

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

BS EN 1610:2015



BSI Standards Publication

Construction and testing of drains and sewers

bsi.

...making excellence a habit.™

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

This British Standard is the UK implementation of EN 1610:2015. It supersedes BS EN 1610:1998 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/505, Wastewater engineering.

A list of organizations represented on this committee 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 91486 7

ICS 91.140.80; 93.030

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 30 September 2015.

Amendments issued since publication

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

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

EUROPÄISCHE NORM

September 2015

ICS 93.030

Supersedes EN 1610:1997

English Version

Construction and testing of drains and sewers

Mise en oeuvre et essai des branchements et
canalisations d'assainissement

Einbau und Prüfung von Abwasserleitungen und -
kanälen

This European Standard was approved by CEN on 24 July 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

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

Contents	Page
European foreword.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions	6
4 General.....	8
4.1 Technical principles.....	8
4.2 Safeguarding design decisions	9
4.3 Short sections of trench	9
5 Construction components and materials	10
5.1 General.....	10
5.2 Materials used for embedment.....	10
5.2.1 General.....	10
5.2.2 Native soil.....	10
5.2.3 Imported materials	10
5.3 Materials used for main backfill	12
6 Construction of trench.....	12
6.1 General.....	12
6.1.1 Introduction	12
6.1.2 Working space and soil compaction.....	12
6.1.3 Transmission of load between trench support system and soil	12
6.1.4 Installing and removing the trench support system	13
6.2 Trenches.....	13
6.3 Trench width.....	13
6.3.1 Maximum trench width.....	13
6.3.2 Minimum trench width	13
6.3.3 Determination of trench width	15
6.4 Trench stability.....	15
6.5 Trench bottom.....	15
6.6 Dewatering	16
7 General principles of embedment and support.....	16
7.1 General.....	16
7.2 Bedding construction types.....	17
7.2.1 Bedding construction type 1	17
7.2.2 Bedding construction type 2	17
7.2.3 Bedding construction type 3	17
7.3 Special methods of bedding or support	18
8 Installation	18
8.1 General.....	18
8.2 Setting out.....	18
8.3 Delivery, handling and transportation on site	18
8.4 Storage	18
8.5 Lifting of components	19
8.6 Laying	19
8.6.1 General.....	19

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

8.6.2	Line and level	19
8.6.3	Jointing	19
8.6.4	Socket holes	19
8.6.5	Pipe cutting	20
8.6.6	Provisions for future connections	20
8.6.7	Other instructions	20
8.7	Special forms of constructions.....	20
8.7.1	Pipelines above ground.....	20
8.7.2	Pipelines within protective pipes.....	20
8.7.3	Brick and in situ concrete sewers.....	20
8.7.4	Pipelines through, under or close to structures.....	20
8.8	Supporting and anchoring.....	20
8.9	Manholes and inspection chambers	21
9	Connection to pipes and manholes	21
9.1	General	21
9.2	Connection by junctions.....	21
9.3	Connection by connecting fittings	21
9.4	Connection by saddle fittings	22
9.5	Connection by welding.....	22
9.6	Connection to manholes and inspection chambers.....	22
10	Testing during construction	22
11	Backfilling.....	22
11.1	General	22
11.2	Compaction	22
11.3	Embedment and initial backfill	23
11.4	Main backfill.....	23
11.5	Removal of trench support system.....	23
11.6	Surface reinstatement.....	24
12	Final inspection and/or testing of pipelines and manholes after backfilling.....	24
12.1	General	24
12.2	Visual inspection.....	24
12.3	Leaktightness	24
12.4	Embedment and main backfill	24
12.4.1	General	24
12.4.2	Compaction	24
12.4.3	Pipe deformation	24
13	Procedures and requirements for testing gravity pipelines.....	25
13.1	General	25
13.2	Testing with air (method "L")	25
13.3	Testing with water (method "W").....	28
13.3.1	Test pressure.....	28
13.3.2	Conditioning time	29
13.3.3	Test requirements.....	29
13.3.4	Testing time	29
13.4	Testing individual joints	30
14	Testing of pressure pipelines.....	30
15	Qualifications	30
Annex A (informative)	Dewatering	31
A.1	General	31

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

A.2	Sump pumping from trench bottom.....	31
A.3	Deep wells.....	31
A.4	Vertical well points.....	32
A.5	Horizontal pipe dewatering	32
A.6	Eductor well pointing	32
Annex B (informative) Abstract from DIRECTIVE 2014/25/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (Text with EEA relevance)		33
Annex C (informative) Manufacturer's Instructions		34
Annex D (informative) Additional national public documents		35
D.1	France.....	35
D.2	Germany	35
D.3	The Netherlands	35
D.4	Austria.....	35
D.5	Switzerland:	36
D.6	Sweden.....	36
D.7	UK.....	36
Bibliography.....		38

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN 1610:2015) 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 March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

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.

This document supersedes EN 1610:1997.

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

- updating of references and their associated requirements;
- addition of requirements for the soil-pipe-system.

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.

This is a preview of "BS EN 1610:2015". [Click here to purchase the full version from the ANSI store.](#)

1 Scope

This European Standard is applicable to the construction and related testing of drains and sewers usually buried in the ground and usually operating under gravity but up to 0,5 kPa when surcharged.

The construction of pipelines operating under pressure is covered by this European Standard together with EN 805 as appropriate (e.g. for testing).

This European Standard is applicable to drains and sewers installed in trenches, under embankments or above ground. For trenchless construction EN 12889 applies. Additionally, other local or national regulations may apply, e.g. concerning health and safety, pavement reinstatement and requirements for tightness testing.

NOTE Further information is given by reference to national documents listed in Annex D.

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 476:2011, *General requirements for components used in drains and sewers*

EN 752, *Drain and sewer systems outside buildings*

EN 805, *Water supply – Requirements for systems and components outside buildings*

EN 1295-1, *Structural design of buried pipelines under various conditions of loading – Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. The same definitions apply for trenches with vertical or sloping sides and for pipes laid below embankments. Some of these terms are illustrated in Figure 1.

3.1 bedding

part of the construction which supports the pipe between the trench bottom and the sidefill or initial backfill

Note 1 to entry: The bedding consists of upper and lower bedding. In the case of the pipe laid on natural trench bottom, the trench bottom is the lower bedding.

3.2 compaction layer thickness

thickness of each new layer of fill material prior to its compaction

3.3 depth of cover

vertical distance from the top of the pipe barrel to the surface

3.4 embedment

fill around the pipe including bedding, sidefill and initial backfill