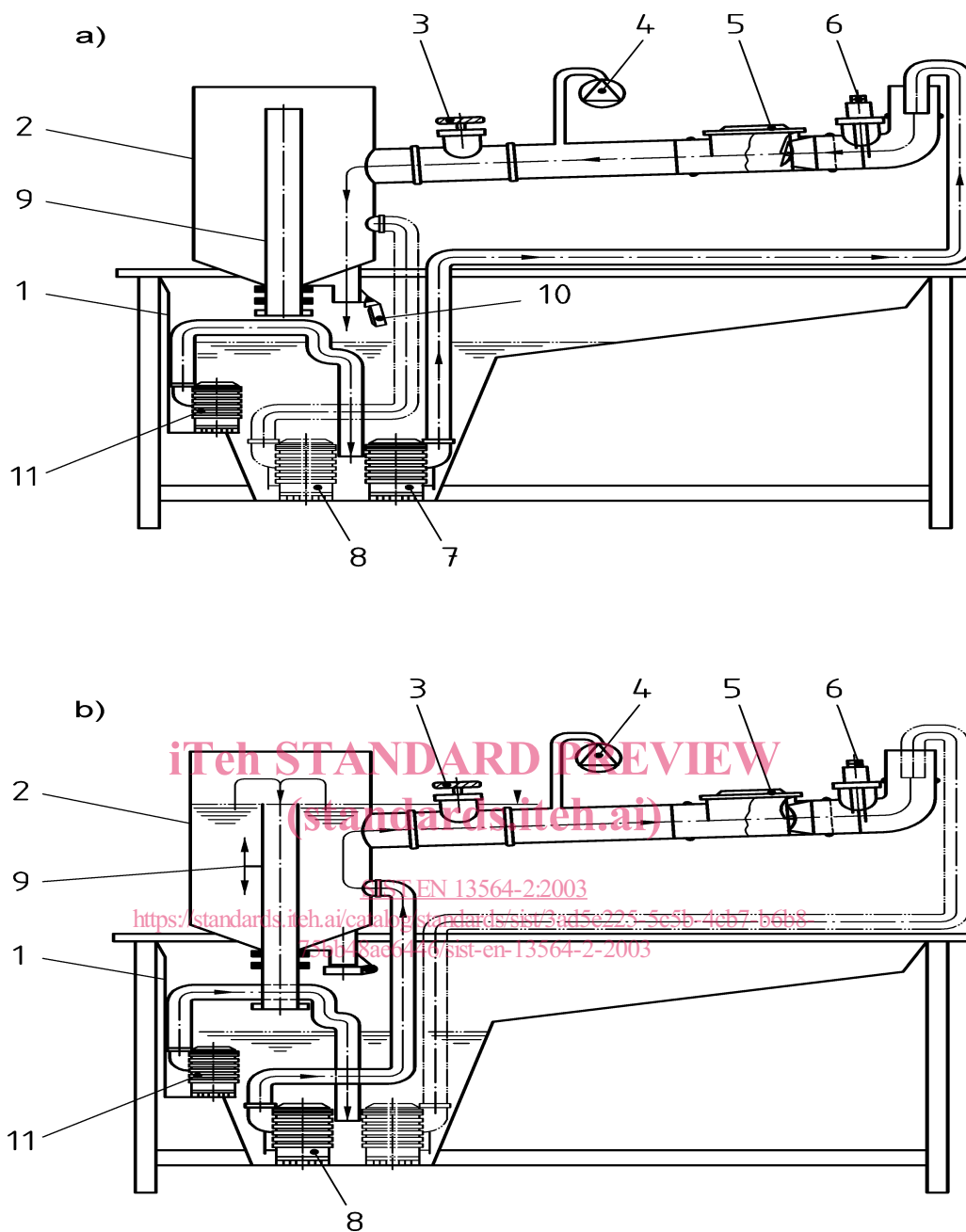
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Check the watertightness of the body of anti-flooding devices of types 0 to 3 by closing the inlet and outlet and submitting the assembly to a hydraulic pressure of 50 kPa for 5 min.

Anti-flooding devices of types 4 and 5 shall be tested in accordance with EN 1253-2.
No leakage shall be observed.

3.4 Effectiveness**3.4.1 Test arrangement**

The test arrangement according to Figure 1 shall be used for tests in accordance with 3.4.2 and 3.4.3.



- a) test arrangement for inflow condition – testing to 1 kPa
 b) test arrangement for backflow condition – testing to 50 kPa

Key

- 1 Reservoir for test medium, (150 ± 10) l
- 2 Reservoir for creating backflow conditions
- 3 Gate valve
- 4 Pressure tapping for 50 kPa pressure test
- 5 Sample
- 6 Electrodes/measuring device for indicating leakage (500 cm³)
- 7 Pump for inflow
- 8 Pump for backflow
- 9 Overflow for backflow level (1 kPa)
- 10 Control valve
- 11 Mixer pump

Figure 1 — Test arrangement

EN 13564-2:2002 (E)**3.4.2 Long-term test for all types of anti-flooding devices****3.4.2.1 Samples**

Three samples shall be tested, one of which shall also have passed the tests in accordance with 3.1 or 3.2 as applicable.

3.4.2.2 Test medium

To prepare the test medium the following ingredients shall be added to (150 ± 10) l of water:

- 300 ml of plastic particles with a density at least of 1,3 g/cm³ and sieve size of 2 mm to 5 mm;
- 750 small shreds of leatherette, absorbent and capable of swelling, with size of about 15 mm × 15 mm × 1 mm when dry;
- 450 plastic sticks with thickness of (4 ± 0,2) mm, length of (15 ± 1) mm and a density of least of 1,3 g/cm³;
- 450 plastic sticks with thickness of (4 ± 0,2) mm, length of (15 ± 1) mm and density of 0,90 g/cm³ to 0,95 g/cm³;
- 60 g lenticular wax granules of diameter of up to about 10 mm;
- 900 g of peat without additives dried at 105 °C for 24 h.

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3.4.2.3 Test pressure

In order to simulate surcharge a pressure of 1 kPa or 50 kPa shall be achieved for the tests set out in 3.4.2.4 and 3.4.2.5 in accordance with Table 1.

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The reference level for test pressure shall be the highest sealing point of the automatic closure device(s).

3.4.2.4 Test procedure for the automatic closure device(s)

For this test, the emergency closure device shall be in the open position.

In order to achieve a good mixture of the test medium the mixer pump shall be run during the whole test cycle.

The test shall comprise 30 test cycles A and 5 test cycles B as described in Table 1. After each 5 test cycles A the test may be interrupted.

The test cycle A shall include the steps 1 to 8, the test cycle B the steps 9 to 18 in the sequence indicated in each case. Gratings, screens, buckets and the like shall be removed before testing. The test will be deemed to have been passed if not more than 500 cm³ for each cycle of the test medium pass through the automatic closure device.

Table 1 — Procedure for long-term test

Test cycles	Step number	Step	Duration s
Test cycle A to be performed 30 times in succession	1	Introduce flow 5 times - 0,25 l/s for \leq DN 50 - 0,40 l/s for $>$ DN 50 and $<$ DN 100 - 0,80 l/s for \geq DN 100	10 for each time
	2	Empty the sample and the adjacent pipeline	—
	3	Fill the pressure vessel to the invert level of discharge type	\geq 10
	4	Build-up the backflow pressure of 1 kPa	\geq 60
	5	Maintain the backflow pressure of 1 kPa	600
	6	Measure the leakage from steps 4 and 5 together	—
	7	Release backflow pressure	—
	8	Same as item No 2	—
Test cycle B to be performed 5 times in succession	9 to 12	Same as No 1 to 4	—
	13	Close the gate valve	—
	14	Build up the backflow pressure of 50 kPa by means of external pressure feeding via pressure tapping	150
	15	Maintain the backflow pressure of 50 kPa	300
	16	Measure the leakage from steps 14 and 15	—
	17 and 18	Same as No 7 and No 8	—

3.4.2.5 Test procedure for the emergency closure device

For this test, the automatic closure device shall be either removed or held in the open position. The emergency closure device shall be in the closed position.

The emergency closure device shall be subjected to a pressure of 50 kPa three times.

The test shall be deemed to have been passed, if during a period of 30 min not more than 1 000 cm³ of the test medium passes the closure device.

3.4.2.6 Evaluation of results

The test shall be deemed to have been passed if all three samples meet the requirement of clause 6.1 of EN 13564-1:2002. Otherwise, the test shall be repeated on six further samples and all shall fulfil the requirement.

3.4.3 Textile test for anti-flooding devices of type 3

3.4.3.1 Sample

One sample shall be tested after having passed the tests in accordance with 3.2 and 3.4.2.