

DIN EN 1610:2015-12 (E)

Construction and testing of drains and sewers

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

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
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