

BS 5911-6:2021



BSI Standards Publication

Concrete pipes and ancillary concrete products

Part 6: Road gullies and gully cover slabs — Specification

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Contents

	Page
Foreword	ii
1 Scope	1
2 Normative references	1
3 Terms, definitions and symbols	2
<i>Table 1 — Symbols</i>	3
4 General requirements	3
4.1 Materials	3
4.2 Concrete	4
4.3 Units	4
<i>Table 2 — Nominal sizes dimensions for gullies</i>	6
<i>Figure 1 — Typical trapped gully with spigot outlet</i>	7
<i>Figure 2 — Typical untrapped gully with spigot outlet</i>	8
<i>Figure 3 — Typical trapped gully with socket outlet</i>	9
<i>Figure 4 — Typical untrapped rectangular gully with socket outlet</i>	10
5 Test requirements for finished products	10
<i>Table 3 — Summary of test requirements</i>	10
6 Conformity evaluation	10
6.1 General	10
6.2 Product evaluation procedures	11
7 Marking	12
Annex A (normative) Dimensional tests	13
Annex B (normative) Watertightness test	14
Annex C (informative) Information to be supplied in an enquiry or order	15
Annex D (normative) Manufacturer's quality assurance system	15
<i>Table D.1 — Control for all materials</i>	18
<i>Table D.2 — Control for certain materials</i>	18
<i>Table D.3 — Equipment control</i>	19
<i>Table D.4 — Control of concrete mix</i>	20
<i>Table D.5 — Control of factory production</i>	20
<i>Table D.6 — Control of marking and storage</i>	20
<i>Table D.7 — Control of delivery</i>	20
<i>Table D.8 — Control of laboratory equipment</i>	20
Annex E (normative) Sampling procedures for inspection of finished products	21
<i>Table E.1 — Sampling procedures</i>	21
Annex F (normative) Sampling procedures for continuous inspection of watertightness	21
Annex G (normative) Tasks for a product certification body	23
Bibliography	25

Summary of pages

This document comprises a front cover, an inside front cover, pages I to IV, pages 1 to 25, an inside back cover and a back cover.

Foreword

Publishing information

This part of BS 5911 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 August 2021. It was prepared by Technical Committee B/505, *Wastewater engineering*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

This part of BS 5911 supersedes BS 5911-6:2004+A1:2010 which is withdrawn.

Relationship with other publications

BS 5911 is a series of standards for concrete drainage products.

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It has been assumed in the preparation of this part of BS 5911 that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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1 Scope

This part of BS 5911 specifies requirements and describes test methods for precast concrete road gullies manufactured from monolithic concrete or prefabricated sections of concrete. A gully outlet might incorporate a permanent former, with or without a jointing profile, for the connection of a pipeline.

Requirements are also specified for gully cover slabs. The intended use for gullies is the interception of silt and debris from surface water being discharged into drainage systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions of this document.¹⁾ For undated references, the latest edition of the referenced document (including any amendments) applies.

[BS 4484-1](#), *Specification for measuring instruments for constructional works — Part 1: Metric graduation and figuring of instruments for linear measurement*

[BS 5204-2](#), *Specification for straightedges — Part 2: Steel or granite straightedges of rectangular section*

BS 8500-1:2015+A2:2019, *Concrete — Complementary British Standard to BS EN 206 — Part 1: Method of specifying and guidance for the specifier*

BS EN 450-1, *Fly ash for concrete — Part 1: Definition, specifications and conformity criteria*

BS EN 934-2, *Admixtures for concrete, mortar and grout — Part 2: Concrete admixtures — Definitions, requirements, conformity, marking and labelling*

[BS EN 13369:2018](#), *Common rules for precast concrete products*

BS EN 1008, *Mixing water for concrete — Specification for sampling, testing and assessing the suitability of water, including water recovered from processes in the concrete industry, as mixing water for concrete*²⁾

BS EN 12620:2002+A1:2008, *Aggregates for concrete*³⁾

BS EN 15167-1, *Ground granulated blast furnace slag for use in concrete, mortar and grout — Part 1: Definitions, specifications and conformity criteria*

BS EN ISO/IEC 17065, *Conformity assessment — Requirements for bodies certifying products, processes and services*

BS EN ISO/IEC 17021-1, *Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 1: Requirements*

BS EN ISO/IEC 17021-2, *Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 2: Competence requirements for auditing and certification of environmental management system*

BS EN ISO/IEC 17021-3, *Conformity assessment — Requirements for bodies providing audit and certification of management systems — Part 3: Competence requirements for auditing and certification of quality management systems*

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

²⁾ A dated reference to BS EN 1008:2002 is made informatively.

³⁾ A dated reference to BS EN 12620:2002+A1:2008 is made informatively.

3 Terms, definitions and symbols

3.1 Terms and definitions

For the purposes of this part of BS 5911, the following terms and definitions apply.

3.1.1 unit

gully (whether trapped or untrapped) or a gully cover slab

NOTE Although unreinforced, the concrete in units conforming to this part of BS 5911 may be strengthened for handling purposes.

3.1.2 type

units of the same manufacturing process and design

3.1.3 gully

device for the interception of silt and debris from surface water being discharged into a drainage system

3.1.4 untrapped gully

hollow cylinder, with base, manufactured from concrete with an outlet to facilitate the connection of a pipeline, which acts as a rodding eye

NOTE It is permissible for the outlet to incorporate a permanent former, with or without a jointing profile, for the connection of pipelines.

3.1.5 trapped gully

gully as described in [3.1.4](#) but with the outlet designed to form a water seal, and provided with a rodding eye

NOTE It is permissible for the outlet to incorporate a permanent former, with or without a jointing profile, for the connection of pipelines.

3.1.6 gully cover slab

frame or surround manufactured from concrete, with or without a drainage slot, to accommodate a road gully grating and frame

3.1.7 nominal size

for a gully, the expression of nominal section and nominal depth separated by solidus (e.g. “450/900” or “300/385/900”); for a gully cover slab, the nominal section of the gully with which it is designed to fit

3.1.8 nominal section

numerical designation of the plan shape of a gully which for circular sections is a convenient integer approximately equal to the internal diameter in millimetres and for rectangular sections is convenient integers approximately equal to the internal length and width in millimetres

3.1.9 nominal depth

numerical designation of the depth of a gully, or gully outlet, which is a convenient integer approximately equal to the internal depth in millimetres

3.1.10 manufacturing dimension

dimension(s) of section, diameter or depth which a manufacturer seeks to achieve

3.1.11 actual dimension

dimension(s) of section, diameter or depth as measured

3.1.12 cementitious content

amount of cement plus any pozzolanic or latent hydraulic addition in the concrete mix

3.1.13 inspection

process of measuring, examining, testing, gauging or otherwise comparing a unit with the applicable requirements

3.1.14 routine inspection

inspection by sampling at prescribed intervals in order to determine the acceptability of the items represented by the samples

3.1.15 continuous inspection

routine inspection according to a sampling plan which indicates the number of units from a specific process evaluated to have attained, and continue to be in, a state of control, and the associated acceptance criteria

3.2 Symbols

The meanings of symbols used in this part of BS 5911 shall be as given in [Table 1](#).

Table 1 — *Symbols*

Symbol	Meaning	Unit	Reference
N	test type and per nominal size	—	Annex E
R	routine inspection test	—	Clause 5
T	initial type test	—	Clause 5
Y	test per type and nominal size produced, per 1000, with a minimum of one per type and year	—	Annex E

4 General requirements**4.1 Materials****4.1.1 Cements**

Cements shall conform to [4.2.4](#).

4.1.2 Aggregates

Aggregates shall conform to BS EN 12620.

NOTE BS EN 12620:2002+A1:2008, **4.3.7** permits special aggregate gradings where these are needed to suit the manufacturing process, provided the special grading envelopes are defined using the R20 series of sieves specified in ISO 565:1990 and incorporating the appropriate sieves from a specified range of sizes.

4.1.3 Admixtures

Admixtures shall conform to BS EN 934-2.

4.1.4 Additions

Additions shall be in the form of ground granulated blast furnace slag (ggbfs) or pulverized-fuel ash (pfa), conforming to BS EN 15167-1 and BS EN 450-1 respectively.

4.1.5 Mixing water

Mixing water for concrete shall conform to BS EN 1008.

4.2 Concrete

COMMENTARY ON 4.2

BS EN 1008:2002, 3.1 specifies that potable water does not need testing. In the UK there is the potential for some soils to be aggressive in nature. As a safeguard, the provision of a concrete suitable for ACEC AC-4 conditions as described in Building Research Establishment Special Digest 1 2005 is specified. The preferred method to achieve AC-4 for a 100-year intended working life is the use of a DC-4 concrete with surface carbonation (i.e. precast concrete) and low permeability concrete to 5.2.7 of this standard without the need for additional protective measures.

4.2.1 Concrete materials

Only materials described in [4.1](#) shall be used.

NOTE Although unreinforced, the concrete in units conforming to this part of BS 5911 may be strengthened for handling purposes.

4.2.2 Concrete quality

The concrete in any unit shall be dense, homogeneous and conform to the requirements of [4.2.3](#), [4.2.4](#) and [4.2.5](#).

4.2.3 Water content of concrete

Concrete shall have such a composition that the ratio of water to cementitious content in the fully compacted state is not greater than 0.45 and is consistent with the serviceability conditions in [4.3.6](#).

4.2.4 Types of cement

The cement used shall conform to BS 8500-1:2015+A2:2019, Table A.6.

4.2.5 Cementitious content

The fully compacted concrete shall have a minimum cementitious content of not less than the amount shown in BS 8500-1:2015+A2:2019, Table A.12.

4.2.6 Chloride content

The amount of chloride ion in the concrete shall be evaluated by calculation and shall not exceed 1.0% by mass of the cementitious content, or 0.4% if the concrete contains steel for handling purposes.

4.2.7 Water absorption

When tested in accordance with BS EN 13369:2018, Annex F the water absorption of the concrete shall not exceed 6.0% by mass.

4.3 Units

4.3.1 General

Units shall conform to the following requirements at the time of delivery.

4.3.2 Fabrication

Where a gully is to be assembled from fabricated sections, they shall be bonded together with an epoxy mortar or mortar with additives to ensure that the unit maintains its structural strength.