



Promonta NV

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**Agrément
Certificate
No 01/3849**
Second issue*

Designated by Government
to issue
European Technical
Approvals

PROMONTA NORMAL, HEAVY AND PROMHYDRO GYPSUM BLOCKS

Cloison
Trennwand

Product




- THIS CERTIFICATE OF CONFIRMATION RELATES TO PROMONTA NORMAL, HEAVY AND PROMHYDRO GYPSUM BLOCKS, A RANGE OF SMOOTH, SOLID BLOCKS.
- The blocks are for use internally, in non-loadbearing partitions on solid floors.
- The choice of block type is dependent on the moisture conditions.
- Partitions are formed from the blocks bonded with an adhesive bonding agent.

Confirmation of Belgian ATG Certificate No 99/2103 issued by the Union Belge pour l'Agrément technique dans la construction.


Regulations

1 The Building Regulations 2000 (as amended) (England and Wales)

 The Secretary of State has agreed with the British Board of Agrément the aspects of performance to be used by the BBA in assessing the compliance of partition blocks with the Building Regulations. In the opinion of the BBA, Promonta Normal, Heavy and Promhydro Gypsum Blocks, if used in accordance with the provisions of this Certificate, will meet or contribute to meeting the relevant requirements.

Requirement: B2	Internal fire spread (linings)
Requirement: B3	Internal fire spread (structure)
Comment:	The blocks are non-combustible. Walls constructed from the blocks have fire resistances as detailed in sections 8.1 and 8.2 of this Certificate.
Requirement: Regulation 7	Materials and workmanship
Comment:	The blocks form an acceptable material when specified and installed in accordance with section 15 of this Certificate.

2 The Building Standards (Scotland) Regulations 1990 (as amended)

 In the opinion of the BBA, Promonta Normal, Heavy and Promhydro Gypsum Blocks, will satisfy or contribute to satisfying the various Regulations and related Technical Standards as listed below.

Regulation: 10	Fitness of materials and workmanship
Standard: B2.1	Selection and use of materials, fittings, and components, and workmanship
Comment:	The blocks are acceptable. See section 15 of this Certificate.

continued

continued

Regulation:	12	Structural fire precautions
Standards:	D2.1 and D2.2	Structural protection — Principles
Comment:		The blocks can be used to meet the particular requirements as detailed in <i>Provisions deemed to satisfy the Standards</i> (D1.3) of these Standards. See sections 8.1 and 8.2 of this Certificate.
Standard:	D2.3	Structural protection — Non-combustible materials
Comment:		The blocks can be used in walls to satisfy this Standard. See sections 8.1 and 8.2 of this Certificate.
Standards:	D7.1 and D7.2	Fire spread on internal linings — Principles
Comment:		The blocks can be used in a wall to satisfy these Standards. See sections 8.1 and 8.2 of this Certificate.

3 The Building Regulations (Northern Ireland) 2000



In the opinion of the BBA, Promonta Normal, Heavy and Promhydro Gypsum Blocks, if used in accordance with the provisions of this Certificate, will satisfy or contribute to satisfying the various Building Regulations as listed below.

Regulation:	B2	Fitness of materials and workmanship
Comment:		The blocks form an acceptable material. See section 15 of this Certificate.
Regulation:	E4	Internal fire spread — Structure
Comment:		The blocks are non-combustible, have a Class 0 surface and walls constructed from the blocks have appropriate fire resistance. See sections 8.1 and 8.2 of this Certificate.

4 Construction (Design and Management) Regulations 1994 (as amended)

Construction (Design and Management) Regulations (Northern Ireland) 1995 (as amended)

Information in this Certificate may assist the client, planning supervisor, designer and contractors to address their obligations under these Regulations.

See sections: *6 Delivery and site handling* and *13 Health and safety.*

Technical Specification

5 Description

5.1 Promonta Normal, Heavy and Promhydro Gypsum Blocks are smooth, solid blocks of gypsum which are fixed between a solid floor, ceiling and walls.

5.2 Promonta Normal and Promonta Heavy are produced from plaster ($\text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O}$) and water, and Promhydro are produced from gypsum, water and a water repellent. Automated processes are employed for weighing raw materials, mixing, casting and extruding. Quality control of the process is operated automatically and continuously.

5.3 Each block is moulded with two, tongued sides (one short and one long) and two, grooved sides, to enable them to be fitted together during assembly (see Figure 1). Characteristics of the blocks are given in Table 1.

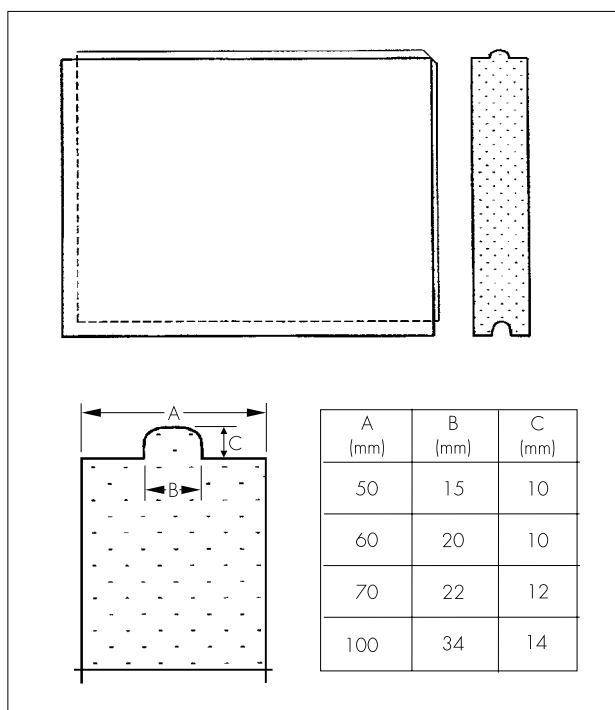
Table 1 Characteristics

Block type	Dimensions (mm)		Density (kgm^{-3})	Thermal conductivity ($\text{Wm}^{-1}\text{K}^{-1}$)	Colour designation
	face	thickness			
Promonta Normal ⁽¹⁾	667 x 501	50, 60, 70, 100	950	0.35	broken white
	450 x 501	100	950	0.35	broken white
Promonta Heavy ⁽²⁾	640 x 501	50, 60, 70	1250	0.52	pink
	450 x 501	70, 100	1250	0.52	pink
Promhydro ⁽¹⁾	667 x 501	50, 60, 70, 100	950	0.35	light blue
	450 x 501	100	950	0.35	light blue

(1) Density $950 \pm 50 \text{ kgm}^{-3}$

(2) Density $1250 \pm 5\% \text{ kgm}^{-3}$.

Figure 1 Block detail



5.4 Promontine adhesive is used to bond the blocks and for finishing at joints. It consists of a dry mix of gypsum, a bonding retardant and additives, which is mixed with clean water in a ratio of 1.3 kg to 1.5 kg of powder per 1 litre of water, either manually or mechanically, until homogeneous.

5.5 Ancillary items also used are:

Promolys or Superpromontine — gypsum-based finishing plaster

- Polyethylene sheeting — 0.15 mm thick damp-proof membrane
- PVC-U channel-section — 1.5 mm thick, 15 mm to 30 mm high for use at the base of the wall, for the perpendicular junction or for attachment to the ceiling (when fitted with a strip of compressible foam)
- Strip of PUR-based synthetic foam — density 80 kgm^{-3}
- Polyurethane foam — applied by spraying, for filling joints
- Elasto WP12 — flexible filler for joint between wall and ceiling
- Gypsum — for mortar and finishing.

6 Delivery and site handling

- 6.1 The blocks must be protected from moisture and water during transport and storage, (it is recommended wooden planks are used under and between the blocks if unwrapped and taken off the pallet). The blocks must be stacked perpendicularly.
- 6.2 Care should be taken when handling the blocks to avoid scratching faces and chipping edges.
- 6.3 The Promontine adhesive is supplied in 25 kg bags and if kept dry has a shelf-life of nine months.
- 6.4 The Promolys or Superpromontine finishing plasters are supplied in 25 kg bags and if kept dry have a shelf-life of 12 months.

Design Data

7 General

- 7.1 The Promonta Gypsum blocks, when subject to the relevant Building Regulations, have been assessed as suitable for use in non-loadbearing partitions.
- 7.2 The maximum height of partitions and the length of partitions between reinforcements must not exceed the dimensions given in Table 2. However, provided the surface area of the partition does not exceed the values indicated and structural connections are respected, these heights and lengths may be exceeded by a maximum of 30% or 15% respectively.

Table 2 Reinforcement spacing

Thickness (mm)	Maximum height (m)	Maximum horizontal distance between reinforcements (m)	Maximum surface area (m ²)
60	2.60	5.00	13
70	3.00	6.00	18
100	4.00	8.00	32

Note 1: If higher walls are required, an additional study should be carried out. The limits given in Table 3 below are indicative only.

Note 2: In addition, the following construction exclusions apply:

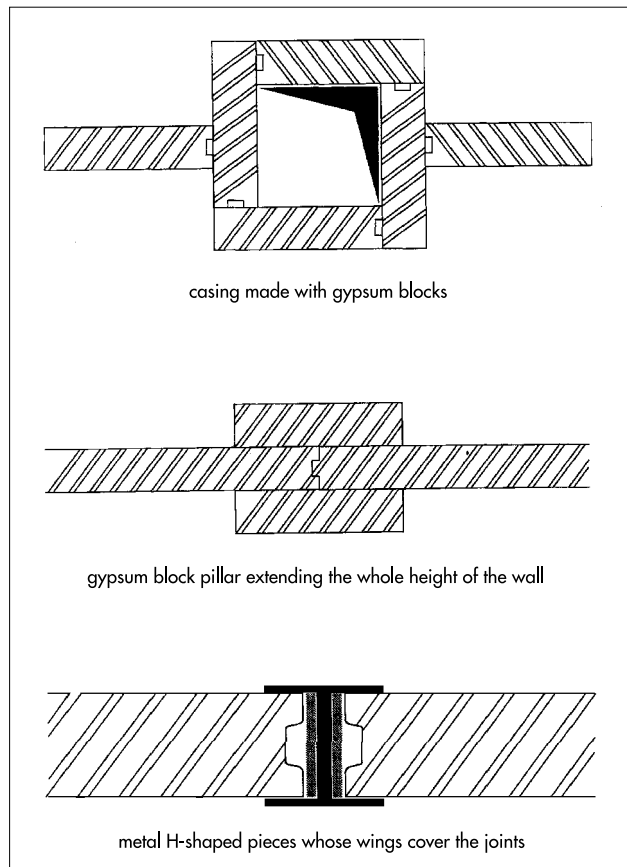
- (i) 60 mm thick walls in areas accessible to the public (schools etc) or intensively used private areas
- (ii) walls with door openings, unless the opening continues up to the soffits (see sections 18.16 to 18.18)
- (iii) walls which could fail and allow objects to fall to a lower level.

Table 3 Wall limits

Thickness (mm)	Maximum surface area (m ²)	Maximum height (m)
60	10	8
70	14	9
100	25	12

7.3 Walls may be reinforced as detailed in Figure 2.

Figure 2 Block reinforcement types



7.4 The choice of gypsum block depends on the interior conditions. Where conditions of high humidity are expected, such as in bathrooms or kitchens, it is recommended that Promhydro blocks are used. If shower walls are to be constructed, Promhydro blocks, covered with suitable tiles, tile adhesive and grout, should be used. Further advice should be sought from the Certificate holder and the manufacturer of the adhesive.

8 Performance in relation to fire

8.1 Promonta Gypsum Blocks have been assessed as non-combustible as defined in the national Building Regulations and satisfy Class 0 surface requirements:

England and Wales

Approved Document B, Appendix A, Tables A6 and A8

Scotland

Technical Standards, Provisions deemed to satisfy the Standards (D1.3)

Northern Ireland

Technical Booklet E, Section 6, paragraph 6.4 and Section 2, paragraph 2.4.

8.2 Test data indicate that a wall built from the 70 mm blocks would achieve a three-hour fire resistance and walls built from the 100 mm blocks would achieve a four-hour resistance.

9 Sound insulation

The weighted sound reduction for a laboratory measurement of panels constructed from the block types is given in Table 4.

Table 4 Sound reduction index

Construction	Weighted sound reduction index R_w (dB)	
Solid wall		
100 mm Fair-faced Promonta solid gypsum block wall ⁽¹⁾	41	
Lined 100 mm Promonta solid gypsum block wall ⁽²⁾	49	
Cavity wall		
Promonta Normal 70 mm (950 kgm^{-3}) plus 40 mm foam glued onto it plus 10 mm air cavity plus Promonta Normal (950 kgm^{-3})		
Composition of joints:		
Type A ⁽³⁾	60	
Type B ⁽³⁾	59	
(1) The following additional construction details should be noted: The blocks (density $950\text{--}1000 \text{ kgm}^{-3}$), with $450 \text{ mm} \times 500 \text{ mm}$ face dimensions manufactured with two grooved and two tongued edges, were jointed with Promontine adhesive and laid on 3 mm thick Velimat AL1 15 pre-compressed fibreglass strips (230 kgm^{-3}). The vertical sides of the aperture were lined with 10 mm thick D80 Promofoam strips and the blockwork wall was sealed at the perimeter using gypsum plaster.		
(2) A single layer of 30 mm tissue-faced Rockwool slabs (200 kgm^{-3}) was secured to each side of the wall on adhesive dabs and retained with 12.5 mm Knauf wallboard fixed using $8 \times 90 \text{ mm}$ insulation fixings. All board joints were taped and caulked and the perimeter was gun-sealed using Gyproc sealant.		
(3) The following composition of joints was used:		
Peripheral insulation	70 mm wall	100 mm wall
Type A		
Vertical junction	Agglofoam 10 mm plastered	Agglofoam 10 mm plastered
Junction with the floor	Fibreglass AL1 15	Agglofoam 10 mm
Junction with the ceiling	Elasto WP12	Agglofoam 10 mm plus Elasto WP12
Type B		
Vertical junction	Agglofoam 10 mm plastered	Agglofoam 10 mm plastered
Junction with the floor	Fibreglass AL1 15	Agglofoam 10 mm
Junction with the ceiling	Plastered	Agglofoam 10 mm plus plastered

10 Impact resistance

10.1 When tested in accordance with UEAtc guidelines for soft body impacts using a 30 kg sandbag, a partition wall of gypsum blocks of density 950 kgm^{-3} and dimensions of 70 mm (thickness), 2.0 m (width) and 2.7 m (height), produced the following results:
no damage or breakthrough for energy levels equivalent to 60J, 120J, 180J and 240J.

10.2 When subjected to a hard body impact, equivalent to an energy level of 10J, there was no breakthrough.

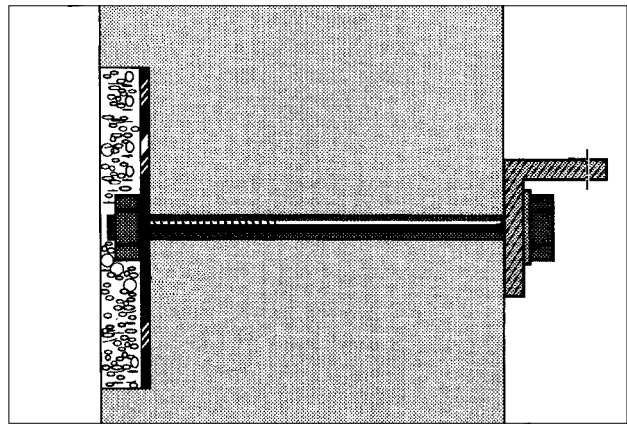
11 Wetting expansion

Testing to examine the relative deformation during and after the absorption of moisture gave average expansions of 10.6×10^{-5} for Promonta Normal, 4.94×10^{-5} for Promonta Heavy and 4.00×10^{-5} for Promhydro.

12 Wall-mounted fittings

An object weight of 15 kg must not be exceeded when hung using framework or similar hooks (5 kg per suspension points). If screws and pins (Fischer type) are used, then the products of the weight of the object to be suspended (expressed in kilogrammes) and the distance from the wall to the application point of the load (expressed in metres) must not exceed 30 kgm. For heavier objects, it is advisable to drill holes through the wall and secure with a steel plate (see Figure 3).

Figure 3 Securing heavy objects



13 Health and safety

Under normal application conditions it is unlikely that the dust produced during sawing and drilling will exceed the occupational exposure limit for gypsum but there is a general duty (defined in HSE Guidance Note EH 44 *Dust : General Principles of Protection* 1997) to reduce exposure to the minimum reasonably practicable.

14 Maintenance

The block finish will require redecorating at the appropriate frequency for conventional internal wall surfaces. Minor damage to the block surface may be made good by the use of a suitable proprietary filler. Major structural damage may require complete runs of partitioning to be removed and rebuilt.

15 Durability

The durability of the materials is satisfactory and provided that the product is used in accordance with the manufacturer's instructions, and is fixed to stable and durable backgrounds by fully-trained operatives, Promonta Gypsum Blocks should have a life equal to that of the building in which they are installed.

Installation

16 General

16.1 Installation should be carried out in accordance with this Agrément Certificate and Promonta NV's instructions.

16.2 Prior to installation of the blocks, the work-area must be protected against wind and rain.

16.3 If the construction is required to achieve the sound reduction index (R_w) given in Table 4, the installation described in this part will need to be adjusted to incorporate the details described in the footnotes to that table.

17 Preparatory work

17.1 Before setting out the wall, it is advisable to remove any unevenness and to clean the loadbearing floor.

17.2 The layout should be carefully planned before installation is commenced to produce the most suitable junction and detail configuration.

17.3 The floor space should be cleared and the position of the partition marked.

17.4 For partition lengths which require reinforcements (refer to Table 2), these reinforcements should be fixed prior to installation.

17.5 At the junction with a plastered wall, a layer of gypsum should be removed and the wall made dust free to enable direct bonding of the gypsum wall to the existing structure.

17.6 Promontine adhesive powder is poured into clean water and left for approximately two minutes before mixing. The mixing is continued until a smooth, consistent paste is achieved. The slurry consistency must be such that the adhesive is extruded at the joints of the blocks during assembly and the joint thickness is minimal. Adhesive that has become too thick must not be used.

18 Procedure

First course

18.1 If the base floor surface is irregular the area under the first course can be levelled using mortar, gypsum or a gypsum adhesive mixture. The first course must be laid absolutely level to prevent subsequent vertical joints from opening.

18.2 Where there is a risk of rising damp, for example on ground floors that are in direct contact with the ground or in damp rooms, a PVC channel-section or a polyethylene sheet is installed beneath the wall. The moisture-barrier must, in all cases, be more than 20 mm above the finished level of the ground (see Figure 4).

18.3 The blocks must be laid with the tongued edge at the top and the 501 mm side vertically. Adhesive is applied to the vertical side and the next block pushed firmly against it using gentle blows from a special, rubber-headed mallet until the excess adhesive is forced out of the joint. The last block in this first course must be sawn to size so that it acts as a keystone. Temporary profiles are installed between the floor and ceiling to provide vertical guides for the gypsum wall to be built against, which are removed following completion of the wall when the adhesive has hardened.

18.4 Prior to laying the second course, the first course must be checked with a spirit level to ensure it is true and, if required, corrected.

Second and subsequent courses

18.5 All surfaces must be free from dust. The first block must be laid to allow proper bonding, with vertical joints staggered (see Figure 5). The blocks must be laid in a tongue-and-groove fashion again in the same manner described in section 18.3 to ensure the excess adhesive is extruded from the joints on both sides of the wall.

18.6 During construction of the wall, the joints are touched up and any damage filled with adhesive.

18.7 Following placement of the second and subsequent courses, the wall must be checked for flatness.

Final course

18.8 The blocks in the top course are sawn so that a joint as small as possible (maximum 20 mm) remains between the wall and the ceiling, which can then be sealed using mounting foam. A final course of blocks can also be laid in a PVC channel-section with a strip of compressible foam. If necessary, it is possible to lay the blocks in the top course with the long side placed vertically.

Junctions with the ceiling

18.9 The joint between the ceiling and the wall is either, injected with polyurethane foam, filled with Elasto WP12 or, made with a strip of compressible foam using a PVC channel-section (see Figure 4).

18.10 Joints with gypsum boarding are closed with a mix of 50% Promontine and 50% gypsum. If a junction is being made with a suspended ceiling, the blocks are extended up to the main soffit, the ceiling panels being joined to the gypsum blocks by a connecting section.

18.11 To reduce, as far as possible, any cracks between the soffit and the joint filling, or between the gypsum block and the joint filling, a thin strip of glass fibre, with or without adhesive, should be placed as strengthening.

Junctions and corners

18.12 Junctions and corners are made using the bonded configurations shown in Figure 5.

Connection to the shell of the building

18.13 Where the shell will be exposed to warping or to temperature variations, it is advisable to provide a moveable or compressive junction strip for the vertical connection (for example a PVC channel-section foam strip or similar).

18.14 The shell's slip joints must always be extended into the wall.

Connection to other elements

18.15 During design, special consideration should be given to:

- the provision of vertical joints at regular intervals (eg every 5 m with a maximum of 8 m), finished as flexible joints. The application of these joints must be compatible with the stability of the wall (see section 7.2).
- providing door openings, preferably for the whole height of the partition wall (see section 18.16).
- a limit to 1/1000 of the range, or 5 mm, the rise of flooring which takes place after the gypsum walls have been put in place as a consequence of creepage, shrinkage and loadbearing capacity.

18.16 For normal timber door frames, the blocks of the first four courses must be laid exactly to the size of the opening or a few centimetres further. If the door openings do not continue completely to the soffit, the fifth course must be placed in such a way that the relevant blocks are supported at each end and they must have temporary supports during further building. Once the adhesive has hardened the door openings are sawn to size. Small lintel heights must be properly catered for and openings wider than 1 m must be strengthened.

Figure 4 Junction details

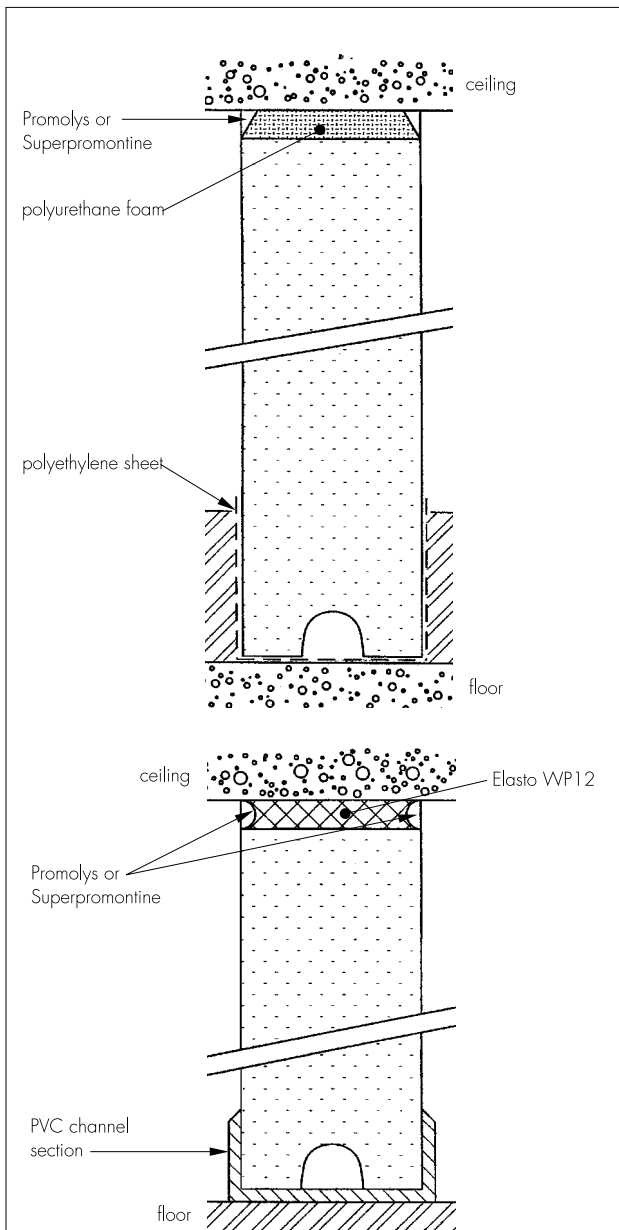
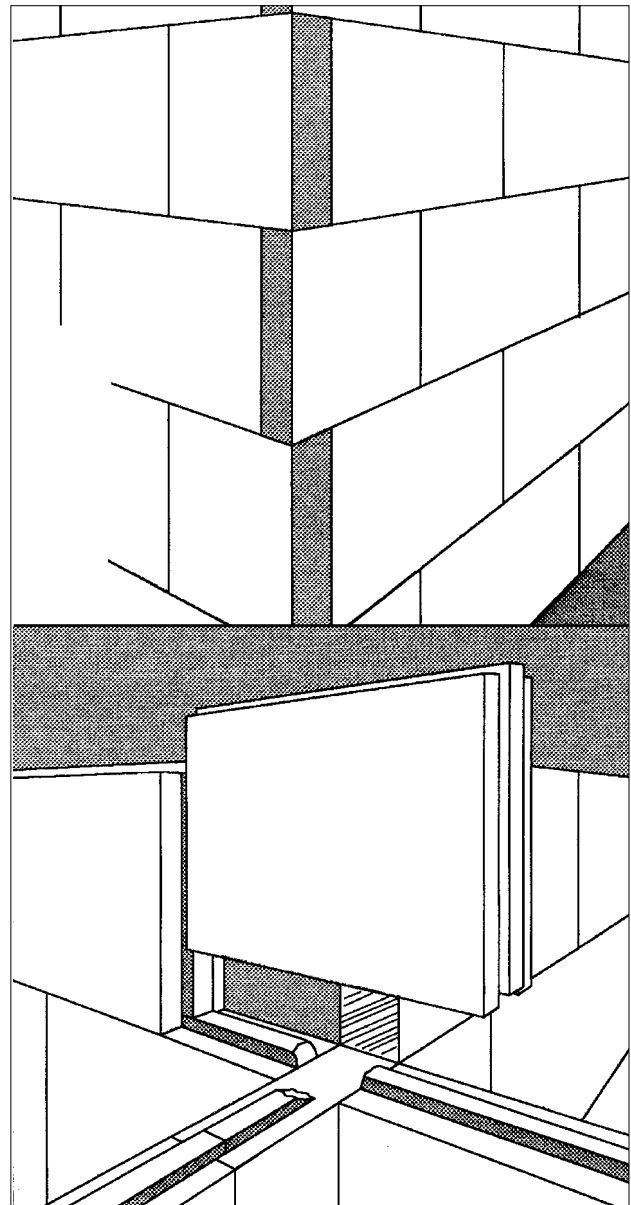


Figure 5 Corner details showing staggering of vertical joints



18.17 Special attention is needed to saw the openings to size for door assembly sets (such as Polynorm types). It is strongly recommended that the lines of the openings to be executed be carried out after the correct levels have been established. Possible tolerances should be determined beforehand.

18.18 Metal door frames are usually placed first. Once they have been placed at right angles, checked for plumb and are level and supported, they are anchored in the block wall. If they are placed afterwards they can still be anchored by filling up the frame with gypsum mortar. Special attention should be given to the adhesion between the gypsum blocks and the mortar, and also to supporting the opening.

Services

18.19 The blocks can be chased for electrical and plumbing conduits, fittings, but this must be carried out with care, with the correct type of tools, such as chasing machines, drills. Crowbars and other tools

causing vibration must not be used. It is advisable to keep to the distances from the wall connections indicated in Figure 6. In walls whose thickness is <math><70\text{ mm}</math>, chasing is not permissible. Reference should also be made to BS 7671 : 2001.

Finishing

18.20 Metal arris strips should be used to protect corners. The corners can be slightly cut away to form a sound base for applying the strips with plaster or adhesive. Subsequent to hardening the corner can be finished properly to give a good surface.

18.21 After all chasing has been completed, the joints finished and any imperfections dealt with, the surfaces left exposed for painting can be given a finishing plaster coat of Promolys or Superpromontine. This must be carried out on a dry, dust-free surface.

18.22 Where the wall is to be painted or wallpapered, this should be carried out in accordance with the relevant manufacturer's

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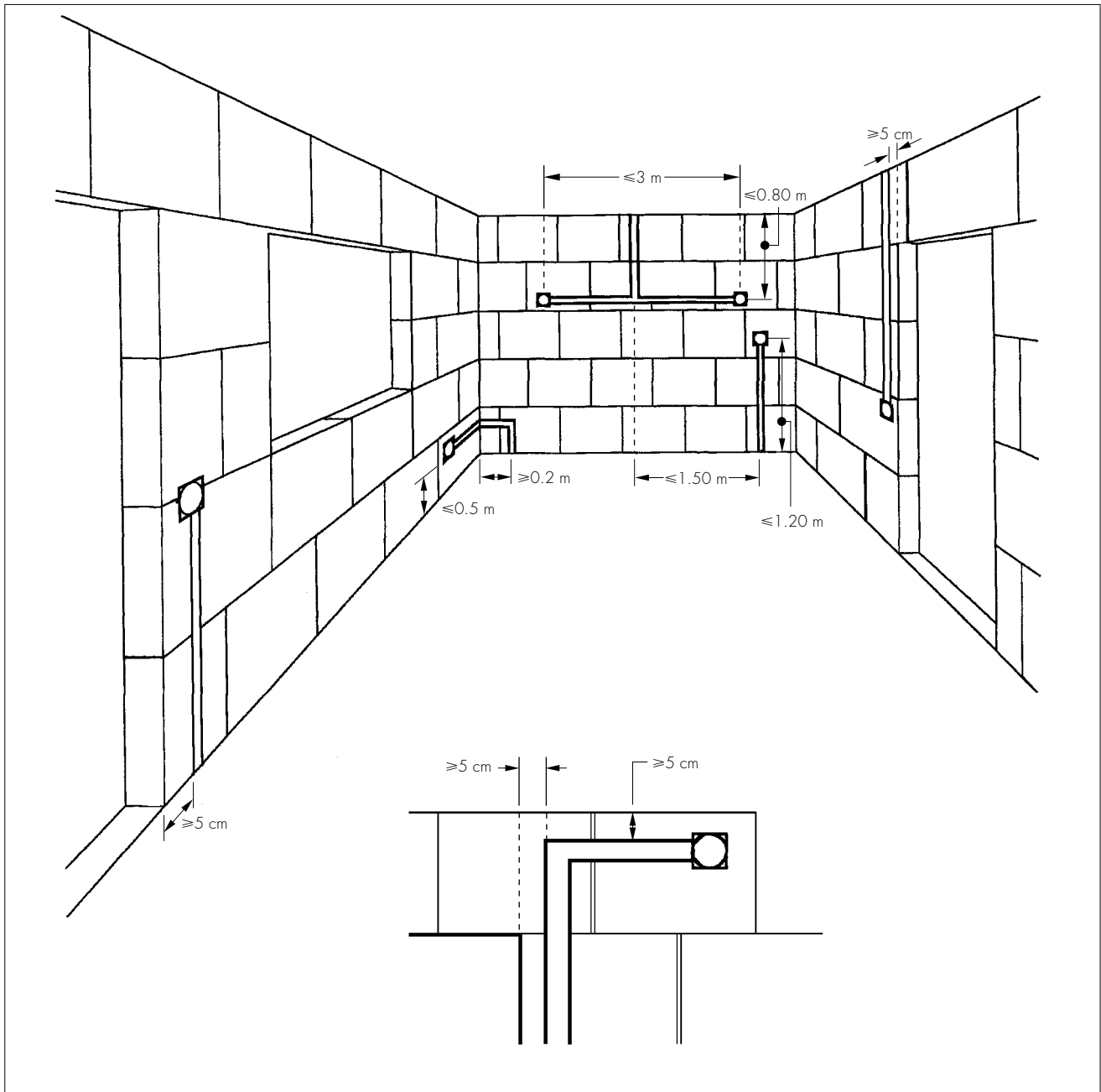
instructions. Normally a primer coat is applied prior to painting.

18.23 Where the wall is to be tiled, the gypsum block wall is not treated with a finishing plaster coat. Advice regarding a suitable tile adhesive for gypsum

surfaces and conditions should be sought from a tile adhesive manufacturer.

18.24 If a liquid flooring is to be applied, the partition wall should be masked during the work.

Figure 6 Distances to be observed when incorporating conduits



Technical Investigations

The following is a summary of the technical investigations carried out on Promonta Normal, Heavy and Promhydro Gypsum Blocks.

19 Tests

An assessment was made of the test data leading to the issue of the Belgian Union for the technical approval in the building industry certificate for the product relating to:

Block

dimensional accuracy, including squareness and accuracy of fit of the tongue-and-groove
moisture absorption of Promhydro blocks
C-Shore hardness
% moisture content (on leaving production plants)
pH
bending strength
compressive strength
wetting expansion
performance in relation to fire
thermal properties.

Walls constructed using the blocks

acoustic properties
performance in relation to fire
impact resistance (soft and hard body).

20 Other investigations

20.1 The manufacturing process was assessed, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

20.2 A site in progress was visited to assess the practicability of installation of the gypsum blocks.

Bibliography

BS 7671 : 2001 *Requirements for electrical installations. IEE Wiring Regulations. Sixteenth edition*

Conditions of Certification

21 Conditions

21.1 This Certificate:

- (a) relates only to the product that is described, installed, used and maintained as set out in this Certificate;
- (b) is granted only to the company, firm or person identified on the front cover — no other company, firm or person may hold or claim any entitlement to this Certificate;
- (c) has to be read, considered and used as a whole document — it may be misleading and will be incomplete to be selective;
- (d) is copyright of the BBA.

21.2 References in this Certificate to any Act of Parliament, Regulation made thereunder, Directive or Regulation of the European Union, Statutory Instrument, Code of Practice, British Standard, manufacturers' instructions or similar publication, shall be construed as references to such publication in the

form in which it was current at the date of this Certificate.

21.3 This Certificate will remain valid for an unlimited period provided that the product and the manufacture and/or fabricating process(es) thereof:

- (a) are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA;
- (b) remain covered by a valid Belgian Agrément; and
- (c) are reviewed by the BBA as and when it considers appropriate.

21.4 In granting this Certificate, the BBA makes no representation as to:

- (a) the presence or absence of any patent or similar rights subsisting in the product or any other product;
- (b) the right of the Certificate holder to market, supply, install or maintain the product; and
- (c) the nature of individual installations of the product, including methods and workmanship.

21.5 Any recommendations relating to the use or installation of this product which are contained or referred to in this Certificate are the minimum standards required to be met when the product is used. They do not purport in any way to restate the requirements of the Health & Safety at Work etc Act 1974, or of any other statutory, common law or other duty which may exist at the date of this Certificate or in the future; nor is conformity with such recommendations to be taken as satisfying the requirements of the 1974 Act or of any present or future statutory, common law or other duty of care. In granting this Certificate, the BBA does not accept responsibility to any person or body for any loss or damage, including personal injury, arising as a direct or indirect result of the installation and use of this product.



In the opinion of the British Board of Agrément, Promonta Normal, Heavy and Promhydro Gypsum Blocks are fit for their intended use provided they are installed, used and maintained as set out in this Certificate. Certificate No 01/3849 is accordingly awarded to Promonta NV.

On behalf of the British Board of Agrément

Date of Second issue: 3rd October 2002

Chief Executive

**Original Certificate issued 6th February 2002 (not published). This amended version includes reference to revised national Building Regulations and ARO acoustic properties test data.*