



BSI Standards Publication

Gully tops and manhole tops for vehicular and pedestrian areas

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

National foreword

This British Standard is the UK implementation of EN 124-1:2015. Together with BS EN 124-2:2015, BS EN 124-3:2015, BS EN 124-4:2015, BS EN 124-5:2015 and BS EN 124-6:2015, it supersedes BS EN 124:1994 which is withdrawn.

BSI, as a member of CEN, is obliged to publish EN 124-1 as a British Standard. However, attention is drawn to the fact that during the development of this European Standard, the UK committee voted against its approval as a European Standard.

The technical reasoning behind the response relates to three specific areas:

1. Subclause 7.4.2 specifies three alternative sets of requirements to provide adequate skid resistance. The UK committee expresses concern that there is no research available to validate the equivalence or adequacy of these requirements.
2. The pull-out tests as described in Annex E are not representative of in-service conditions and are not supported by any evidence of safe behaviour in service, taking no account of the forces that may generate cover movement and/or displacement. Consequently the requirements of subclause 6.6 and the test method in Annex E may not guarantee or provide guidance to users and specifiers for the durability and safe behaviour of manhole tops and gully tops in service.
3. The load tests described in subclause A.4.2 do not take into account the load bearing capacity of individual or multiple cover elements at test locations other than the prescribed centralized test locations and the subsequent effects on performance and durability of the installation. Readers of this standard may find it useful to refer to BS 7903, *Guide to selection and use of gully tops and manhole covers for installation within the highway*.

Users may wish to consider these issues when specifying products.

The UK participation in its preparation was entrusted by Technical Committee B/505, Wastewater engineering, to Subcommittee B/505/4, "Manhole Covers, Surface Boxes And Other Road Fittings".

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2015.
Published by BSI Standards Limited 2015

ISBN 978 0 580 79318 9

ICS 93.080.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 July 2015.

Amendments/corrigenda issued since publication

Date	Text affected
------	---------------

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

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

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

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

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

CEN members are the national standards bodies of 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 United Kingdom.



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

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

Contents

Page

Foreword.....	4
1 Scope	6
2 Normative references	6
3 Terms and definitions, symbols, units and abbreviated terms	7
3.1 Terms and definitions	7
3.2 Symbols and abbreviated terms	11
4 Classification.....	11
4.1 Basis of the classification.....	11
4.2 Classification in the context of intended use	11
5 Materials	13
5.1 General.....	13
5.2 Cover fillings	13
5.3 Frames in combination with concrete	13
6 Design requirements	13
6.1 Vents in covers	13
6.2 Clear opening of manhole tops for man entry	14
6.3 Depth of insertion	14
6.4 Clearance.....	14
6.5 Compatibility of seatings	15
6.6 Securing of the cover/grating within the frame	15
6.7 Handling of covers and gratings.....	16
6.8 Slot dimensions of gratings	16
6.9 Dirt pans and dirt buckets	17
6.10 Positioning of covers and gratings.....	18
6.11 Flatness of manhole covers and gratings.....	18
6.12 Concaveness of gratings	18
6.13 Surface conditions.....	18
6.14 Manhole tops with sealing features	18
6.15 Frame bearing area.....	18
6.16 Frame depth	18
6.17 Opening angle of hinged covers/gratings.....	19
6.18 Covers with fillings	19
7 Performance requirements	19
7.1 Appearance	19
7.2 Load bearing capacity	19
7.3 Permanent set	19
7.4 Skid resistance.....	20
7.5 Child safety.....	21
8 Testing	22
8.1 General.....	22
8.2 Permanent set (see 7.3).....	22
8.3 Load bearing capacity (see 7.2)	22
8.4 Verification of design requirements	22
8.5 Child safety.....	24
9 Assessment and verification of constancy of performance (AVCP).....	24

Annex A (normative) Permanent set test	25
A.1 Test Samples	25
A.2 Permanent set test load, (F_P)	25
A.3 Apparatus	25
A.4 Procedure	26
Annex B (normative) Test of load bearing capacity	29
B.1 Test samples	29
B.2 Test load (F_T)	29
B.3 Test procedure	29
B.4 Test report	29
Annex C (normative) Test to determine the unpolished skid resistance value (USRV) of manhole covers	30
C.1 General	30
C.2 Apparatus	30
C.3 Calibration of pendulum friction test equipment	30
C.4 Selection of test samples	30
C.5 Test procedure	30
Annex D (normative) Tilt test	33
D.1 General	33
D.2 Test procedure	33
Annex E (normative) Testing of securing of covers/gratings within the frame	36
E.1 General	36
E.2 Vertical pull-out test procedure	37
Annex F (informative) Recommendations for installation	41
F.1 General	41
F.2 Place of installation and selection of appropriate manhole tops and gully tops	41
F.3 Preparations before installation	41
F.4 Operative skill, training and installation equipment	41
F.5 Bedding and packing materials	42
F.6 Condition of supporting chamber	42
F.7 Fixing of manhole tops or gully tops	42
F.8 Post installation check and cleaning	42
Annex G (informative) Explanations on testing of manhole tops with multiple covers and testing the skid resistance	44
G.1 Explanation to A.4	44
G.2 Explanation to 7.4.2	44
Bibliography	45