

In-situ floorings —

Part 1: Code of practice for concrete bases and screeds to receive in-situ floorings

UDC 693.73.692.53

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- British Aggregate Construction Materials Industries
- British Concrete Pumping Association
- British Plastics Federation
- Building Employers Confederation
- Cement and Concrete Association
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- National Federation of Terrazzo-mosaic Specialists
- Plastics and Rubber Institute
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- Sand and Gravel Association
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This British Standard, having been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee, was published under the authority of the Board of BSI and comes into effect on 30 October 1987

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The following BSI references relate to the work on this standard:
Committee reference ECB/5
Draft for comment 83/11597 DC

ISBN 0 580 15751 2

Amendments issued since publication

Amd. No.	Date of issue	Comments

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Foreword

This Part of BS 8204, which has been prepared under the direction of the Elements and Components (of Diverse Materials) for Buildings Standards Committee gives recommendations for the laying of concrete bases and cement and sand screeds to receive in-situ flooring.

BS 8204 is published in separate Parts as follows:

- *Part 1: Code of practice for concrete bases and screeds to receive in-situ flooring;*
- *Part 2: Code of practice for concrete wearing surfaces.*

Parts dealing with terrazzo, mastic asphalt, polymer modified cement, magnesium oxychloride and cold setting resin in-situ floorings are to be prepared.

As the surface texture and regularity required on a concrete base or screed depends on the flooring to be applied, reference should be made to that Part of BS 8204 which deals with the specific type of flooring.

Part 1 of BS 8204 supersedes section one of CP 204-2:1970, which is deleted by amendment.

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.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 16, 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.

1 Scope

This Part of BS 8204 gives recommendations in respect of materials, design, work on site, inspection and testing for concrete bases and screeds that are to receive in-situ flooring of the following types:

- terrazzo;
- mastic asphalt;
- polymer modified cement;
- magnesium oxychloride;
- cold setting resin.

It applies to ground-supported and suspended concrete bases that are directly finished or that have a screed applied to the base. It does not exclude the use of concrete and screeds made with lightweight aggregates but, as each type of aggregate requires individual consideration, no recommendations on their use are given.

Recommended methods for the assessment of levels and surface regularity and for the determination of soundness are given in appendices A and B, respectively.

NOTE The titles of the publications referred to in this standard are listed on the inside back cover. References to other publications are identified in the text by numbers in square brackets and are listed in appendix C.

2 Definitions

For the purposes of this Part of BS 8204 the following definitions apply. Definitions of terms given in BS 4049 and BS 6100-1 and BS 6100-6, other than the terms given below, apply.

2.1

direct finished base slab

base slab that is suitably finished to receive the flooring to be applied directly without need for a screed

2.2

screed

layer of well-compacted material, commonly a mixture of cement and fine aggregate, applied in-situ to a base at the appropriate thickness given in this code and suitably finished to receive the flooring to be applied and to enable the flooring to be laid to a designated level

2.3

flooring

uppermost fixed layer of a floor that is designed to provide a wearing surface

NOTE Layers in a concrete ground-supported floor and a suspended concrete floor are illustrated in Figure 1 and Figure 2 respectively.

2.4

fine concrete screed

screed consisting of concrete containing coarse aggregate of maximum size 10 mm

2.5

soundness

property that is required of a screed material, as laid, to withstand the crushing effects of the imposed loads and traffic in service

NOTE Soundness is therefore a function of many factors such as good mixing, compaction and curing of the screed.

3 Exchange of information and time schedule

NOTE This clause deals with the exchange of information and time schedule for the whole floor, including any of the types of in-situ flooring given in the scope and in which bases and screeds play a part.

3.1 General

Consultations and exchange of information between all parties concerned with the building operations should be arranged at an early date, so that each may have full knowledge of the particulars of the work and be able to cooperate in producing the conditions required by the others to complete a satisfactory job.

3.2 Exchange of information

The designer should provide in good time all relevant information to those responsible for laying the floor and to others whose work may be affected including whichever of the following are applicable:

- a) description, situation and address of site and means of access;
- b) those conditions of contract which may practically affect this particular work;
- c) location and area of floors to be covered;
- d) age and nature of the base and any preparatory treatment required;
- e) type of flooring to be laid;
- f) number of layers;
- g) thickness of floor and flooring;
- h) finished floor level and maximum permissible departure from datum;
- i) class of surface regularity of base or screed;
- j) type of damp-proofing and insulation;
- k) type and thickness of screed;
- l) category of soundness required;
- m) any work consequent upon services passing through the floor;
- n) treatment of joints;
- o) treatment of skirtings;

- p) treatment of junctions with adjacent floor and floorings;
- q) type of surface finish of base or screed;
- r) any special requirements related to underfloor heating;
- s) minimum time intervals between stages of work and the application of heat in the building;
- t) date for the completion of preliminary work;
- u) dates for the start and completion of various sections of the floor;
- v) details of any compliance testing required.

3.3 Time schedule

In considering the time schedule, in addition to the usual intervals between commencement and completion of work by the various trades involved, additional allowances should be made for the following:

- a) curing and drying of the base concrete and/or screed before the flooring is laid, where appropriate;
- b) period of protection of the completed floor from damage by other trades, including restriction of access.

4 Materials

4.1 Cement

The cement should be one of the following.

- a) Portland cement complying with BS 12.
 - b) Portland-blastfurnace cement complying with BS 146-2.
 - c) High alumina cement complying with BS 915.
- NOTE High alumina cement should not be used in concrete for structural purposes.
- d) Sulphate-resisting Portland cement complying with BS 4027.
 - e) Portland pulverized-fuel ash cement complying with BS 6588.

NOTE There is insufficient experience at the present time to recommend the use of pulverized-fuel ash cement for screeds and the material should therefore be used for bases only.

4.2 Aggregates

4.2.1 Aggregates for concrete bases should be either:

- a) aggregates complying with BS 882; or
- b) aggregates of other types, provided that they are suitable having regard to the strength, density, shrinkage, durability and surface finish of the base.

4.2.2 Aggregates for fine concrete screeds should be composed of coarse 10 mm single-sized aggregate in accordance with Table 4 of BS 882:1983 and of fine aggregate in accordance with 4.2.3.

4.2.3 Aggregates for cement and sand screeds should be fine aggregate complying with grading limit C or M of Table 5 of BS 882:1983 but with not more than 10 % passing sieve size 150 μm .

4.2.4 Aggregates should not contain any deleterious material in sufficient quantity to affect adversely the surface finish of a directly finished base or screed. For example, coal and iron pyrites in the aggregate can cause "pop-outs".

NOTE Attention is drawn to possible restrictions on the type of aggregate, e.g. in regard to strength, to be used in bases and screeds to receive certain in-situ floorings.

4.3 Admixtures

Admixtures should comply with the appropriate Part of BS 5075 (see 5.13).

4.4 Reinforcement

Where light reinforcement is required in a screed it should consist of steel fabric, reference D49 or D98 in accordance with BS 4483.

NOTE Heavier reinforcement may be necessary for use in screeds constructed for structural purposes.

4.5 Water

Water used for mixing bases and screeds should be in accordance with appendix A of BS 3148:1980.

5 Design considerations

5.1 Sub-base

A sub-base should be provided to give uniform support to ground-supported base slabs and the flooring applied to them. The sub-base should consist of inert well-graded granular material of maximum size 75 mm, fully compacted and lightly blinded with sand or inert, crushed, fine material to form a flat surface to within a tolerance of + 0 mm, – 25 mm. Alternatively, lean mix concrete with mix proportions of 1 : 15 to 1 : 20 should be used.