

# ***TOP**FLOW SCREED BELITEX*

## SOLUTION GUIDE LITE



# INTRODUCTION

Topflow Screed C Belitex is a cement based free flowing screed that can deliver improvements in sustainable performance when used in place of conventional sand and cement screeds. These improvements can only be achieved if they are considered as part of the solution to deliver whole life performance during a building's design phase. This guide highlights some of these benefits.



## PROGRAMME ENHANCEMENT

In comparison to conventional sand cement screeds and anhydrite screeds Topflow Screed C Belitex delivers reliability and improvements to construction programmes. Drying times exceed those expected from conventional sand cement screeds as moisture is sealed after 14 days<sup>1</sup>. This minimises further moisture loss and shrinkage removing the risk of damage to subsequent floor finishes if they are applied prior to complete drying. Screed C Belitex provides many of the benefits associated with anhydrite screeds, but without the extended drying times which mitigates the risk of programme disruption. In both cases the utilisation of this solution enables follow on trades to commence sooner with reduced risk.

## FAST TRACKING OF CONSTRUCTION

Self-compacting screeds can significantly improve construction speeds as they employ a simplified placement methodology, can be delivered on demand and without the requirement for onsite mixing or space for storage. The flowing nature of self-compacting screeds mean that they require less manual manipulation in placement, with time intensive activities of screeding and tamping associated with a conventional screeds avoided. These properties enable up to 120m<sup>2</sup> to be placed per hour compared to 100 to 150m<sup>2</sup> per day for sand and cement screeds. Combined with the assurances that can be provided on programme delivery opportunities can be exploited to reduce project times and associated overheads.

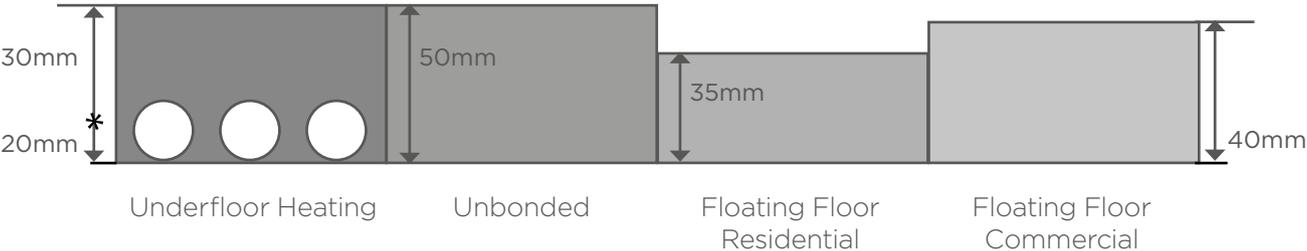
## HOMOGENEITY

The flowing nature of a self-compacting screed enables it achieve full compaction without the need for external energy input guaranteeing homogeneity and offering improvements in quality and longevity<sup>2</sup>. The quality of conventional sand and cement screeds are dependent on the skill and physical strength of the operative carrying out placement and it is inherently difficult to determine level and quality of compaction. Inadequate and poor compaction can result in defects that require additional remedial activities and if undetected can have a detrimental effect on lifespan.

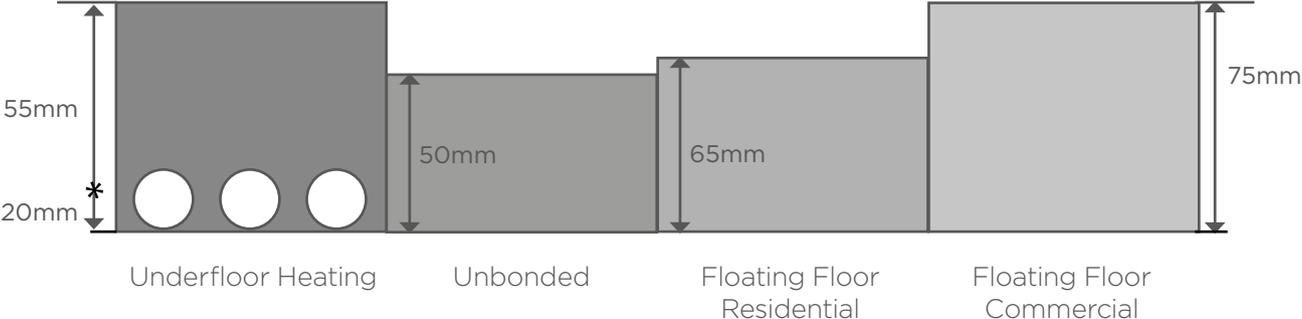
## MATERIAL EFFICIENCY

Topflow Screed C Belitex can be laid thinner than conventional sand and cement screeds enabling a reduction in material quantities and those materials used to go further, minimising demands on resources. The need for a self-levelling screed associated with conventional screed is removed due to the SR2 quality finish that can be achieved minimising additional materials and resource depletion.

# TOPFLOW SCREED C BELITEX - SCREED THICKNESS



# SAND AND CEMENT - SCREED THICKNESS



## EFFECTIVENESS OF UNDERFLOOR HEATING

Underfloor heating solutions offer improvements in the thermal comfort of building occupants compared to traditional heating systems whilst utilising lower energy supply systems<sup>3,4</sup>. The increased thermal conductivity of Topflow Screed C Belitex (1.7 W/mK compared to 1.1 W/mK) and reduced cover requirements for pipework enables and the system to react faster to occupant demands and the maintaining of thermal comfort<sup>5</sup>. Guaranteed homogeneity increases the effectiveness as any air pockets can act as barriers to slow heat transfer (air thermal conductivity is 0.024 W/mK), delivering benefits in operational efficiency<sup>6,7</sup>.

## RESPONSIBLE SOURCING

Tarmac has been independently certified achieving a 'Very Good' rating for all its production sites and products in line with the BES 6001 Responsible Sourcing of Construction Products standard<sup>9</sup>. This accreditation provides assurance that Tarmac implements high standards in the sustainable procurement of resources throughout its supply chain and production processes.

## SIMPLIFIED CONSTRUCTION

The selection of a flowing screed over a conventional sand and cement screed simplifies the construction process removing the screeding and compaction processes<sup>8</sup>. These traditional activities are labour intensive and can be undertaken for an extended periods of time, with flowing screeds a simplified less intensive finishing process is employed undertaken in a more natural stance, reducing health and safety risks.

## LOW SHRINKAGE

A lower shrinkage than conventional sand and cement screeds enables areas of up to 250m<sup>2</sup> to be constructed without the requirement for jointing. This offers reductions in joint maintenance requirements, an increased flexibility in floor covering options but also reduces on site activities and materials required to create joints.

# BREEAM

Tarmac products can support and demonstrate their sustainable credentials by contributing to the awarding of credits in the BREEAM scheme, the following table details key areas where credits can be awarded<sup>10</sup>.

CREDIT	SUPPORT
Man 03: Responsible Construction Practices	Tarmac's Carbon Calculator has the capability to determine and provide data relating to the CO2 arising from the delivery transport.
Mat 03: Responsible Sourcing of Materials	Ready-mixed products are primarily constituted of locally available materials. All ready-mixed products produced by Tarmac are BES 6001 accredited.
Mat 01: Life Cycle Impacts	We have a range of products and solutions which match or can be tailored to match and satisfy specifications linked in the Green Guide. We are also able to provide EPD to support the awarding of further credits.



## REFERENCES

- 1 Tarmac Topflow Screed C Belitex Data Sheet  
<http://tarmac.com/media/956489topflow-screed-c-belitex-data-sheet.pdf>
- 2 Casting of Self Compacting Concrete: Final report of RILEM Technical Committee 188-CSC: Casting of Self Compacting Concrete, Skarendahl, A. and Billberg, P. (2006)  
RILEM REPORT 35, RILEM Publications Bagneux,France
- 3 Underfloor Heating Manufacturers Association - Underfloor Heating  
[www.beama.org.uk/en/energy/underfloor-heating/](http://www.beama.org.uk/en/energy/underfloor-heating/)
- 4 The Energy Saving Trust - Choosing a renewable Technology  
[www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology](http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology)
- 5 Health and Safety Executive - Thermal Comfort  
[www.hse.gov.uk/temperature/thermal/index.htm](http://www.hse.gov.uk/temperature/thermal/index.htm)
- 6 Self-compacting Concrete: a review,  
Technical Report No.62,Report of a joint working group, The Concrete Society and BRE, Camberley, Surrey, UK.  
The Concrete Society/Building Research Establishment (BRE) (2005)
- 7 Tarmac Solution Guide - Underfloor Heating with Thermally Conductive Screeds  
<http://tarmac.com/solution-guides/underfloor-heating/>
- 8 From reactive to proactive: quantifying on-site benefits of self-compacting concrete (SCC),  
Rich, D. (2013). Loughborough University
- 9 Green Book Live  
[www.greenbooklive.com/search/scheme.jsp?id=153](http://www.greenbooklive.com/search/scheme.jsp?id=153)
- 10 Tarmac Solution Guide - The Role of Construction Materials in BREEAM  
<http://tarmac.com/solution-guides/BREEAM>





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