

## Chemicals for Modern Buildings (CMB)

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**Agreement Certificate**

**09/4687**

Product Sheet 1

### CMB BOARD

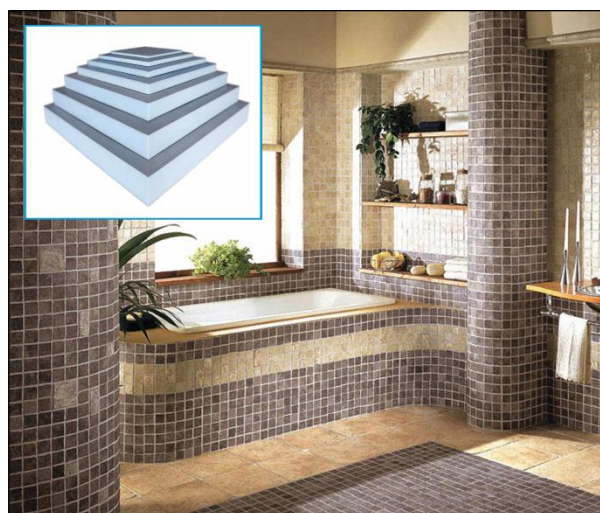
### MARMOX TILEBACKER BOARDS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Marmox Tilebacker Boards, a range of extruded polystyrene foam boards finished on both sides with a polymer-modified mortar facing reinforced with a glass fibre mesh. The boards are for use as an intermediate substrate to ceramic and natural stone tiling for internal use on walls and floors.

(1) Hereinafter referred to as 'Certificate'.

#### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



#### KEY FACTORS ASSESSED

**Performance in relation to fire** — the untiled boards are classified as Class E in accordance with EN 13501-1 : 2007 (see section 6).

**Impact resistance** — tiled boards will resist the effects of the normal impacts expected in service (see section 7).

**Floor loading** — the boards are satisfactory for use in domestic and residential applications (see section 8).

**Condensation risk** — the use of the boards will reduce the risk of condensation (see section 10).

**Durability** — under normal conditions, the boards will have a service life commensurate with the structure in which they are installed (see section 15).



The BBA has awarded this Certificate to the company named above for the products described herein. These products have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Date of Third issue: 10 June 2019

John Albon  
Chief Scientific Officer

Claire Curtis-Thomas  
Chief Executive

Originally certificated on 17 September 2009

*The BBA is a UKAS accredited certification body – Number 113.*

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at www.bbacerts.co.uk  
Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.  
Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

#### British Board of Agrément

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## Regulations

In the opinion of the BBA, Marmox Tilebacker Boards, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



### The Building Regulations 2010 (England and Wales) (as amended)

**Requirement:** B2(1)

Comment:

**Internal fire spread (linings)**

The use of the products will be restricted under this Requirement. See sections 6.1 and 6.2 of this Certificate.

**Requirement:** C2(c)

Comment:

**Resistance to moisture**

Walls incorporating the products can satisfy this Requirement. See section 10 of this Certificate.

**Regulation:** 7

**Regulation:** 7(1)

Comment:

**Materials and workmanship (applicable to Wales only)**

**Materials and workmanship (applicable to England only)**

The products are acceptable. See section 15 and the *Installation* part of this Certificate.

**Regulation:** 7(2)

Comment:

**Materials and workmanship (applicable to England only)**

The products are restricted by this Regulation. See sections 6.1 and 6.3 of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

**Regulation:** 8(1)

Comment:

**Durability, workmanship and fitness of materials**

The products are acceptable. See section 15 and the *Installation* part of this Certificate.

**Regulation:** 9

Standard: 2.5

Comment:

**Building standards applicable to construction**

Internal linings

The use of the products will be restricted under this Standard, with reference to clauses 2.5.1<sup>(1)(2)</sup> and 2.5.2<sup>(1)(2)</sup>. See sections 6.1 and 6.2 of this Certificate.

Standard: 3.15

Comment:

Condensation

The products can contribute to satisfying this Standard, with reference to clauses 3.15.1<sup>(1)</sup>, 3.15.4<sup>(1)</sup> and 3.15.5<sup>(1)</sup>. See section 10 of this Certificate.

Standard: 7.1(a)

Comment:

Statement of sustainability

The products can contribute to meeting the relevant requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.

**Regulation:** 12

Comment:

**Building standards applicable to conversions**

All comments given for the products under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1<sup>(1)(2)</sup> and Schedule 6<sup>(1)(2)</sup>.

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(a)(i)(iii)(iv)(b)(i)</b>	<b>Fitness of materials and workmanship</b>
<b>Comment:</b>		The products are acceptable. See section 15 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>29</b>	<b>Condensation</b>
<b>Comment:</b>		The products are acceptable. See sections 10.1 and 10.2 of this Certificate.
<b>Regulation:</b>	<b>34(a)(b)</b>	<b>Internal fire spread — Linings</b>
<b>Comment:</b>		The products satisfy this Regulation. See sections 6.1 and 6.2 of this Certificate.

## Construction (Design and Management) Regulations 2015

## Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See sections: 1 *Description* (1.2) 3 *Delivery and site handling* (3.1 and 3.2) and 16 *General* (16.2) of this Certificate.

## Additional Information

### NHBC Standards 2019

In the opinion of the BBA Marmox Tilebacker Boards, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Part 9 *Finishes*, Chapters 9.2 *Wall and ceiling finishes* and 9.3 *Floor finishes*.

## Technical Specification

### 1 Description

1.1 Marmox Tilebacker Boards are made from extruded polystyrene, each side faced with a nominal 0.75 mm thick polymer-modified cement mortar reinforced with a glass fibre mesh.

1.2 The boards are available in the sizes given in Table 1.

**Table 1 Nominal dimensions and weights**

Thickness (mm)	Board dimensions <sup>(1)</sup> (width x length) (mm)	Weight per board (kg)
4	600 x 1250	2.3
6	600 x 1250	2.4
10	600 x 1250	2.7
	600 x 2500	5.4
12.5	600 x 1250	2.8
	600 x 2500	5.6
	1200 x 2400	11.0
20	600 x 1250	3.1
	600 x 2500	6.2
	1200 X 2400	12.2
30	600 x 1250	3.4
	600 x 2500	6.8
40	600 x 1250	4.0
	600 x 2500	8.0
50	600 x 1250	4.2
	600 x 2500	8.4
60	600 x 1250	4.5
	600 x 2500	9.0

(1) Boards with other dimensions are available by special order.

### 1.3 Ancillary items used with the boards include:

- Marmox Fixings Washers — 38 mm diameter metal washers or 40 mm diameter plastic washers and screws, for fixing the boards to the substrate. Screws used should be at least 20 mm longer than the board thickness to be fixed
- Marmox Reinforcing Tape — a self-adhesive, glass fibre mesh tape for application over joints between boards.

### 1.4 Other items or components for use with the products, but outside the scope of this Certificate, are:

- flexible waterproof tile adhesive conforming to BS EN 12004 : 2007
- flexible waterproof grout conforming to BS EN 1338 : 2003
- Marmox Self-Adhesive Waterproof Tape — for application over joints between boards when used in wet areas
- Marmox Wall Brackets — for connecting boards to the wall or floor
- Marmox Joint Bracket — for joining boards together in line on a stud wall frame
- Marmox Perpendicular Brackets — for holding two boards perpendicular while the adhesive is drying
- Marmox 60 or 90 mm Dowel Fixings — for fixing boards to solid surfaces when use of adhesive is inappropriate
- fungicidal wash.

Details of suitable products/specifications may be obtained from Marmox UK Ltd.

## 2 Manufacture

2.1 The products are manufactured by cutting extruded polystyrene insulation blocks to the required thickness, screeding a polymer-modified mortar compound on both faces whilst embedding a glass mesh reinforcement, and drying by passing through an in-line oven at a controlled temperature.

2.2 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated

- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.3 The management system of Chemicals for Modern Buildings (CMB) has been assessed and registered as meeting the requirements of BS EN ISO 9001 : 2015 by SGS SSG Egypt (Certificate 20100183003872).

2.4 The boards are manufactured by the Certificate holder and marketed in the UK as Marmox Multiboard by Marmox UK Ltd, Caxton House, 101-103 Hopewell Drive, Chatham, Kent ME5 7NP, tel: 01634 835290, fax: 01634 835299, website: www.marmox.co.uk

### **3 Delivery and site handling**

3.1 The long boards (2500 mm) are delivered loose on pallets and short boards (1250 mm) are supplied in cardboard boxes. The quantity supplied in each box will vary with the thickness of the boards.

3.2 The boards should be stored flat, under cover and on a dry, level surface, away from extremes of temperature and sources of contamination.

3.3 The advice of Marmox UK Ltd should be sought with regard to the storage of accessories.

## **Assessment and Technical Investigations**

The following is a summary of the assessment and technical investigations carried out on Marmox Tilebacker Boards.

### **Design Considerations**

#### **4 General**

4.1 Marmox Tilebacker Boards are satisfactory for use on internal walls and floors as an intermediate substrate to ceramic and natural stone tiling.

4.2 The boards are suitable for use as part of a system comprising tiles, waterproof cement-based tile adhesive and grout to install a stable, waterproof tile substrate in showers and wet areas. Marmox UK Ltd should be consulted for suitable products.

4.3 The boards may also be used to produce various kinds of substructure, such as bath surrounds and partitions. Marmox UK Ltd should be consulted for advice on the products' suitability for any proposed project.

4.4 The boards may be directly bonded to clean, sound brick, block or concrete walls and may also be used fully supported on concrete floors or suspended timber floors.

4.5 Boards 10 mm thick or greater can also be fixed to stud walling/partitions. The maximum unsupported span must be 300 mm for boards less than 20 mm thick and 600 mm for boards 20 mm or more thick.

4.6 Masonry walls of new buildings should be designed and constructed in accordance with the relevant parts of PD 6697 : 2010, BS EN 1996-1-2 : 2005 and BS EN 1996-2 : 2006. External walls of existing buildings should be in good condition and resist the penetration of moisture to the internal face.

4.7 When the boards are fixed to timber battens, services can normally be incorporated in the void behind the boards, making chasing of the wall unnecessary. When using adhesive systems, or where the services have a greater depth than the void, the wall should be chased rather than the boards. It is recommended that services penetrating the boards, eg light switches and power outlets, are kept to a minimum.

4.8 The installation of the boards requires careful detailing around doors and windows to achieve a satisfactory finish. New work should be designed to accommodate the thickness of the overall installation.

4.9 If present, mould or fungal growth on the substrate should be treated prior to fixing the boards. Marmox UK Ltd should be consulted for suitable anti-fungal products.

4.10 When using adhesive fixing methods, it is essential to establish, before installation, that a satisfactory bond can be achieved between the wall and the adhesive. If difficulty is experienced with adhesion, advice should be sought from Marmox UK Ltd.

## 5 Practicability of installation

Installation is intended to be carried out by a competent general builder, or a contractor, experienced with these types of products.

## 6 Performance in relation to fire



6.1 When tested in accordance with BS EN ISO 11925-2 : 2010 and classified in accordance with BS EN 13501-1 : 2007, an untiled 10 mm thick board achieved Class E and consequently will be restricted in use under the national Building Regulations.

6.2 The reaction to fire classification of tiled boards may be different and it is important to select a finish that will provide the fire performance required by the documents supporting the national Building Regulations for an specific installation.



6.3 The panels should not be used on buildings in England that have a storey at least 18 m above ground level and contain; one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

6.4 Recessed lighting must not be used with the boards.

## 7 Impact resistance

Impact tests were conducted on a complete tiled assembly. Soft body impacts did not result in any discernible damage. Hard body impacts resulted in tile damage directly under the impact with minor indentation into the board but without tile detachment. The damage observed was no greater than that to be expected in tiled boards of this type.

## 8 Floor loading

8.1 For design purposes, the compressive strength of the boards at 10% compression should be taken as  $400 \text{ kN}\cdot\text{m}^{-2}$  [Level CS(10)400 as defined in BS EN 13164 : 2012].

8.2 The boards are capable of resisting a uniformly distributed load of  $1.5 \text{ kN}\cdot\text{m}^{-2}$  with minimal deflection.

8.3 The level of resistance to concentrated loads will depend on the size and strength of the tiles used to cover the boards.

8.4 Provided the tiles selected are correctly specified to resist the designed distributed and concentrated loads, the boards are suitable for use in Categories A1 and A2 as defined in the UK National Annex to BS EN 1991-1-1 : 2002, Table NA.2.

## 9 Thermal insulation

The boards will provide thermal insulation. For calculation purposes, Marmox UK Ltd should be consulted for thermal conductivity characteristics of the boards.

## 10 Condensation

### Interstitial condensation



10.1 The boards can offer significant resistance to water vapour transmission, provided all joints and penetrations are taped and sealed and the tiling is bonded and grouted in accordance with the Certificate holder's instructions.

10.2 When carrying out condensation risk assessments, the water vapour transmission factor ( $\mu$ ) of the untiled boards may be taken as 106.

### Surface condensation



10.3 Walls incorporating the products can be designed to satisfy the requirements of the national Building Regulations with regard to surface condensation.

## 11 Impact noise reduction

The use of the boards can reduce noise resulting from impacts. Laboratory tests in accordance with BS EN ISO 140-8 : 1998 carried out on the 10 mm board gave a Weighted Impact Sound Improvement Index ( $DL_w$ ) of 21 dB.

## 12 Proximity of flues and heat producing appliances

When installing boards in close proximity to hot flue pipes and/or heat-producing appliances, the provisions of the following national Building Regulations must be followed to minimise the risk of damage to the boards due to radiated, convected and/or conducted heat:

**England and Wales** – Approved Document J

**Scotland** – Mandatory Standard 3.19<sup>(1)(2)</sup>

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).

**Northern Ireland** – Technical Booklet L.

## 13 Wall-mounted fittings

Objects other than lightweight items must be fixed through the boards into the wall behind using suitable proprietary fixings. The recommendations of Marmox UK Ltd should be followed.

## 14 Maintenance

As the products are confined within the wall structure and have suitable durability (see section 15), maintenance is not required. However, any damage occurring before tiling must be repaired (see section 18).

## 15 Durability



Provided the products are used and installed in accordance with this Certificate and the Certificate holder's instructions and fixed to a satisfactory, stable and durable backgrounds, they will have a life commensurate with the structure in which they are installed.

### 16 General

16.1 Marmox Tilebacker Boards are for installation on internal walls and floors to provide a substrate for the application of ceramic and natural stone tiles.

16.2 The boards can be cut with either a hand knife or saw. When working in enclosed areas, precautions should be taken to ensure dust levels are controlled in accordance with the current issue of EH40/2005. Marmox UK Ltd should be consulted for advice.

16.3 Installation of the boards must be in accordance with the Certificate holder's instructions and the provisions of this Certificate.

16.4 Short boards (1250 by 600 mm) are the most suitable for installing on floors.

16.5 Boards must not bridge movement joints. These must be carried through the board/tile bed and sealed in an appropriate manner.

16.6 The boards are laid in a staggered pattern to ensure that four corners never meet at one point.

16.7 In wall applications, the boards may be aligned vertically or horizontally.

16.8 When boards are fixed using adhesive, tests must be carried out to ensure adequate adhesion can be achieved. The advice of Marmox UK Ltd must be sought.

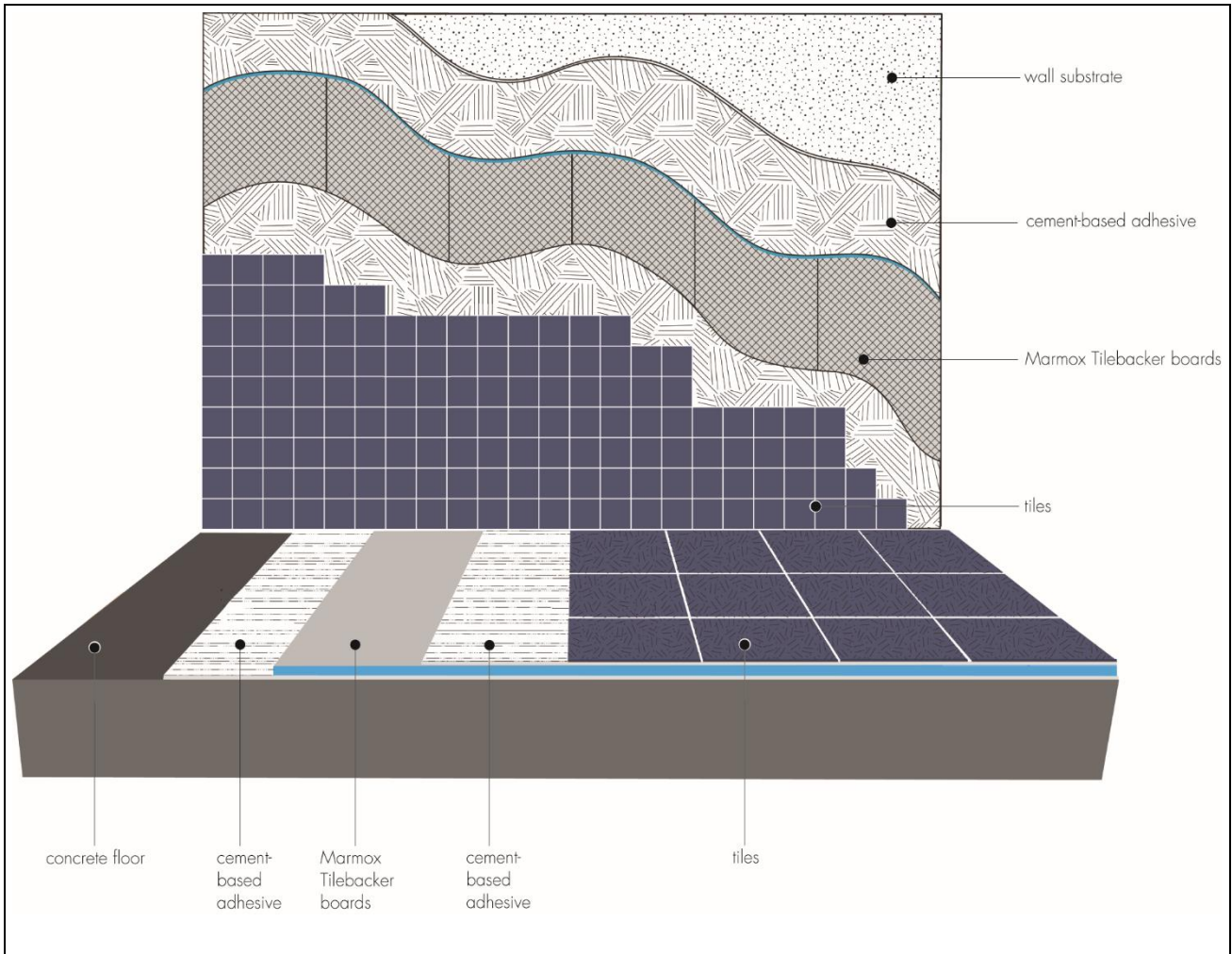
### 17 Procedure

#### Fixing to solid walls

17.1 Boards may be fixed to smooth and level masonry and concrete walls using a thin, solid bed of cementitious tile adhesive (see Figure 1). The advice of Marmox UK Ltd must be sought on suitable products.



Figure 1 Fixing to solid walls and floors using adhesive



17.2 Any residual materials from previous coatings must be removed.

17.3 If the wall is slightly uneven, contaminated or incompatible with the recommended adhesive in some other way, the boards can be mechanically fixed in accordance with the method for fixing to stud walls (see sections 17.7 to 17.11).

17.4 The adhesive is applied to either the wall or the boards at an approximate thickness of 6 mm, and combed out using an 8 mm notched trowel in straight lines, ensuring complete coverage.

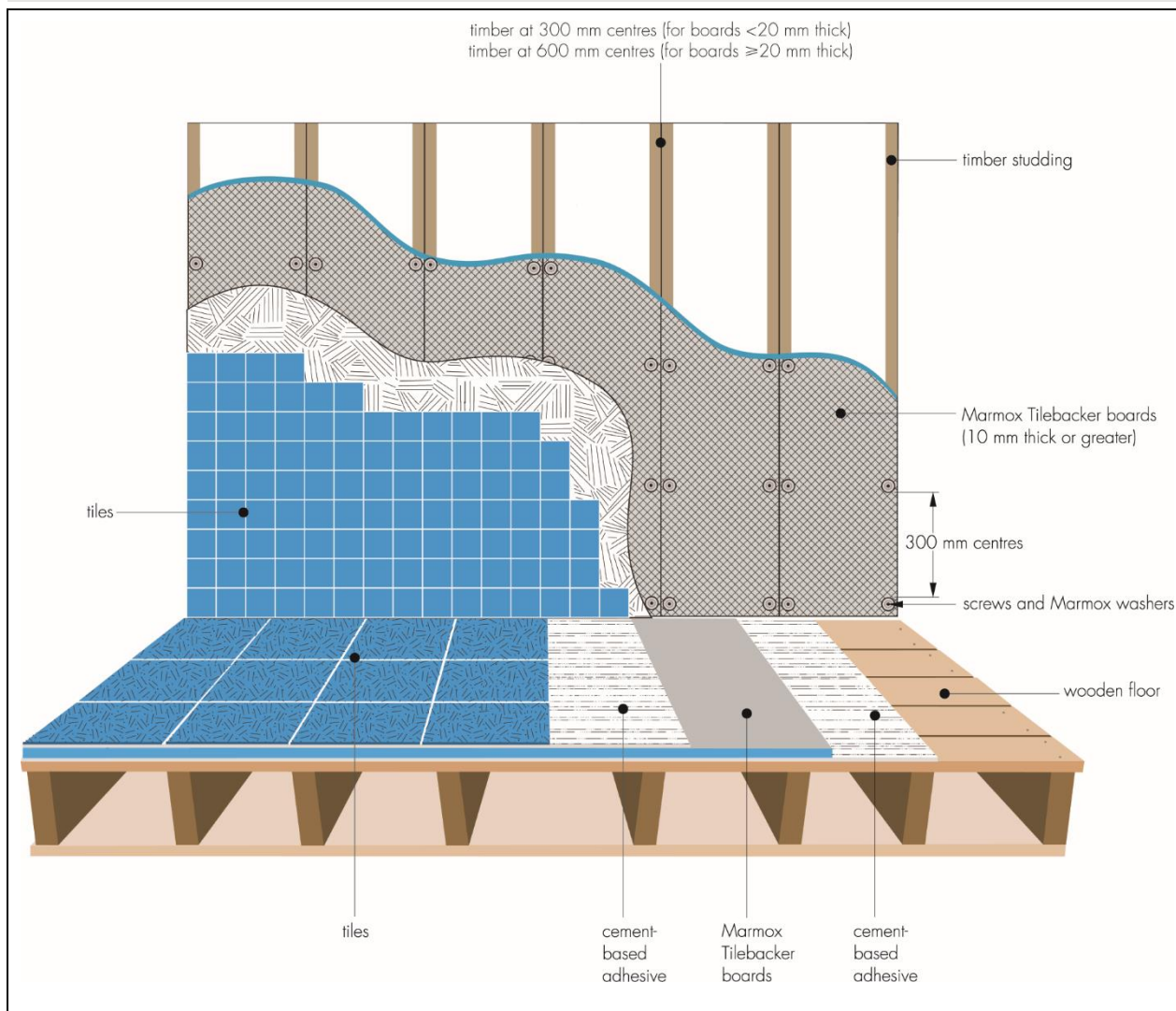
17.5 Starting at the bottom of the wall, the boards are placed in position and tamped evenly over the entire surface to ensure complete contact. Subsequent boards are fixed in place in the same manner without any gaps between adjacent boards.

17.6 When the adhesive is set, the joints between the boards are taped with Marmox Reinforcing Tape.

#### Fixing to stud walls

17.7 Boards 10 mm thick and greater can be mechanically fixed onto timber or metal studding (see Figure 2). The maximum unsupported span must be 300 mm for boards less than 20 mm thick and 600 mm for boards 20 mm or more thick.

Figure 2 Fixing to stud walls and floors using screws and washers



17.8 The boards are fixed using Marmox Fixing Washers with appropriate screws at least 20 mm longer than the thickness of the board to be fixed. The fixings should be placed at least 20 mm from the edge of the board and screwed tight so that the washer is reasonably flush with the board surface.

17.9 All board edges must be supported.

17.10 Fixings should be applied to each supporting timber at approximately 300 mm centres.

17.11 The joints between the boards are taped with Marmox Reinforcing Tape.

#### Fixing to concrete and other solid floors

17.12 A suitable flexible cementitious adhesive is applied to the prepared floor in a straight line using a notched trowel.

17.13 Starting in a corner, the boards are laid in a brick bond pattern, leaving a gap of about 5 mm between the board and wall/skirting to allow for expansion.

17.14 The joints between the boards are taped with Marmox Reinforcing Tape.

#### Fixing to wooden floors

17.15 The floor must be flat and secure before fixing the boards.

17.16 The boards are fixed in accordance with the method described for fixing the boards to concrete and other solid floors (see sections 17.12 to 17.14). However, a 10 mm gap should be left between the boards and the wall/skirting to allow for expansion of the floor.

17.17 Alternatively, provided the floor is flat, boards at least 10 mm thick can be mechanically fixed using the Marmox Fixings Washers and suitable screws. At least 15 fixings per short board (600 x 1250 mm) must be used when not using an adhesive.

17.18 Joints between boards are taped with Marmox Reinforcing Tape.

#### **Installation to surfaces exposed to water**

17.19 Joints between boards used in areas that may be exposed to water must be sealed using a waterproof tape instead of the reinforcing tape or suitable sealant. Marmox UK Ltd must be consulted for suitable products.

#### **Tile fixing**

17.20 The surface of the boards must be free from dust and other contamination that may adversely affect adhesion of the tiles.

17.21 Tiles are fixed to the board using a suitable flexible cement-based tile adhesive applied in accordance with the manufacturer's instructions, BS 8000-11 : 2011 and the relevant parts of B BS 5385.

17.22 When fixing to floors, tiles should be a minimum of 50 by 50 mm in size, and a solid-bed fixing technique used to ensure that voids do not remain under the tiles. A solid-bed fixing technique should also be used on surfaces likely to be exposed to water.

17.23 Once the tile bed has hardened sufficiently, joints between tiles can be grouted using a suitable cement-based flexible waterproof grout.

17.24 Marmox UK Ltd must be consulted for suitable adhesives and grouts.

## **18 Repair**

In the event of damage, repairs can be carried out by replacing damaged boards and tiles in accordance with the relevant parts of section 17.

## **Technical Investigations**

## **19 Tests**

Tests were conducted on Marmox Tilebacker Boards and the results assessed to determine:

- dimensional accuracy
- impact resistance of tiled<sup>(1)</sup> boards (soft and hard body)
- flexural strength of wet and dry samples
- pull-through strength of fixings
- bond strength of ceramic tiles to boards<sup>(1)</sup>
- compression strength
- compressive creep.

(1) Using Ardex-Flex 6001 and Norcros Rapid Porcelain Tile adhesives with Ardex-Flex FS waterproof grout.

## **20 Investigations**

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

20.2 An assessment was made of the risk of interstitial condensation using the water vapour transmission properties of the extruded polystyrene component of the board.

20.3 Visits were made to sites in progress to assess practicability of installation.

20.4 A user survey of existing installations was carried out to establish performance in use.

20.5 An assessment was made of test reports relating to:

- surface spread of flame
- fire propagation
- reaction-to-fire classification
- thermal conductivity
- transmitted impact noise.

## Bibliography

BS 5385 *Walls and floor tiling*

BS 8000-11 : 2011 *Workmanship on building sites — Internal and external wall and tiling — Ceramic and agglomerated stone tiles, natural stone and terrazzo tiles and slabs, and mosaics — Code of practice*

BS EN 1338 : 2003 *Concrete paving blocks — Requirements and test methods*

NA to BS EN 1991-1-1 : 2002 *UK National Annex to Eurocode 1: Actions on structures — General actions — Densities, self-weight, imposed loads for buildings*

BS EN 1996-1-2 : 2005 *Eurocode 6: Design of masonry structures — General rules — Structural fire design*

BS EN 1996-2 : 2006 *Eurocode 6: Design of masonry structures — Design considerations, selection of materials and execution of masonry*

BS EN 12004 : 2007 + A1 : 2012 *Adhesives for tiles — Requirements, evaluation of conformity, classification and designation*

BS EN 13164 : 2012 *Thermal insulation products for buildings — Factory made extruded polystyrene foam (XPS) products — Specification*

BS EN 13501-1 : 2007 + A1 : 2009 *Fire classification of construction products and building elements — Classification using data from reaction to fire tests*

BS EN ISO 140-8 : 1998 *Acoustics — Measurements of sound insulation in buildings and of building elements — Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a heavyweight standard floor*

BS EN ISO 9001 : 2015 *Quality management systems — Requirements*

BS EN ISO 11925-2 : 2010 *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Single-flame source test*

EH40/2005 *Workplace exposure limits*

PD 6697 : 2010 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

### 21 Conditions

#### 21.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim that this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

21.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

21.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

21.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

21.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

21.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.