

Workmanship on building sites —

Part 14: Code of practice for below ground drainage

CAWS R12

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- Building Employers' Confederation
- Chartered Institute of Building
- Consumer Policy Committee of BSI
- Department of the Environment (Building Research Establishment)
- Department of the Environment (Property Services Agency)
- Federation of Associations of Specialists and Sub-Contractors
- Institute of Clerks of Works of Great Britain Inc
- Institution of Civil Engineers
- Institution of Structural Engineers
- National Building Specification Ltd.
- National Council of Building Materials Producers
- National House Building Council
- Royal Institute of British Architects
- Royal Institution of Chartered Surveyors
- Society of Chief Architects of Local Authorities

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Foreword

This Part of BS 8000 has been prepared under the direction of the Council for Building and Civil Engineering. It makes recommendation and gives guidance on basic workmanship for conventional types of building work.

The recommendations given are not necessarily comprehensive; particular project documents, e.g. project specifications, may need to cover particular recommendations not dealt with by this code of practice.

This code of practice is unique in that unlike other British Standards, it draws together recommendations given in other codes of practice.

The purpose of this code of practice is to encourage good workmanship by providing the following:

- a) the most frequently required recommendations on workmanship for building work in a readily available and convenient form to those working on site;
- b) assistance in the efficient preparation and administration of contracts;
- c) recommendations on how designers' requirements for workmanship may be satisfactorily realized;
- d) definitions of good practice on building sites for supervision and for training purposes; this guidance is not intended to supplant the normal training in craft skills;
- e) a reference for quality of workmanship on building sites.

It is recognized that design, procurement and project information should be conducive to good workmanship on site.

During the preparation of this code of practice the Building Industry's Co-ordinating Committee for Project Information (CCPI), produced a Common Arrangement of Work Sections (CAWS) for building work. This code of practice has generally been arranged in accordance with the Common Arrangement so that it can be used easily with project specifications and bills of quantities using this arrangement. Other major documents are being restructured in accordance with the Common Arrangement.

NOTE The CCPI was sponsored by the Association of Consulting Engineers, the Building Employers' Confederation, the Royal Institution of Chartered Surveyors and the Royal Institute of British Architects.

When complete BS 8000 will comprise the following Parts.

- *Part 1: Code of practice for excavation and filling;*
- *Part 2: Code of practice for concrete work;*
- *Part 3: Code of practice for masonry;*
- *Part 4: Code of practice for waterproofing;*
- *Part 5: Code of practice for carpentry, joinery and general fixings;*
- *Part 6: Code of practice for roof, slate, tile covering and cladding;*
- *Part 7: Code of practice for glazing;*
- *Part 8: Code of practice for plasterboard partitions and dry linings;*
- *Part 9: Code of practice for cement/sand floor screeds and concrete floor toppings;*
- *Part 10: Code of practice for plastering and rendering;*
- *Part 11: Code of practice for wall and floor tiling;*
- *Part 12: Code of practice for decorative wallcoverings and painting;*
- *Part 13: Code of practice for above ground drainage and sanitary appliances;*
- *Part 14: Code of practice for below ground drainage;*
- *Part 15: Code of practice for hot and cold water services (domestic scale).*

Technical Committee SEB/12, Building drainage, has also participated in the preparation of this Part of BS 8000 and the content is based on and consistent with that of BS 8301. However, BS 8301 covers the subject matter more comprehensively and includes design, materials and other related aspects in addition to workmanship on site.

The text of this Part of BS 8000 includes commentaries and figures. These commentaries are separately identified and are intended to be for guidance only and do not form part of the recommendations. They refer, unless otherwise stated, to the clause which immediately precedes each commentary.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 18, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

Section 1. General

1.1 Scope

This Part of BS 8000 gives recommendations on basic workmanship on building sites and covers those tasks which are frequently carried out in relation to below ground drainage.

For design and special aspects of below ground drainage reference should be made to BS 8301.

NOTE This code of practice includes supplementary elements in the form of commentaries to assist in its use and understanding. Compliance with the commentaries is not necessary in order to be able to claim conformity with the standard.

1.2 References

1.2.1 Normative references

This Part of BS 8000 incorporates, by reference, provisions from specific editions of other publications. These normative references are cited at the appropriate points in the text and the publications are listed on the inside back cover. Subsequent amendments to, or revisions of, any of these publications apply to this Part of BS 8000 only when incorporated in it by amendment or revision.

1.2.2 Informative references

This Part of BS 8000 refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

1.3 Definitions

For the purposes of this Part of BS 8000, the definitions given in BS 4118:1981, BS 6100-2.4.1:1986, BS 6100-5.3:1984, BS 6100-6.2:1986, BS 6100-6.3:1984 and BS 8301:1985 apply.

Section 2. Organization and preparation for work

2.1 Organization

2.1.1 General

Before commencing work ensure that there is a plan for carrying it out and resources are available.

COMMENTARY. It is essential that the plan covers every aspect of the work, including the health and safety of all who might be affected.

The location and distribution of materials need to be determined before work commences, and the types of excavation plant need to be appropriate for their usage and the conditions to be encountered.

Do not carry out excavation works or pipe laying before adequate and checked setting-out references, controls and equipment are available.

Check that full and correct information has been obtained before starting work.

2.1.2 Materials supply

Ensure that an adequate supply of trench support material, lights, pipes, fittings and associated components is available before excavating trenches to receive them. Ensure that a reserve of equipment and materials to meet conditions likely to be found in any excavation is available.

COMMENTARY. It is important that the completed excavation is open before pipe laying for the minimum time and is not left open for lack of materials.

2.1.3 Setting out

Check that the position and levels of existing drains and services have been established.

Establish the centreline and width of drain trenches; locate inspection chambers and ensure that branch drain alignments can be achieved. Check that the trench line does not encroach on routes of other services and that it avoids obstructions. Provide and fix clear, stable markers or reference points for lines and levels.

2.1.4 Storage of materials and components other than pipes

Store in a manner to minimize the risk of damage or deterioration in accordance with manufacturers' sitework instructions.

2.2 Preparation of work, materials and components

2.2.1 Checking materials delivered

Check delivery tickets and certificates against the specification and examine marks, labels and condition of materials and components. If necessary refer to the supplier immediately.

Examine each pipe carefully on arrival at the site, especially the spigot. Reject defective or damaged pipes and mark in a conspicuous manner.

COMMENTARY. Pipes are liable to damage in transit or storage, notwithstanding tests that may have been made before dispatch.

Examine protective coatings carefully for damage. Make good significant damage but reject the pipes if there are major defects in the coating.

Where pipes are provided with factory applied jointing material, examine the jointing material on delivery. Examine each pipe and joint again for soundness and cleanliness immediately before laying.

Examine jointing components supplied separately from the pipes, and containers of lubricants for damage or deterioration.

2.2.2 Handling

Unload and handle materials and components with care to minimize damage and soiling.

COMMENTARY. It is important that pipes are not pushed or thrown from the transport onto the ground nor moved by rolling.

If individual pipes are unloaded by mechanical means, support is required in at least two places and padded contact surfaces are required between pipes and metal slings.

Extra care is needed with unplasticized polyvinyl chloride (UPVC) products in cold weather, when their impact strength is less, and they are therefore more vulnerable to damage.

2.2.3 Storage of pipes

Store pipes on flat level surfaces free from sharp projections or on a level row of timber bearers. To ensure the stability of a loose pipe stack, use either chocks at the bottom layer or side stakes spaced so as to avoid distorting or damaging the pipes. Stack in accordance with the manufacturers' recommendations, but generally store as follows.

- a) Do not stack to a height greater than 2 m.
- b) Store pipes so that their sockets are not resting on the ground or on other pipes. If pipes have both sockets and beaded spigots, stack according to manufacturers' sitework instructions.
- c) If pipes of different diameters are placed in the same stack, place the largest at the bottom.
- d) Protect UPVC pipes from sunlight and heat if they are stored in the open.