SLOVENSKI STANDARD
SIST EN 124-1:2015

01-september-2015

Nadomešča:
SIST EN 124:1996

Pokrovi za odtoke in jaške na voznih površinah in površinah za pešce - 1. del: Definicije, klasifikacija, splošna načela zasnove, zahtevane lastnosti in preskusne metode

Gully tops and manhole tops for vehicular and pedestrian areas - Part 1: Definitions, classification, general principles of design, performance requirements and test methods

Aufsätze und Abdeckungen für Verkehrsflächen - Teil 1: Definitionen, Klassifizierung, allgemeine Baugrundsätze, Leistungsanforderungen und Prüfverfahren

Dispositifs de couronnement et de fermeture pour les zones de circulation utilisées par les piétons et les véhicules - Partie 1 : Définitions, classification, principes généraux de conception, exigences de performances et méthodes d'essai

Ta slovenski standard je istoveten z: **EN 124-1:2015**

ICS:

93.080.30	Cestna oprema in pomožne naprave	Road equipment and installations

SIST EN 124-1:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 124-1

June 2015

ICS 93.080.30

Supersedes EN 124:1994

English Version

Gully tops and manhole tops for vehicular and pedestrian areas - Part 1: Definitions, classification, general principles of design, performance requirements and test methods

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This European Standard was approved by CEN on 12 March 2015.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 124-1:2015) 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of an identical text or by endorsement, at the latest by December 2015 and conflicting national standards shall be withdrawn at the latest by March 2017.

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.

Together with EN 124-2:2015, EN 124-3:2015, EN 124-4:2015, EN 124-5:2015 and EN 124-6:2015, this document supersedes EN 124:1994.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 124, *Gully tops and manhole tops for vehicular and pedestrian areas*, consists of the following parts:

— *Part 1: Definitions, classification, general principles of design, performance requirements and test methods*;

— *Part 2: Gully tops and manhole tops made of cast iron*;

— *Part 3: Gully tops and manhole tops made of steel or aluminium alloys*;

— *Part 4: Gully tops and manhole tops made of steel reinforced concrete*;

— *Part 5: Gully tops and manhole tops made of composite materials*;

— *Part 6: Gully tops and manhole tops made of polypropylene (PP), polyethylene (PE) or unplasticized poly(vinyl chloride) (PVC-U)*.

EN 124-1 is not a harmonized standard but a supporting standard for the harmonized standards EN 124-2, EN 124-3, EN 124-4, EN 124-5 and EN 124-6.

The main changes with respect to the previous edition are listed below:

a) the standard was split into 6 parts, where Part 1 contains general design and performance requirements and Parts 2 to 6 performance requirements for manhole tops and gully tops made of specific materials;

b) definition for “securing feature” added;

c) definition for “locking accessory” added;

d) skid resistance test added;

e) tilt test added;

f) test of securing of covers/gratings within the frame added;

g) evaluation of conformity changed to AVCP;

h) recommendations for installation added.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard is applicable to manhole tops and gully tops with a clear opening up to and including 1 000 mm for covering gullies, manholes and inspection chambers installed in areas subjected to pedestrian and/or vehicular traffic. It specifies definitions, classification, general principles of design, performance requirements and test methods for gully tops and manhole tops according to:

— EN 124-2, for gully tops and manhole tops made of cast iron;

— EN 124-3, for gully tops and manhole tops made of steel or aluminium alloys;

— EN 124-4, for gully tops and manhole tops made of steel reinforced concrete;

— EN 124-5, for gully tops and manhole tops made of composite materials;

— EN 124-6, for gully tops and manhole tops made of polypropylene (PP), polyethylene (PE) or unplasticized poly(vinyl chloride) (PVC-U).

Part 1 is only applicable in combination with at least one of the standards EN 124-2, EN 124-3, EN 124-4, EN 124-5 and EN 124-6 each of which has this Part 1 as an integral part.

This European Standard is not applicable to:

— gratings/covers as part of prefabricated drainage channels according to EN 1433,

— floor and roof gullies in buildings which are specified in EN 1253 (all parts),

— surface boxes.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 124-2:2015, *Gully tops and manhole tops for vehicular and pedestrian areas — Part 2: Gully tops and manhole tops made of cast iron*

EN 124-3:2015, *Gully tops and manhole tops for vehicular and pedestrian areas — Part 3: Gully tops and manhole tops made of steel or aluminium alloys*

EN 124-4:2015, *Gully tops and manhole tops for vehicular and pedestrian areas — Part 4: Gully tops and manhole tops made of steel reinforced concrete*

EN 124-5:2015, *Gully tops and manhole tops for vehicular and pedestrian areas — Part 5: Gully tops and manhole tops made of composite materials*

EN 124-6:2015, *Gully tops and manhole tops for vehicular and pedestrian areas — Part 6: Gully tops and manhole tops made of polypropylene (PP), polyethylene (PE) or unplasticized poly(vinyl chloride) (PVC-U)*

EN 206:2013, *Concrete — Specification, performance, production and conformity*

EN 13036-4, *Road and airfield surface characteristics — Test methods — Part 4: Method for measurement of slip/skid resistance of a surface: The pendulum test*

EN ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness) (ISO 868)*

EN ISO 7500-1:2004, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

3 Terms and definitions, symbols, units and abbreviated terms

For the purposes of this document, the following terms and definitions apply.

3.1 Terms and definitions

3.1.1
manhole
structure with a removable cover constructed on a drain or sewer to permit entry by personnel

[SOURCE: EN 16323:2014, 2.2.4.15]

3.1.2
inspection chamber
structure with a removable cover constructed on a drain or sewer that permits the introduction of cleaning and inspection equipment from surface level, but does not provide access for personnel

[SOURCE: EN 16323:2014, 2.2.4.13]

3.1.3
gully
assembly to receive water for discharge into a drainage system

3.1.4
gully top
upper part of a gully consisting of a frame and grating with or without cover

3.1.5
manhole top
upper part of a manhole or inspection chamber consisting of a frame and cover and/or grating

3.1.6
frame
part of a gully top or manhole top which receives and supports a grating and/or a cover

3.1.7
frame depth
distance between the top surface and the bottom surface of the frame

3.1.8
grating
movable part(s) or opening within a manhole top or a gully top which permit(s) the passage of water through itself into the gully or manhole

3.1.9
cover
movable part(s) of a manhole top or a gully top which covers the manhole or gully opening

3.1.10
element
frame or cover or grating of a manhole top or gully top

Note 1 to entry: Hinges, locking accessories and other accessories are not elements.

3.1.11
vent
opening in the cover of a manhole top to provide ventilation

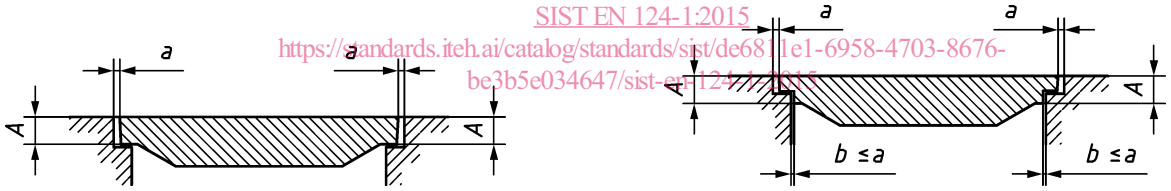
3.1.12
dirt bucket
removable component of a gully top which collects debris

3.1.13
dirt pan
removable component of manhole top which collects debris

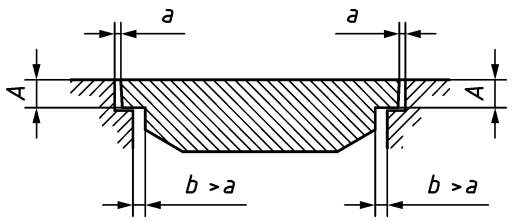
3.1.14
seating
surface on which the grating or the cover rests in the frame

3.1.15
depth of insertion
A
distance between the top of the frame and the bottom of the cover or grating adjacent to the seating

Note 1 to entry: Examples are given in Figure 1. The depth of insertion is expressed in millimetres (mm).



a) Example 1: *A* for non-stepped covers/gratings b) Example 2: *A* for stepped covers/gratings when b ≤ a



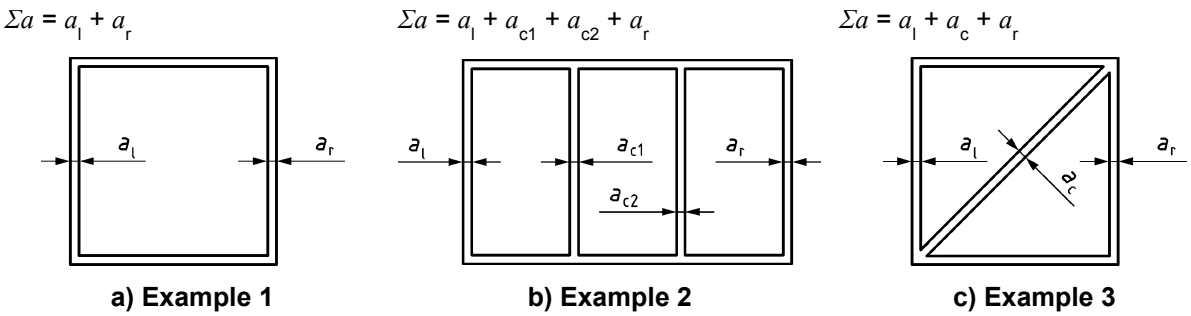
c) Example 3: *A* for stepped covers/gratings when b > a

Figure 1 — Examples for determination of depth of insertion

3.1.16
total clearance
Σa
sum of the maximum individual clearances between adjacent elements of the frame and grating/cover

Note 1 to entry: Examples are shown in Figure 2 a), Figure 2 b) and Figure 2 c).

Note 2 to entry: The total clearance is expressed in millimetres (mm).



a) Example 1 **b) Example 2** **c) Example 3**

Key

a_l clearance left a_c clearance centre a_r clearance right

Figure 2 — Examples for the determination of total clearance

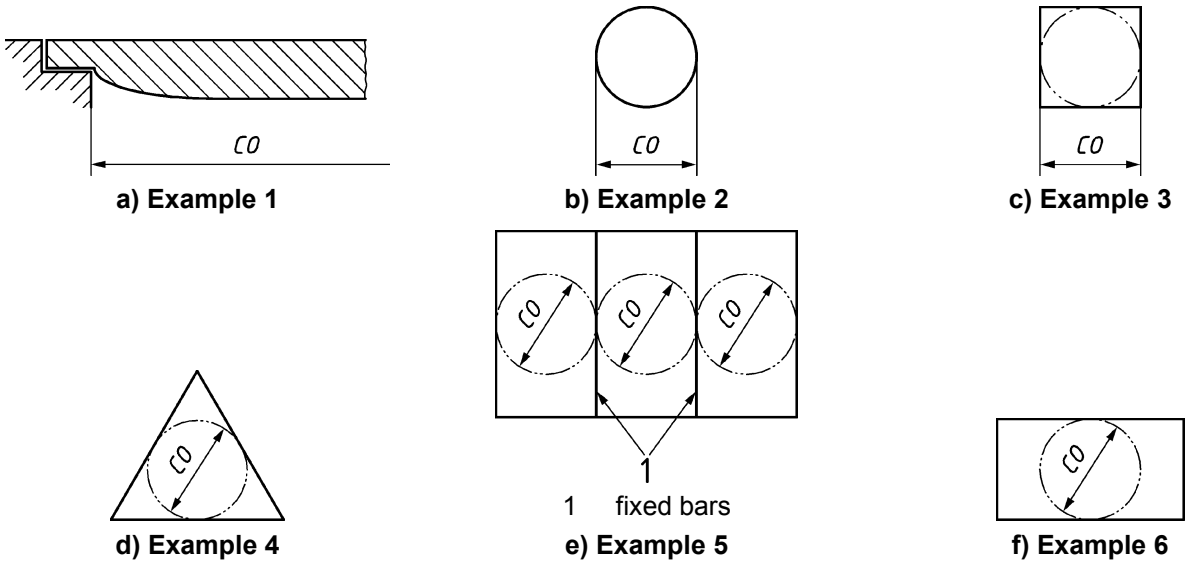
3.1.17
frame bearing area
A_b
surface of the underside of a frame which rests upon the supporting structure

Note 1 to entry: The bearing area is expressed in square millimetres (mm^2).

3.1.18
clear opening
CO
diameter of the largest circle that can be inscribed in the clear area (3.1.19) of the frame

Note 1 to entry: Examples are shown in Figures 3 a) to 3 f).

Note 2 to entry: The clear opening is expressed in millimetres (mm).



a) Example 1 **b) Example 2** **c) Example 3**

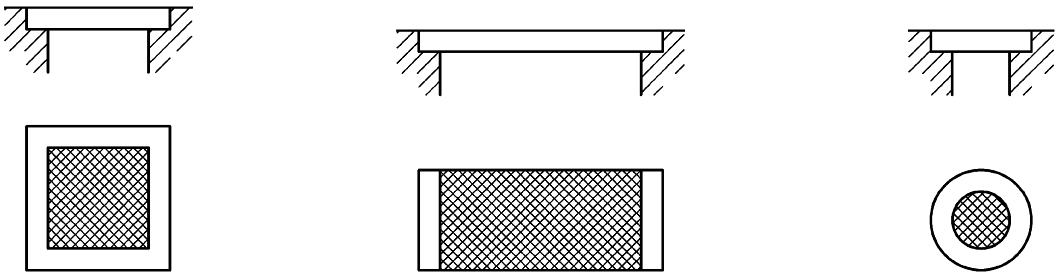
d) Example 4 **e) Example 5** **f) Example 6**

Figure 3 — Examples of clear opening

3.1.19
clear area
CA
unobstructed area between the seatings in the frame

Note 1 to entry: Examples for unobstructed areas are shown as the shaded area in Figure 4 a) to Figure 4 c). In the case that the area of seatings in the frame is interrupted by functional areas, for example, areas for drainage of water, areas for holding dirt pans or means for access to manholes and spaces for hinges, locking and securing systems, these functional areas are not considered for the calculation of mass per unit area. If there are more possibilities the larger of the possible clear areas need to be used.

Note 2 to entry: The clear area is expressed in square millimetres (mm^2).



a) Example 1 b) Example 2 c) Example 3

Figure 4 — Examples of clear area

3.1.20
waterway area
overall effective drainage inlet area on the top surface of gully tops and in kerb units

Note1 to entry: The waterway area is expressed in square millimetres (mm^2).

3.1.21
securing feature
feature which is integral with frame or cover(s)/gratings(s) or installed as part of the manufacturing process to safely retain cover(s)/gratings(s) in the frame under traffic conditions in the place of installation and to prevent inappropriate movement of the cover(s)/gratings(s) such as ejection and non-intended lifting

EXAMPLE Screws, bolts, spring bars, etc.

3.1.22
mass per unit area
total mass of the cover or the grating in kilograms divided by the clear area in square metres

Note 1 to entry: The mass per unit area is expressed in kg/m^2.

3.1.23
cushioning insert
accessory provided within a frame, grating or cover to achieve stability and quietness in use

3.1.24
test load
F_T
load applied to gully tops or manhole tops for testing the load bearing capacity

Note 1 to entry: The test load is expressed in kilonewtons (kN).

3.1.25
permanent set load
F_P
load applied to gully tops or manhole tops for testing the permanent set (F_P = 2/3 F_T)

3.1.26
deflection load
F_D
load applied to gully tops or manhole tops for testing the deflection under load (F_D = 1/3 F_T)

3.1.27
pedestrian area
area reserved for pedestrians and only occasionally open to vehicular traffic for delivery, cleaning purposes or in an emergency

3.1.28
pedestrian street
area where vehicular traffic is prohibited during certain periods (e.g. pedestrian areas during business hours and vehicular traffic outside these hours)

3.1.29
locking accessory
added component to prevent unauthorised lifting, opening or removal of cover/grating

3.2 Symbols and abbreviated terms

P_b	Frame bearing pressure
USRV	unpolished skid resistance value

4 Classification

4.1 Basis of the classification

Based on the test loads according to Table 4, gully tops or manhole tops shall be classified into one of the following classes:

A 15, B 125, C 250, D 400, E 600 or F 900.

4.2 Classification in the context of intended use

This clause provides the link of the classification and the place of installation. For different classes of manhole tops or gully tops provisions in the place of installation shall be taken into account.

The appropriate class of a manhole top or a gully top to be used depends upon the place of installation. The various places of installation have been divided into groups numbered 1 to 6, as listed below. Figure 5 and Figure 6 show the location of some of these groups in a highway environment. The minimum class recommended for use in each group is shown in brackets. The selection of the appropriate class and the material is the responsibility of the specifier. Where there is any doubt, the stronger class should be selected.

— **Group 1 (at least class A 15):** Areas which can only be used by pedestrians and pedal cyclists.

— **Group 2 (at least class B 125):** Pedestrian areas and comparable areas, car parks or car parking decks.

— **Group 3 (at least class C 250):** For gully tops, installed in the area of kerbside channels of roads (Figure 5) which, when measured from the kerb edge, extends a maximum of 0,5 m into the carriageway and a maximum of 0,2 m into the pedestrian area.