
Odtoki v stavbah - 8. del: Talni odtoki s kombinirano mehansko smradno zaporo in zaporo vode

Gullies for buildings - Part 8: Trapped floor gullies with combined mechanical closure and water seal

Abläufe für Gebäude - Teil 8: Bodenabläufe mit Geruchverschluss mit mechanischem Geruchverschluss und Wassergeruchverschluss

Avaloirs et siphons pour bâtiments - Partie 8 : Siphons de sol combinant un système d'obturation mécanique et une garde d'eau

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Gullies for buildings - Part 8: Trapped floor gullies with
combined mechanical closure and water seal

Avaloirs et siphons pour bâtiments - Partie 8 : Siphons
de sol combinant un obturateur mécanique et une
garde d'eau

Abläufe für Gebäude - Teil 8: Bodenabläufe mit
Geruchverschluss mit mechanischem Geruchverschluss
und Wassergeruchverschluss

This European Standard was approved by CEN on 26 September 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 1253-8:2022) has been prepared by Technical Committee CEN/TC 165 “Waste water 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of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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

Within its program of work, Technical Committee CEN/TC 165 requested CEN/TC 165/WG 11 “Gratings, covers and other ancillary components for use inside buildings” to prepare the following standard:

EN 1253-8, *Trapped floor gullies with combined mechanical closure and water seal.*

The EN 1253 series under the main title Gullies for buildings will actually consist of the following parts:

- *Part 1: Trapped floor gullies with a depth water seal of at least 50 mm;*
- *Part 2: Roof drains and floor gullies without trap;*
- *Part 3: Evaluation of conformity;*
- *Part 4: Access covers;*
- *Part 5: Gullies with light liquids closure;*
- *Part 6: Trapped floor gullies with a depth of water seal less than 50 mm;*
- *Part 7: Trapped floor gullies with mechanical closure;*
- *Part 8: Trapped floor gullies with combined mechanical closure and water seal.*

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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EN 1253-8:2022 (E)

1 Scope

This document classifies floor gullies for domestic wastewater for use inside buildings, gives guidance, gives guidance for places of installation and specifies requirements for the construction, design, performance and marking of factory made gullies for buildings, irrespective of the material, for use in drainage systems requiring a trap with combined mechanical closure and water seal (referred to as floor gullies).

NOTE Floor gullies with combined mechanical closure and water seal are not covered by EN 1253-1, EN 1253-6, EN 1253-7.

These products are intended to be installed where both condition below are fulfilled:

- the building does not exceed a ground-floor and three floors above;
- infrequent use could result in a water seal evaporating.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 476, *General requirements for components used in drains and sewers*

EN 1253-3, *Gullies for buildings — Part 3: Evaluation of conformity*

EN 16323, *Glossary of wastewater engineering terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16323 and the following apply.

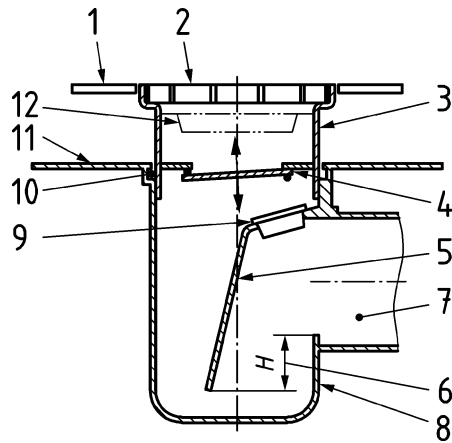
3.1

trapped floor gully

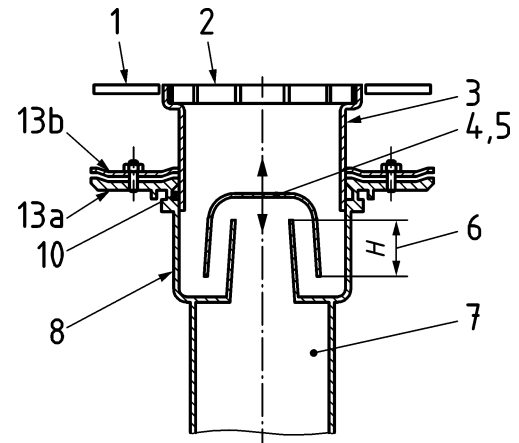
discharge fitting the top of which is a grating or cover capable of installation at ground or floor level, intended to receive wastewater either through apertures in the grating and/or channels joined to the body of the gully and to drain that wastewater through the outlet

Note 1 to entry: Four generic types of floor gullies are shown in Figure 1.

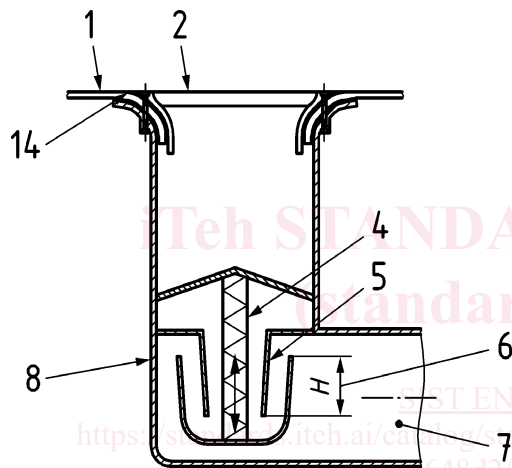
Note 2 to entry: In this document, the term “trapped floor gully” includes linear products, such as channel drains.



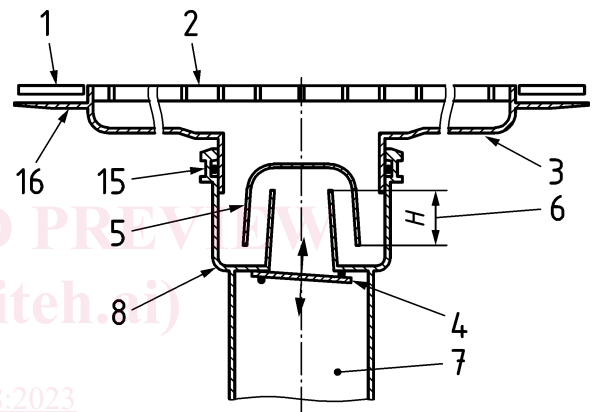
a) Floor gully with flange for bonding waterproofing membranes (example)



b) Floor gully with flange for clamping membranes (fixed and loose flange) (example)



c) Floor gully with flange for clamping flexible flooring (e.g. PVC flooring) (example)



d) Channel drain with flange for bonding liquid applied membranes (example)

Key

1	finished floor	10	weep hole
2	grating/cover	11	flange for bonding membranes
3	extension	12	sediment bucket
4	mechanical closure	13	connecting flange with counter flange
5	trap with water seal	a	fixed flange
6	depth of water seal (H)	b	loose flange
7	outlet	14	flange for clamping flexible flooring with a clamping ring
8	body	15	seal
9	access for cleaning	16	flange for bonding liquid applied membrane

Figure 1 — Examples of four generic types of floor gullies according to this standard

3.2

grating

removable component with apertures which permits the discharge of water

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**3.3
frame**

support for a grating or cover which is connected to a body either directly or by means of a membrane clamping ring or an extension

**3.4
cover**

removable part of an access cover which covers the opening

**3.5
body**

part of a floor gully below or in the floor on which the grating/frame/extension is mounted, and to which the pipework is connected

**3.6
extension**

component used to adjust the height of a grating or cover above a body

**3.7
joint**

connection between the adjacent ends of two components including the means of sealing

**3.8
membrane clamping ring**

component used to clamp a membrane or a sheet floor covering to a body or extension

**3.9
connecting flange**

separate or an integral part of a body or of an extension which receives a membrane or sheet floor covering

**3.10
external diameter**

OD
mean external diameter of the pipe at any cross section

**3.11
internal diameter**

ID
mean internal diameter of the pipe at any cross section

**3.12
trap with combined mechanical closure and water seal**

removable or integral part of the body which prevents the passage of foul air from the outlet to the inlet by means of mechanical closure and water seal system

**3.13
depth of water seal**

effective height of water in the trap (H) which prevents the passage of foul air

Note 1 to entry: See Figure 1.

3.14**domestic wastewater**

water polluted by the human life, including water discharged from kitchens, laundry rooms, lavatories, bathrooms, toilets and similar facilities

[SOURCE: EN 16323:2014, 2.1.2.3]

3.15**sheet floor covering**

flexible watertight finished layer for floors affixed to the flange by bonding, welding and/or by means of a clamping ring

3.16**membrane**

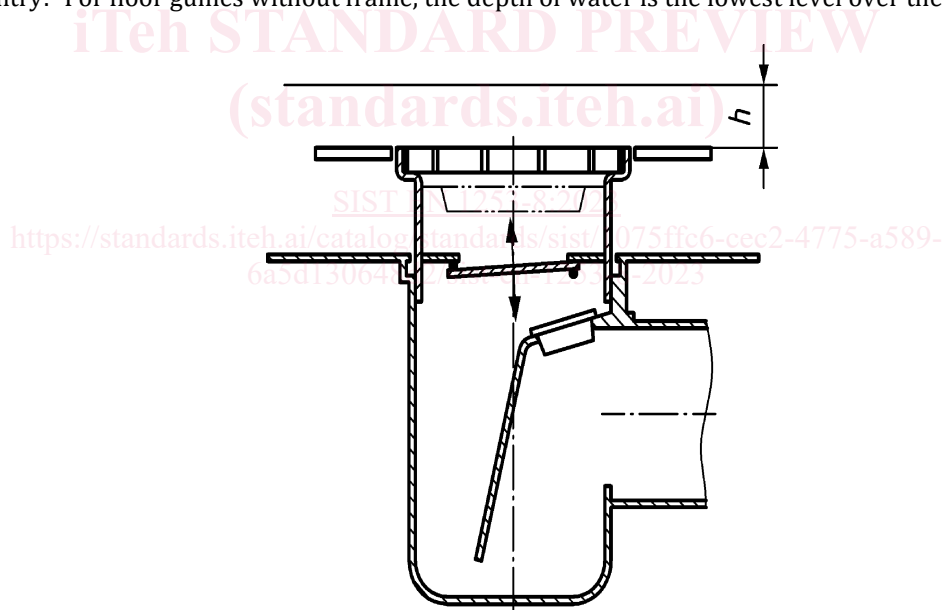
watertight and damp-proof layer attached to the floor gully either in the floor or on the floor

3.17**head of water**

depth h of water over the frame of the floor gully

Note 1 to entry: See Figure 2.

Note 2 to entry: For floor gullies without frame, the depth of water is the lowest level over the finished floor.

**Key**

h head of water

Figure 2 — Head of water for floor gullies

3.18**outlet**

male or female connection to the discharge pipe

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3.19**nominal size****DN**

numerical indication of size which is a convenient integer approximately equal to the internal diameter (DN/ID) or the external diameter (DN/OD) in millimetres

3.20**clear opening****CO**

diameter of the largest circle that can be inscribed within the unsupported area of the grating

3.21**test load**

specified load which a component is required to withstand

3.22**liquid applied waterproofing kit**

particular combination of a defined set of components to be installed in liquid form for waterproofing

Note 1 to entry: The liquid applied waterproofing kit is usually a paste-like composite material or a combination of separate materials that can be poured, spread or sprayed on the subsurface by brush, roller or similar suitable applicator.

4 Design and construction**4.1 General**

Floor gullies shall be capable of being connected to the pipework system covered by relevant European Standards, and, when installed in accordance with the manufacturer's instructions, shall form an integral part of the building. There shall be no movement possible between the body and the floor, which would impair the functioning of the installed gully.

The upper surfaces of frame and grating shall be flush. When in position, it shall not be possible for gratings and covers to be dislodged from the frame, but they shall be easy to be released e.g. for maintenance and cleaning.

Traps shall be prevented, by design features such as fixings or weights, from floating or displacement. The functional part of a mechanical closure must be removable and allow access to clean the outlet pipe.

Floor gullies and their components shall be resistant to all mechanical and thermal requirements of application.

Floor gullies shall be designed without side inlet.

Note Products with side inlet are described in EN 1253-1.

Floor gullies shall be delivered with installation instructions.

All pipe joints to and from the floor gully shall be designed to be watertight in accordance with EN 476.

4.2 Appearance

Internal and external surfaces shall be free from sharp edges and imperfections which could impair functioning of the floor gully or give risk of injury.

4.3 Apertures in gratings

Apertures can be of any shape and may also be formed between grating and frame.

The dimensions of apertures in grating shall be as specified in Table 1.

Table 1 — Apertures in gratings

Class	Dimensions of apertures in gratings	
	Minimum width mm	Maximum width mm
H 1,5	4 ^a	15 (max. 8 mm in barefoot areas)
K 3	4 ^a	10 (max. 8 mm in barefoot areas)
L 15	4	15 ^b (max. 8 mm in barefoot areas)
^a Apertures of less than 4 mm width are permitted but are not included in the hydraulic tests.		
^b In commercially used premises, gratings may also be used with a maximum width of apertures up to 31 mm.		

4.4 Resistance of trap with mechanical closure and water seal to pressure

4.4.1 Requirements

A gully with mechanical closure shall withstand a positive pressure of 400^{+40}_0 Pa for 15 minutes. When tested in accordance with 4.4.2. The applied pressure shall not drop beyond 90 % of the starting pressure within 15 minutes.

4.4.2 Test method

Mount the floor gully in a test arrangement as illustrated in Figure 3, and run water through the gully until the trap is filled.

Close the flap and set a pressure of -400^{+0}_{-10} Pa by means of the bypass valves. Open the flap and fill the trap with water.

Close the flap and slowly open after about $5 \pm 0,5$ s. Repeat this procedure until the trap no longer loses water, but no more than 5 times, before proceeding.

Air coming in at negative pressure is not a condition of failure.

Remove $8^{+0,2}_{0,0}$ mm of water height; this corresponds to the reduction in the depth of water seal due to evaporation over a period of disuse. If the mechanical closure is intended to prevent the evaporation of water, only $4^{+0,2}_{0,0}$ mm of water need to be removed.

Apply to the outlet side a positive pressure such that flow of air just occurs. Record the pressure.

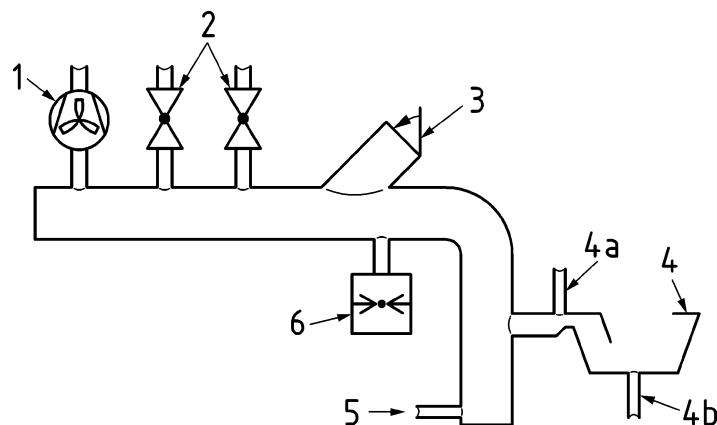
Apply to the outlet side to a positive pressure 400^{+40}_0 Pa constant over a period of at least 15 min.

The applied pressure shall not drop beyond 90 % of the starting pressure within 15 minutes.

Interrupt the test if the pressure cannot be reached or has not stabilized within 2 min (test failed).

Verify that the mechanical closure system remains in place.

Note With the flap closed, set the desired negative pressure with the bypass valves, and read the manometer. The sensors in the floor gully are connected to the recording device. When the flap is closed rapidly, the desired vacuum pressure is established immediately. By reversing the fan and securing the flap in the closed position, the arrangement can be used also for the measurement of the resistance to positive pressure.

**Key**

- 1 fan
- 2 bypass valves
- 3 flap
- 4 gully to be tested
- 4a connection to pressure recorder
- 4b optional connection to water level recorder
- 5 drain cock
- 6 pressure measuring device (manometer)

Figure 3 — Typical test arrangement for determining the resistance of the combined mechanical closure and water seal to pressure

4.5 Blockage prevention

4.5.1 Access for cleaning

4.5.1.1 General

Floor gullies shall have provision for mechanical cleaning of the outlet pipe systems leading from the gully.

Any opening provided for mechanical cleaning shall be tested in accordance with 4.5.1.3.

4.5.1.2 Requirements

When an opening with an airtight and watertight cover or plug is provided, the clear diameter of such opening shall be as specified in Table 2.

Table 2 — Access for cleaning

Outlet of gully	Access for cleaning	
	Clear opening C	Area A
Diameter of outlet mm	mm	mm
$DN \leq 80$	$C > 20$	$A > 800$
$80 < DN \leq 110$	$C > 32$	$A > 800$
$110 < DN \leq 200$	$C > 50$	$A > 1\,900$