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Code of practice for
Internal plastering

(formerly CP 211)

Code de bonne pratique pour le plâtrage d'intérieur

Richtlinie für innere Gipsarbeiten

British Standards Institution

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Foreword

The code of practice CP 211 'Internal plastering' has been allocated the new number BS 5492 as part of the integration work on codes and standards. First published in 1949 and revised in 1966, the code has now been further revised to bring the recommendations into line with current practice in the use of plastering materials and techniques. The code is designed to cover internal plaster finishes to all normal types of background.

The recommendations are framed in logical sequence, namely materials and accessories; properties of backgrounds that influence the choice of suitable plastering systems; guidance on preparation of surfaces to be plastered; choice of suitable systems; methods of application and maintenance.

The plaster finishes considered are gypsum plasters; lime gypsum plasters; premixed lightweight plasters; and cement and cement/lime finishes. Relevant data are summarized in a series of tables. The code also includes a table of classification of proprietary plasters. The committee again considered mechanical methods of application of conventional plasters and concluded that the recommendations of the code are

generally applicable to this technique. However, because of the relatively recent introduction of projection plasters and the associated techniques, it was decided that it was still too early to incorporate specific recommendations for these plasters in the main body of the text. Nevertheless, where possible, reference has been made to projection plasters and techniques since they are generally available for use. Guidance on the use of these plasters and machines for their application has been included as appendix A. These specially formulated plasters are applied in a continuous operation to the required thickness and do not require an additional finish plaster.

No recommendations for plastering over warming panels are given in this code. The requirements for plastering over such panels vary with the type of system and advice should be obtained from the suppliers of the particular type of heating panel.

This code does not deal with types of external rendering which can be used internally and for these reference should be made to BS 5262.

This code of practice represents a standard of good practice; compliance with it does not confer immunity from relevant legal requirements, including byelaws.

British Standard Code of practice for Internal plastering

Section one. General

1. Scope

This code of practice gives recommendations for internal plastering on all types of background for use under normal conditions.

It contains guidance on materials, types of background, preparation of the surface to be plastered, choice of a suitable plastering system, methods of application (including mechanical projection plastering techniques) and maintenance.

2. References

The titles of the standards publications referred to in this code are listed on the inside back cover.

3. Definitions

For the purposes of this code the definitions given in BS 4049 apply.

4. Exchange of information

Working drawings and specifications should be prepared in sufficient detail to afford proper guidance in the preparation of estimates and the execution of the work. Where bills of quantities form part of the contract, they should be prepared in accordance with the 'Standard method of measurement of building works' or the 'Code for measurement of building works in small dwellings', as appropriate. An exchange of information between those responsible for the execution of the backgrounds, the internal plastering and the subsequent decoration, and with other trades whose work will affect or be affected by the plastering, should take place as soon as possible after acceptance of contract.

When preparing plastering details the designer should take into account the following points.

- (a) The choice of types of plaster (including plaster for specialists' work) to be used in various parts of the building depends on functional requirements and the nature of the background. The nature of the background and its plaster finish should therefore receive consideration together.
- (b) The type of surface finish and any other points affecting the final appearance, particularly the compatibility of the plaster with the proposed decorative finish.
- (c) Area and types of finish and thickness required together with sufficient details of the nature of the surfaces to be plastered, the junctions with door frames,

ceilings, linings etc., so that the most suitable plastering materials and methods can be selected.

(d) The nature of the background which may suggest the need for a bonding medium or the use of a plaster of good water retentivity.

(e) The effect of the thickness of the plaster on:

- (1) the finished sizes and heights of rooms or other spaces;
- (2) the thickness of grounds;
- (3) frames which are to be flush both sides in thin walls and partitions;
- (4) the positioning of frames and other joinery relative to plaster faces;
- (5) grooves in joinery that are to receive plaster;
- (6) the positioning of heating appliances and other installations and fittings;
- (7) any other items, the specifications for which can be drawn up in detail only after the plaster thicknesses have been determined.

(f) The preparation of the different building surfaces to receive the various types of cornices, arrises, corner treatments, metal accessories (such as angles and beads), expansion joints, coves, mouldings, dado treatments and plaster enrichments. Consideration should be given to details of construction, the materials to be used and any special form of key, metal lathing, or other device to be built into, or attached to, the background as support where adhesion cannot be relied upon.

(g) The work in other trades, particularly in connection with service pipes, conduits, wiring and so forth, that are to be covered by or buried in the plaster; the position of any warming panels and their plastering treatment.

(h) The suitability of materials that may be in contact with different types of plaster, as well as of any protective treatment that may be necessary.

As soon as the plastering contract has been allocated, the plastering contractor should be furnished with all necessary working drawings and should visit the site to acquaint himself with building progress. He will then be in a position to arrange for any necessary preparatory work to be carried out without causing delay to the work that is to follow.

A suitable system of marking the positions of fixing points and grounds and other work which may be obscured by the plaster should be followed.

A record should be maintained of all dates in connection with the construction and preparation of backgrounds and of the different operations of plastering and decoration in the various parts of the building.

Plastering should commence only after the particular parts of the building have been made weather resisting and should be protected at all stages from the direct effects of inclement weather due to unglazed windows or from other hazards of construction. Adequate lighting should be provided during all stages of the plastering work and facilities should be available for increasing the intensity of artificial lighting and suitably positioning it when working to obtain satisfactory surfaces for gloss finishes or where it is known that the surface will be subject to shallow angle lighting. (See appendix B.)

5. Time schedule

In preparing a time schedule for the work involved in a building, each operation should be considered in relation to the others, due consideration being given to the most economical use of general plant and scaffolding by all trades; attention should also be paid to ensuring that the various trades follow one another in the correct sequence and that they do not interfere unduly with each other's work. The whole of the scaffolding should be sound and in accordance with the requirements of Construction Regulations made under the Factories' Acts. The parts should be tested or thoroughly examined before erection and the completed scaffold examined before use.

The time schedule for the whole building work should be planned in the initial stages before operations are begun and in consultation with those who will become responsible for carrying out the work of each of the trades concerned.

The time schedule should allot times for the construction and preparation of the backgrounds to receive plaster and allow sufficient intervals for drying out and maturing, either by natural or artificial means, after the structure has been made weathertight, so that the plastering work may proceed without subsequent damage to it or its decoration. (See also BRE Digest 163*.)

The time schedule should also provide for the completion of all subsidiary work necessary before plastering commences. The schedule should include times for commencement of plastering work in the different parts of the building. The different phases of plastering and necessary time intervals between each should be carefully planned allowing sufficient time after completion for drying out the plaster and background before the application of decoration or other finishes.

In addition the plastering contractor should maintain a detailed programme for the plastering and ancillary work prepared in consultation with those responsible for the work.

Arrangements should be made and time allowed for regular site inspections to enable any defects to be located and remedied, and for the drying out and maturing of the necessary repairs at the correct stages as the work proceeds.

The time schedule should be carefully planned to avoid the risk of serious damage to the plaster by subsequent work and to avoid any question of last minute alterations in the sequence of operations. When alterations are unavoidable permanent decoration should be postponed; if there is any doubt at the time of preparing the time schedule, such postponement should be provided for in advance so that adequate time may be allowed before decoration is commenced.

Section two. Materials and accessories

6. General

Materials and accessories should comply with the requirements of British Standards where these are applicable. Clauses in this section either refer to appropriate British Standards or give recommendations for materials and accessories not covered by British Standards.

7. Plasters

7.1 Gypsum plasters. Gypsum plaster should be one of the following grades complying with the requirements of BS 1191 : Parts 1 and 2.

7.1.1 Gypsum plasters, excluding premixed lightweight plasters (Part 1 : 1973)

Class A. Plaster of Paris, suitable for gauging lime final coats for patching and repair work and for fibrous plaster-work.

Class B. Retarded hemihydrate gypsum plaster in the following types:

- type *a.* Undercoat plaster (browning (including fibred) and metal lathing grades), and
- type *b.* Final coat plaster (finish, board finish and thincoat finish plasters).

Type *a* plasters are suitable for sanded undercoats and type *b* finish plasters are suitable for final coats, neat or gauged with not more than 25 % lime by volume in two- or three-coat work. Board finish plasters are suitable for neat single-coat work on board backgrounds.

Class C. Anhydrous gypsum plaster, used as a final coat only; neat or gauged with not more than 25 % lime by volume.

Class D. Keene's plaster, used as a neat final coat plaster only.

7.1.2 Gypsum plasters, premixed lightweight plasters (Part 2 : 1973). Premixed lightweight plasters consist of retarded hemihydrate gypsum plasters incorporating suitable lightweight aggregates and other additions to impart desirable properties. They may be divided into the following types:

- type *a.* Undercoat plasters (browning plaster, browning plaster suitable for high suction backgrounds, metal lathing plaster and bonding plaster (available in two grades)), and
- type *b.* Final coat plaster (finish plaster).

7.2 Thin-wall plasters. Thin-wall plasters incorporate organic binders and harden by drying. They may be used for single-coat work or on appropriate undercoats. Thin-wall plasters may be applied normally or by spraying techniques.

7.3 Projection plasters. Projection plasters are specially formulated gypsum plasters suitable for direct application by special plastering machines and newly introduced plastering techniques. The projection plaster is applied and finished in a continuous operation to any required thickness. The technique may include the use of electrically operated power floats. (See also appendix A.)

7.4 X-ray protection plasters. X-ray protection plasters are premixed plasters incorporating barytes (barium sulphate) aggregates in undercoat and finishing grades.

*BRE Digest 163 'Drying out buildings'.

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7.5 Acoustic plasters. Acoustic plasters are specially formulated plasters incorporating suitable aggregates such as pumice and are supplied premixed. They are normally applied only to an appropriate undercoat plaster which should be well keyed to provide a satisfactory bond. The plaster provides varying degrees of texture finish, depending upon the final float treatment.

7.6 Cement plasters (premixed lightweight cement plasters). These plasters are proprietary plasters based on cement and lime, premixed with lightweight aggregate.

7.7 Proprietary plasters. A classified list of proprietary plasters is given in table 1 to enable users to identify the types of plaster referred to in this code. Where a British Standard exists for a particular type of plaster the table indicates the British Standard classification.

8. Cement

Cement should be one of the following types.

- (a) Portland cement complying with the requirements of BS 12.
- (b) Portland-blastfurnace cement complying with the requirements of BS 146.
- (c) High alumina cement complying with the requirements of BS 915.
- (d) Masonry cement complying with the requirements of BS 5224.

Coloured Portland cement should comply with the physical requirements of BS 12, whilst the requirements in respect of the chemical composition should be met by the basic cement, i.e. without the added pigment.

Where high alumina cements are to be used for work described in this code, the manufacturer's advice should be sought before drawing up a specification.

9. Ready-mixed mortars

The user should obtain the assurance of the manufacturer that a ready-mixed mortar complies with the requirements of BS 4721 if appropriate or otherwise that it is suitable for the purposes for which it is required.

10. Lime

Lime should be one of the following types complying with the requirements of BS 890:

- (a) high-calcium, semi-hydraulic or magnesian lime in the form of either hydrated lime (powder), lime putty or quicklime;
- (b) high-calcium by-product lime.

11. Aggregates

11.1 Dense aggregates. Sand aggregates should comply with the requirements of either BS 1198 or BS 1199. Where such sands are not available it is essential that the plastering contractor provides satisfactory evidence that any other sands he proposes to use are suitable for their intended use.

Sufficient attention is not always paid to the suitability of the sands used for plastering. The strength of sanded plaster undercoats depends, to a large extent, on the quality and grading of the sand which comprises at least two-thirds of the mass of the undercoat. The working properties of mixes, their water demand, setting times and the behaviour of the finished product may all be affected by the choice of sand. Accordingly for gypsum undercoats a type 1 or type 2 sand within the grading limits of BS 1198 should be

used. For cement and lime undercoats, sand complying with the requirements of BS 1199 should be used.

For final coats a type 3 sand should be used. Sands that are naturally slightly coarse may often be made to comply with the requirements of the British Standards by screening through a suitably sized sieve. Final coat sands may often be obtained from undercoat sands in a similar manner. The required grading for either undercoat or final coat sands can often be obtained by blending together suitable proportions of sands which are by themselves of unsuitable grading.

Barytes aggregates provide a protection value against electromagnetic radiation and may be used with a binder of either Portland cement or gypsum plaster. Premixed gypsum plasters incorporating controlled quantities of barytes aggregates are available. The addition of any other aggregates, cement or filler will impair the protection level afforded by the plaster. Because of the danger to health of occupants if errors are allowed to occur in the application of the protection, it is especially important that the utmost precautions are taken to ensure complete compliance with the designer's specification. The designer's specification should be drawn up in consultation with the hospital physicist or the National Radiological Protection Board.

11.2 Lightweight aggregates. These should comply with the requirements of BS 3797. Lightweight aggregates used in plastering comprise expanded perlite and exfoliated vermiculite.

12. Synthetic fibres

Suitable synthetic fibres, clean, dry and free from oil, may be used.

13. Water

Water should be clean, free from harmful amounts of deleterious matter and from any unusual proportion of dissolved salts; in case of doubt an analysis should be made. Sea water, tidal estuary or brackish water should not be used. Water fit for drinking is normally suitable.

14. Admixtures

Organic workability aids (plasticizers or air entraining agents) should, where applicable, comply with the requirements of BS 4887 and should be used in accordance with manufacturer's instructions. Other admixtures such as water retentivity aids should be used in accordance with the particular plastering specification. Admixtures other than clean water, lime and sand, or other aggregate where appropriate, should not be added to gypsum plaster.

Only clean water should be added to premixed plasters.

15. Bonding agents

The following types of proprietary bonding liquid may be used:

- (a) emulsions of PVAC complying with the requirements of BS 5270 or emulsions of other polymers;
- (b) bituminous solutions or emulsions.

The bonding agents in (a) can be used on soffits or walls and in addition to their use as bonding agents are also used to reduce suction on high suction backgrounds.

The bonding agents in (b) are not recommended for use on soffits but are intended to provide some resistance to damp penetration when used as a vertical damp proof course on walls.

16. Scrim

Scrim should be of corrosion resistant metal, hessian or suitable glass or synthetic fibre, with a mesh just coarse enough to allow easy passage of plastering materials. It is used to reinforce joints, e.g. between boards or slabs used

as a base for plastering or over surfaces, e.g. heating panels where local stresses might otherwise cause unsightly cracking. The material should have an acceptable minimum strength to prevent it being severed by the edge of the trowel particularly on internal angle applications.

Table 1. Classification of proprietary plasters

Classification	British Standard classification		Proprietary name
	Class	Type	
Gypsum plasters			
<i>Plaster of Paris</i>	BS 1191 : Part 1 A	—	C B Stucco
<i>Retarded hemihydrate gypsum plaster</i>	BS 1191 : Part 1 B	a.1	Thistle Browning Plaster Thistle Slow-setting Browning Plaster Thistle Fibred Plaster
Undercoat plaster: browning plaster			
metal lathing plaster			Thistle Metal Lathing Plaster
Final coat plaster: finish plaster board finish plaster		b.1	Thistle Finish Plaster
		b.2	Thistle Board Finish Plaster
<i>Anhydrous gypsum plaster</i>	BS 1191 : Part 1 C		Sirapite Plaster
Final coat plaster			
<i>Keene's plaster</i>	BS 1191 : Part 1 D	—	Standard Keene's Polar White Cement, Fine Polar White Cement, Standard
<i>Premixed lightweight gypsum plaster</i>	BS 1191 : Part 2	a.1	Carlite Browning Plaster Carlite Browning HSB Plaster
Undercoat plaster: browning plaster			
metal lathing plaster		a.2	Carlite Metal Lathing
bonding plaster		a.3	Carlite Bonding Coat Plaster Carlite Welterweight Bonding Coat Plaster
Final coat plaster: finish plaster		b.1	Carlite Finish Plaster Limelite Finishing Plaster
<i>Thin coat</i>	None	—	LSM Special Finishing Plaster
<i>Acoustic plaster</i>	None	—	Thistle Acoustic Plaster
<i>X-ray plaster</i>	None	—	Barytite Rough Plaster Barytite Fibred Plaster
Undercoat plaster			
Final coat plaster		—	Barytite Finish Plaster
<i>Projection plaster</i> (machine applied)	None	—	Thistle Projection Plaster
Cement plasters			
<i>Premixed cement plaster</i>	None	—	Limelite Backing Plaster
Undercoat			
<i>Resinous plasters for squash courts</i>	None	—	Proderite Formula 'S' Base Screed Proderite Formula 'S' Finish
Base coat			
Final coat			

17. Metal beads

Care should be taken to ensure that metal beads are kept dry and distortion is prevented during storage and handling. Care should also be taken to prevent damage to the galvanized coating which should comply with the requirements of BS 2989.

18. Gypsum plasterboard

Gypsum plasterboard when used as a background to plastering systems should comply with the requirements of BS 1230.

19. Metal lathing

Expanded metal lathing used as a background for plastering should weigh not less than 1.6 kg/m² for sanded plasters and 1.2 kg/m² for lightweight plasters and should comply with the requirements of BS 1369. Heavier grades may be required for specialist applications. The mesh should be galvanized or coated with black bitumen paint that should also be used to seal all cut edges and breaks in the coating to the steel, staples, nail heads, etc. Other types of metal lathing should be used in accordance with the manufacturer's recommendations.

20. Corrugated lathing

Lathing of corrugated bitumen impregnated fibre provides a barrier to damp penetration. As there is no relevant British Standard the manufacturer should be consulted as to its suitability for any particular application and its method of use.

21. Galvanized wire netting

Where required to provide a mechanical key, 0.71 mm galvanized wire netting of mesh not greater than 50 mm and complying with the requirements of BS 1485 should be used.

Section three. Backgrounds

22. Characteristics of the background

It has been assumed throughout this code that the backgrounds concerned have not received any prior treatment such as painting or impregnation that is incompatible with adequate bond. The nature of the background to be plastered is important and is a prime consideration in deciding upon the type of plaster to be used and the number of coats. The characteristics which may influence this choice are as follows.

(a) *Strength of the background.* The strength of undercoat mixes should be related to that of the background. Undercoat mixes based on cement should not normally be stronger than the background.

(b) *Surface texture, porosity and suction of the background.* These affect both the adhesion of plaster and its ultimate strength and therefore influence the selection of the type of mix to be used, particularly the proportion of sand in gypsum undercoat mixes. Gypsum undercoat plasters for such mixes should be of a type complying with the requirements of BS 1191 : Part 1.

On backgrounds which have been treated with pressure injection solvent based silicone treatments designed to cure dampness or provide a chemical damp course, the recommendations of the manufacturer of the prescribed treatment should be followed.

(c) *Bond.* Bond is afforded by the nature of the background or is artificially provided. The most important surface characteristic of a background is its ability to provide a satisfactory bond or key with the first plaster coat. This varies with the different classes of background (see clause 23).

(d) *Trueness of construction.* This is important because of its effect on the thickness of the plaster and hence its adhesion, the number of plaster coats required to produce a level surface and the final appearance of the plaster.

(e) *Soluble salts.* Soluble salts may occur in backgrounds such as walls of clay bricks or blocks, or soffits of hollow pot floors and, if appreciable amounts of water have been introduced during construction or are applied to reduce suction, they may appear as efflorescence after plastering.

(f) *Moisture movement and thermal movement.* Differential movement between plaster and background is frequently the cause of cracking or loss of adhesion of the plaster. Relative movement at the junction of two dissimilar backgrounds may have a similar effect. The thermal expansion of gypsum plaster is greater than that of most backgrounds. Differential thermal movements are therefore greatest on backgrounds of low thermal expansion and where these provide insufficient mechanical key suitable precautions should be taken. (See table 2.)

23. Classes and types of backgrounds

Backgrounds for plastering fall into the following six main classes.

(a) *Solid backgrounds.* These vary considerably in strength, suction and mechanical key and may be further classified as follows.

(1) *Dense, strong and smooth materials.* These include high density clay or concrete bricks and blocks and dense concrete, either precast or in situ; they have low porosity, little suction and smooth surfaces that offer no mechanical key. Drying shrinkage of dense concrete may vary from low to high according to mix compaction and reinforcement, but it is usually moderate. These types of backgrounds may present difficulty in securing satisfactory bond with the plaster so that some bonding treatment is often necessary (see table 2 and clause 24). Such treatments are of particular value for concrete containing brick, granite or limestone aggregate where the greater difference between thermal expansions of the concrete and the plaster is very liable to cause failure of adhesion. The surface of concrete can vary considerably depending upon the nature of the shuttering that has been used. Therefore bonding treatments may also be required to be used on exceptionally smooth, dense, normal ballast aggregate concrete. It should not, however, be assumed that because concrete has a rough finish it can be plastered satisfactorily. Where it is known beforehand that the concrete surface is to be plastered, provision should be made for the surface to be made suitable to receive the type of plaster that has been specified.

Certain structural lightweight aggregate concretes with smooth dense surfaces may also require bonding treatments and are therefore appropriately considered as being included with this type of background, in spite of their somewhat lower density.

Table 2. Backgrounds: characteristics and suitable plastering systems

Background											
Suitable alternative undercoat plasters											
Class	Type	Suction	Key or bond	Drying shrinkage	Type of finish (see note)	Premixed lightweight plasters		Sanded brown plasters (proportions by volume)	Undercoats based on cement (proportions by volume)	Remarks	Single-coat work (excluding projection plaster)
						Gypsum	Cement				
Solid	Normal clay brick-work and blockwork	Moderate to high	Good if joints well raked or bricks keyed	Negligible	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Browning — —	— Backing Backing — —	1 : 3 1 : 3	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — 1 : ¼ : 3, 1 : 1 : 6 or 1 : 2 : 9 —	Background should be dry to minimize efflorescence	Not suitable for this type of background
	Dense clay brick-work (other than engineering brick-work) and calcium silicate blockwork or concrete blockwork or brickwork	Low to moderate	Variable, bonding treatments may be required for cement based undercoats	Low to high for materials other than clay brickwork	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Browning or bonding — —	— Backing Backing — —	1 : 2 1 : 2	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — 1 : ¼ : 3, 1 : 1 : 6 or 1 : 2 : 9 —	Background should be dry to minimize shrinkage except for dense clay brickwork	Not suitable for this type of background
	Clay engineering brickwork, dense concrete	Low	Hacking, spatterdash or bonding treatment may be needed	Negligible for clay brickwork, low to high for dense concrete	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Bonding — —	— — — — —	1 : 1½ 1 : 1½	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — 1 : ¼ : 3, 1 : 1 : 6 or 1 : 2 : 9 —	Sufficiently level concrete surfaces may be plastered with thin-wall plasters or board finish plasters: a bonding treatment may be necessary	Sufficiently level concrete surfaces may be plastered with thin-wall plasters or board finish plasters: a bonding treatment may be necessary
	No-fines concrete	Low	Good	Low to moderate	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Browning — —	— Backing Backing — —	1 : 2 1 : 2	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — 1 : ¼ : 3, 1 : 1 : 6 or 1 : 2 : 9 —	Not suitable for this type of background	Not suitable for this type of background
	Close textured lightweight aggregate concrete blocks	Low	Poor: bonding treatments may be necessary	Moderate to high	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Bonding — —	— Backing Backing — —	1 : 1½ 1 : 1½	Not normally suitable for this type of background	Background should be dry to minimize shrinkage movement	Sufficient level surfaces may be plastered with thin-wall plasters or board finish plasters: a bonding treatment may be necessary
Aerated	Open textured lightweight aggregate concrete blocks	Low to moderate	Good	Moderate to high	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Browning — —	— Bonding Bonding — —	1 : 2 1 : 2	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — Not suitable —	Background should be dry to minimize shrinkage movement	Not suitable for this type of background
	Aerated concrete slabs and blockwork	Moderate to very high	Poor : bonding treatments may be necessary	Moderate to high	I Gypsum/lime II Weak lime III Lightweight IV Cement V Projection	— — Browning or HSB Browning —	— Backing Backing — —	1 : 2 1 : 2	1 : 1 : 6 1 : 1 : 6 or 1 : 2 : 9 — 1 : 1 : 6 or 1 : 2 : 9 —	Very high suction: blocks may require special plasters of high water retentivity or bonding treatment	Sufficiently level surfaces may be plastered with thin-wall plasters or board finish plasters : a bonding treatment may be necessary