



RECENT CHANGES TO BS 5385: Part 1:2018





Types of Standards

- **Codes of Practice**

recommend sound good practice currently undertaken by competent and conscientious practitioners. Drafted to incorporate a degree of flexibility in application, whilst offering reliable indicative benchmarks

- **Methods**

highly prescriptive, setting out an agreed way of measuring, testing or specifying what is reliably repeatable in different circumstances and places, wherever it needs to be applied

- **Guides**

published to give less prescriptive advice which reflects the current thinking and practice amongst experts in a particular subject

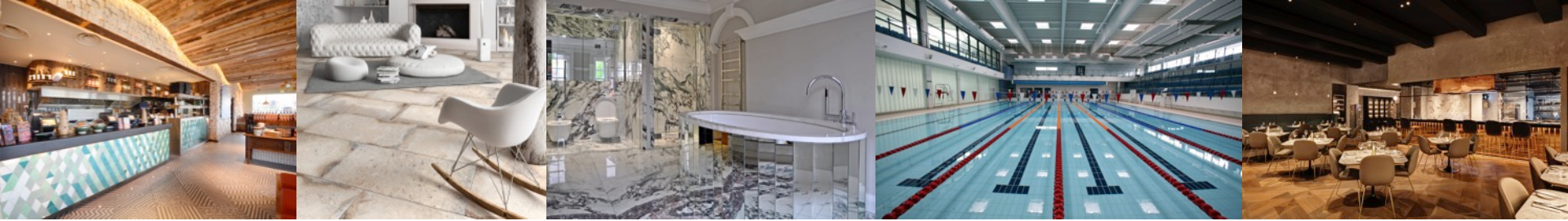




Why Update Standards?

- Keep up to date with product innovation
e.g. thin porcelain, ceramic panels etc
- Modern substrates
Reflects trends in backgrounds e.g. tile backing boards, exclusion of wood based substrates
- Reflect changes in Standards documentation/legislation
- Updated every 5 to 8 years





Organisations Represented on BSI

TTA (The Tile Association)

RIBA (Royal Institute of Architects)

BRE (Building Research Establishment)

HSE (Health and Safety Executive)

Stone Federation Great Britain/British Slate Association

FERFA (Resin Flooring Association)

BASA (British Adhesives & Sealants Association)

BCRL (British Ceramic Research Ltd)

CFA (Contract Flooring Association)

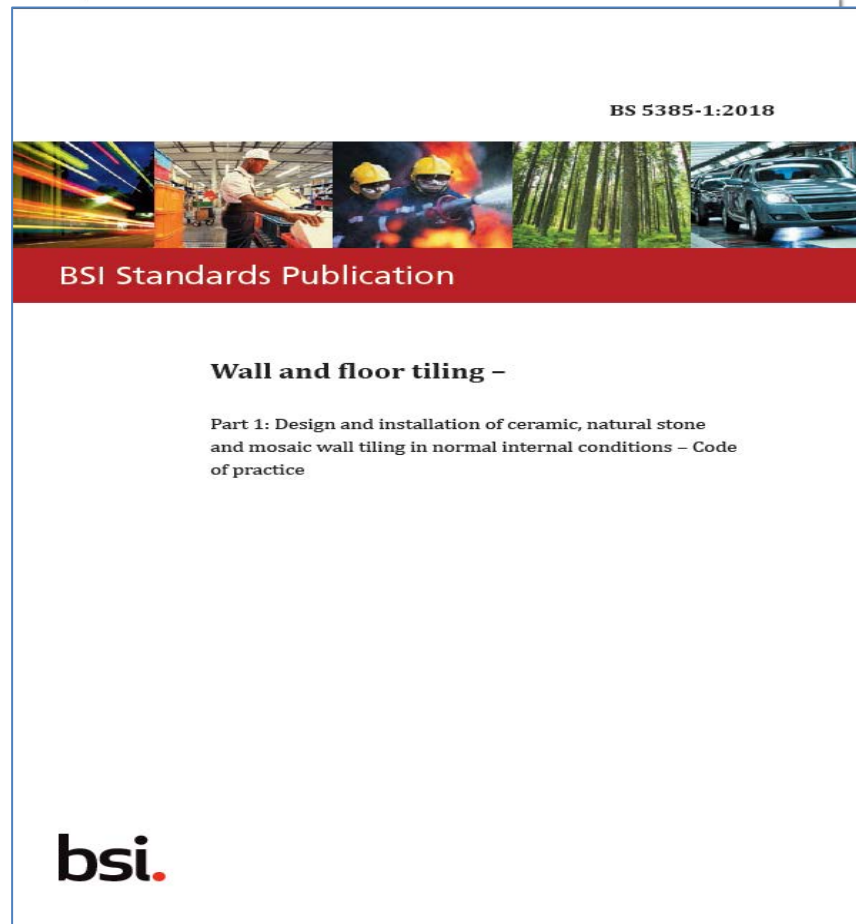
ICWCI (Institute of Clerk of Works and Construction Inspectorate of Great Britain)

NFTMMS (National Federation of Terrazzo Marble & Mosaic Specialists)





BS 5385: Part 1:2018





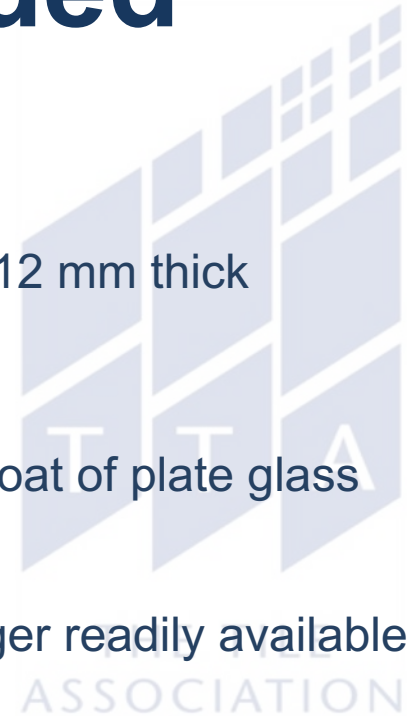
Scope of the Standard





Scope - Not Included

- **The scope of BS 5385-1:2018 does not include:**
 - Natural stone slabs e.g. units with nominal thickness > 12 mm thick
 - Agglomerated stone tiles and slabs
 - Metal, plastic, resin or mirror tiles (manufactured from float of plate glass with an applied backing) and glass tiles
 - Ceramic tile fittings i.e. corner and edge pieces (no longer readily available)





Ceramic Tile Definitions

The definition of ceramic tiles and panels which fall within the scope of this standard are as follows:

3.5 Ceramic tile

ceramic tile with a surface area $\leq 3\ 600\text{ cm}^2$, no tile edge $> 600\text{ mm}$

3.6 Large format ceramic tile

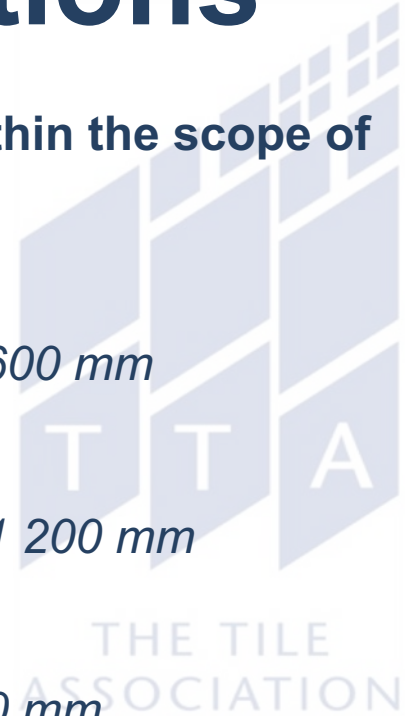
ceramic tile with a surface area $> 3\ 600\text{ cm}^2$, no tile edge $> 1\ 200\text{ mm}$

3.7 Ceramic panel

ceramic tile with a surface area $> 1\text{ m}^2$, any tile edge $> 1\ 200\text{ mm}$

3.8 Thin tile

ceramic tiles and panels with a panel thickness of $\leq 5.5\text{ mm}$





Mechanical Fixing Above 3m





Mechanical Fixing

BS 5385-1:2018

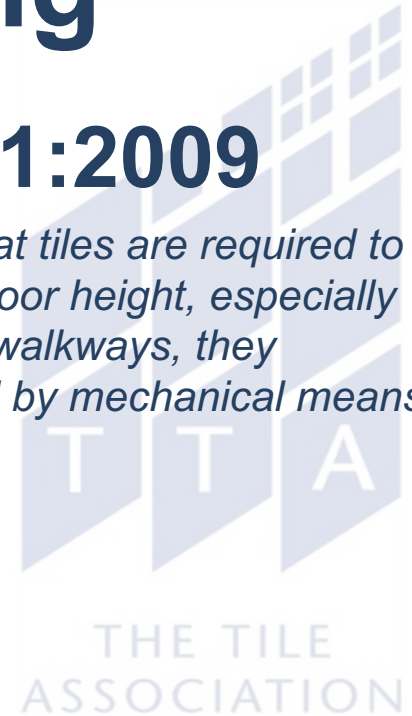
'Tiles >0.1 m² required to be fixed above 3 m from floor level are required to be secured by mechanical fixings'

Clause 5.3.2 Natural stone tiles

'Some stone tiles may have mesh resin bonded to the rear face; unless at least 75% can be removed, the stone tiles should be mechanically fixed'

BS 5385-1:2009

'Where large format tiles are required to be fixed above first floor height, especially above pedestrian walkways, they should be secured by mechanical means'





Mechanical Fixing

- Tiles $>0.1 \text{ m}^2$ are required to be fixed above 3 m from floor level are required to be secured by mechanical fixings
- In *clause 6.1.1.3 Tanking* “ *If mechanical fixings are to be used the membrane manufacturer should be consulted*“



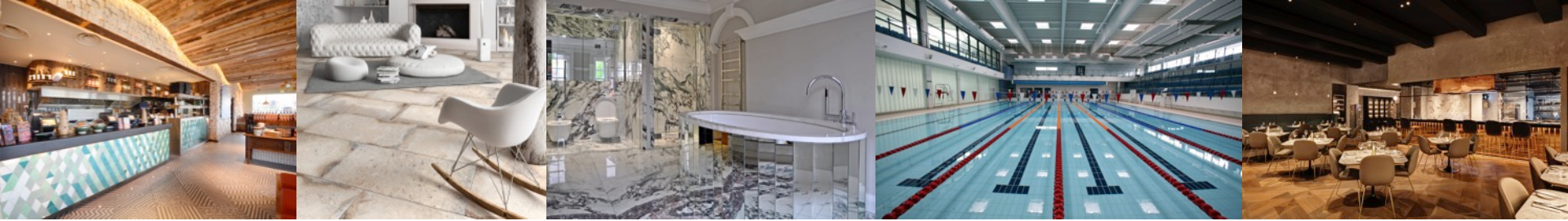


Table 5 – Backgrounds: Summary of Suitable Tile Beds





Blockwork/Brickwork

Not suitable for direct fixing with tile adhesives.

e.g. Backgrounds which cannot be classified as SR1 without an intermediate background include;

- High density clay brickwork
- Dense concrete (precast or in situ)
- Clay brick/blockwork
- Concrete (natural aggregate)
- Concrete brick/blockwork
- Autoclaved blockwork and lightweight aggregate concrete with open or closed surface
- Autoclaved aerated concrete
- Calcium silicate brickwork (soft)
- No-fines concrete brickwork





Tiling To Plywood Walls





Plywood Walls – BS 5385-1:2009

BS 5385-1: 2009 advised previously that:

“The use of sheets or boards that are subject to movement from changes in moisture content should be avoided if at all possible”

And:

“When such boards (plywood board, chipboard, some fibre building boards) have to be used, they should be restricted to small areas etc.”





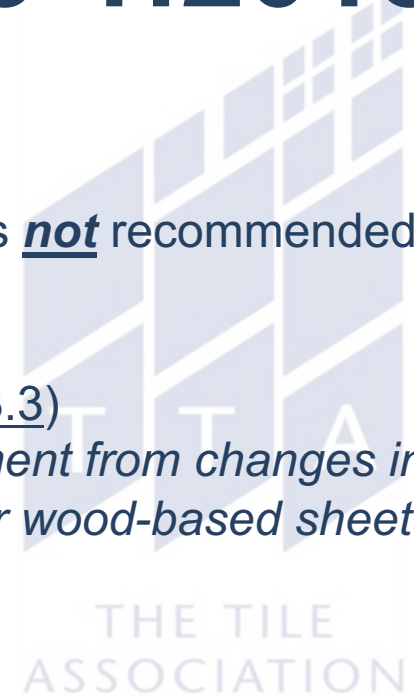
Plywood Walls - BS 5385-1:2018

- **Direct Tiling to Plywood Walls**

Direct fixing of tiles to walls constructed from plywood is **not** recommended in BS 5385-1: 2018

Clause 6.1.2.7 Other sheets and boards (see also [6.2.3.3](#))

“The use of sheets or boards that are subject to movement from changes in moisture content should be avoided. Plywood and other wood-based sheets or boards should not be used for direct tiling”





Tile Adhesive Coverage vs Tile Size





Adhesive Coverage & Tile Size

BS 5385-1:2018 (New)

Clause 6.2.3, Sub-clause 6.2.3.1

'Tiles with a surface area of 0.1 m² or greater, should be solidly bedded.

Tiles with a surface area of less than 0.1 m², but which weigh more per square metre than 70% of the background's capacity to carry the weight, should be solidly bedded e.g. the maximum weight of tile that can be supported by Gypsum plaster = 20 kg; whereas 9 mm thick porcelain tiles, which weigh approximately 18 kg/m², weigh more than 70% of 20 kg (14 kg) therefore, they should be solidly bedded regardless of their size'.

BS 5385-1: 2009 (Previous Version)

Clause 7.2.1.5

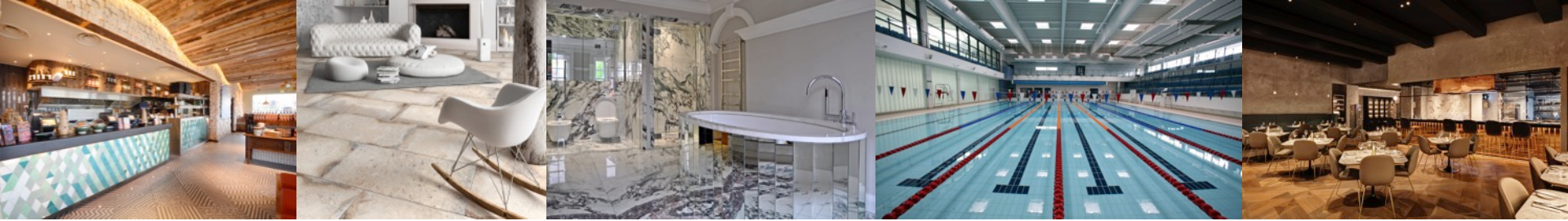
.... 'this gives a series of ribs into which the dry tile should be pressed with a twisting or sliding action; this operation has to be carried out correctly to ensure that the adhesive wets the back of the tile and achieves an area of contact of at least 50%, spread evenly over the back of the tile'.



Tile Adhesive Coverage

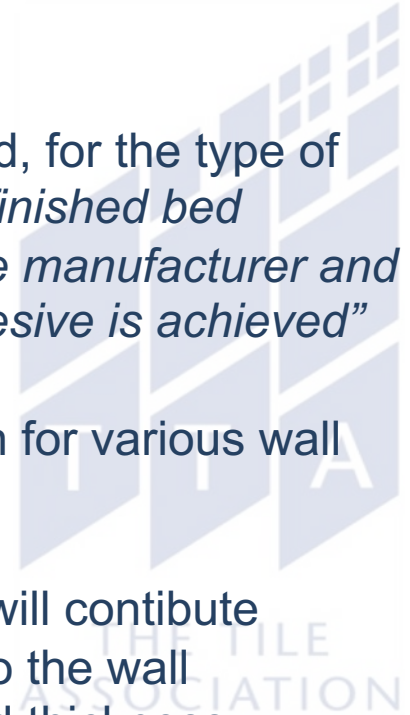
- A minimum 50% contact area for the tile adhesive will not provide sufficient bond strength and, therefore, enough restraint with large format tiles and thin ceramic tiles/ panels
- BS 5385-1: 2018 recommends for large format tiles and ceramic panels, and tiles with ribbed, deep keyed or heavily buttoned back profiles, the tile adhesive should be applied using the floating and buttering method i.e. a thin coating of adhesive buttered over the backs should fill the deep keys before placing the tiles in position on the combed adhesive bed





Please Note

- In the new clause 7.2.1.5.1 Notched trowelling method, for the type of trowel used. *“it should apply the adhesive so that the finished bed thickness is no greater than that recommended by the manufacturer and that maximum practical contact between tile and adhesive is achieved”*
- Include weight of tile adhesive in the weight restriction for various wall backgrounds
- A cementitious based tile adhesive mixed with water will contribute approximately 4.0 to 5.5 kg/m² of additional weight to the wall background when applied in a solid bed at a 3mm bed thickness





Waterproof Tanking





Waterproof Tanking

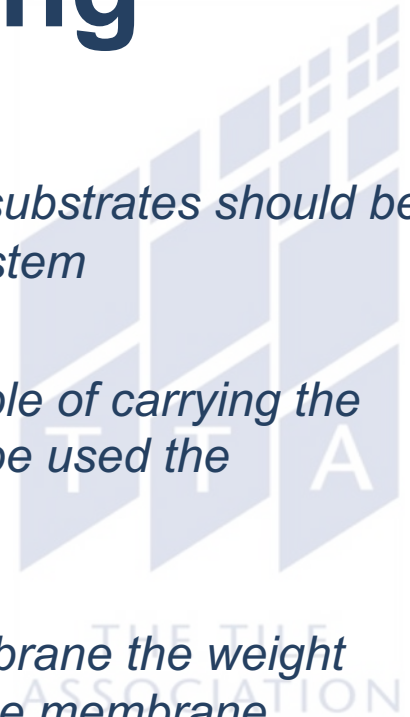
6.1.1.3 Tanking

'In wet areas, e.g. showers, wet rooms and steam rooms, substrates should be protected with a suitable proprietary tanking membrane system

The weight capacity of the tanking system should be capable of carrying the load of the tiles and adhesive. If mechanical fixings are to be used the membrane manufacturer should be consulted

Where the substrate is to be protected with a tanking membrane the weight restrictions of the installation might be reduced therefore the membrane manufacturer should be consulted

NOTE This can be a proprietary sheet membrane or a liquid applied water impermeable product'





Waterproof Tanking

- **6.1.2.9 Gypsum plaster**

‘Gypsum plaster is suitable for most internal wall tiling applications, but should not be used in wet areas unless additional protection in the form of a waterproofing tanking system is used’

- **6.2.3.2 Tile backer boards**

‘A tanking system should be used for boards used in wet areas, e.g. showers and wet rooms’

- **6.2.3.4 Plasterboards**

‘NOTE Plasterboard, including moisture resistant plasterboard, is generally unsuitable for wet areas unless additional protection in the form of a waterproofing tanking system is used, see BS 5385-4 for further guidance for wet conditions’





Workmanship

For the first time the standard recognises in clause 7.1.3 that:

“The application of ceramic or natural stone wall tiling demands efficient supervision of properly trained operatives, skilled to an appropriate level of competence certified by a recognized authoritative body, e.g. The Tile Association, working safely using protective clothing and equipment where necessary”

This statement is also repeated in clause 8.1.3 relating to mosaic installation





NHBC Specifications 2018

“Backing surfaces for tiling should;

- Be moisture resistant, where frequent wetting occurs*

When Tiling;

- Proprietary water-resistant grouting should be used in accordance with the manufacturer*

“Grouting should be:

- As specified in the design including mix and colour*
- Cement-based, epoxy resin or a proprietary product*
- ‘Waterproof in and around shower enclosures and where tiling can be saturated’.*

Gypsum plaster should not be used where;

- ‘Repeated or persistent wetting may occur’*





The Tile Association

For information on all aspects of
The Tile Association please contact:

Tel: 0300 365 8453

Web: www.tiles.org.uk

