

CI/SfB
(47)   (Nf2)

July 2014

# Forticrete<sup>®</sup> roofing

Redefining traditional products<sup>™</sup>



## *Gemini*<sup>®</sup> Interlocking Twin Plain Tile

The roofing tile that has caused a revolution



ST0109/1



COND



## Double cambered plain tile appeal at pitches down to 22.5°

Gemini® Sunrise Blend at  
Barratt Homes, Waters  
Edge, Stourport on Severn,  
Worcestershire.

Gemini® is a true innovation in roof tile design. With its 'double cambered' design, this interlocking concrete tile, gives the appearance of traditional plain tiles when laid.

### Front cover

Gemini® Mixed Russet at  
Davidsons Homes, Church  
Gresley, Derbyshire.



Because of Gemini's design, fewer tiles are required to cover the same area as a conventional double lapped plain tile. This innovative product assists in reducing the build cost, and helps to reduce the environmental impact by reducing the amount of quarried aggregate used, and haulage movement per laid m<sup>2</sup>.



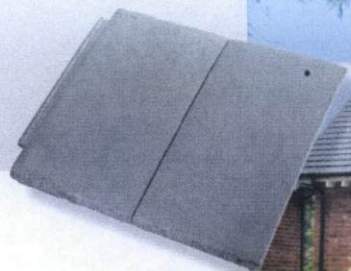
Scan the QR code with your  
smartphone for instant access  
to our Gemini® products.

## New build housing

New home builders have discovered the benefits that Gemini® can give them in improving kerb appeal, whilst increasing the flexibility of their design options at much reduced costs compared to plain tiles.

Developers, self-builders and planning authorities recognise Gemini's ability to match local vernaculars and add aesthetic appeal.

For example, the Mixed Russet and Sunrise Blend colours enable builders to achieve a clay plain tile appearance with significant savings on materials and labour, in addition to the considerable environmental benefits.



Gemini® Slate Grey with bonnet hips at Penny Long Lane, Derby.



Gemini® Mixed Russet at David Wilson Homes, Biggleswade, Bedfordshire.



Gemini® Jacobean at Redrow Homes, Calne, Wiltshire



## Commercial

Gemini® suits both modern and traditional building design. DWA Architects looked to the Forticrete Gemini® for a new multi-million pound, 105 bed care home in Kettering, to complement the 19th century architecture of a Grade II Listed Victorian villa which lies on the grounds. As project architects, DWA Architects required a roofing solution that would blend in with the handmade clay plain roof tiles on the 19th Century building. The Rustic colour and characteristics of Forticrete's Gemini® roof tile provided the answer they were looking for.

Gemini® Jacobean at Cloverleaf Restaurants, Willington, Derbyshire.



Gemini® Rustic at Avery Care Home, Kettering, Northamptonshire.

## Social housing - *New Build*



Gemini® Autumn at Banner Homes, Abingdon, Oxon.

New social housing developments need to achieve a higher standard of build quality, and Gemini® can deliver these requirements in all aspects. Gemini® tiles were selected on this site

to provide a traditional plain tile finish that complemented the local area and planning requirements. As the tiles are interlocking they speed up the roofing program so that scaffolding can be dropped sooner allowing access for other trades to complete their work.

## Social housing - *Re-roofing*

Gemini® is equally as cost-effective for refurbishment as for new build.

Local Authorities and Housing Associations throughout the country have discovered that their budgets will stretch much further when using Gemini® as the re-roofing solution compared to plain tiles.

Derby City Council, Wansbeck District Council, Harrogate Borough Council, Northampton Borough Council and the London Boroughs of Ealing and Greenwich are just some of the authorities who have worked alongside Forticrete to replace tired and defective roofs with complete, modern Gemini® tile systems.

Wolverhampton City Council re-roofing scheme using Gemini® Red and associated Dry Fix system.



This Decent Homes programme in Gateshead successfully incorporated the Gemini® in Mixed Russet as part of a re-roofing scheme. This enhanced the dwellings' appearance whilst maintaining the character of a plain tiled roof.



Before re-roofing



After re-roofing

## The award winning tile that's helping developers, planners and the environment

- Aesthetic appearance of a traditional plain tile when laid
- Only 16.3 tiles per m<sup>2</sup> (60 for plain tiles)
- 40% CO<sub>2</sub> saving in manufacture compared to concrete plain tiles
- Greater roof area covered per load delivered = reduced CO<sub>2</sub>
- 20% fixing labour savings in comparison to plain tiles
- 30% reduction in weight
- 42% timber savings on roof battens
- 6% timber savings on roof trusses
- Lays to lower pitches – 22.5° (plain tiles 35°)
- Thin leading edge
- Hidden fixings including tile clip
- Full range of dry-fix fittings and ventilation products
- Kitemarked to BS EN 490:2011
- 60 year product integrity guarantee
- Registered design



Gemini®



Plain Tile

### Accreditations

- Gemini® holds the quality Kitemark BS EN 490
- Forticrete is certified to the International Environmental Standard BS EN ISO 14001:2004
- BES6001 for Responsible Sourcing of Construction Products – all seven factories are rated as either good or very good
- We operate to BS EN ISO 9001 for Quality Management
- A+ BREEAM Rating – assessment method for sustainable buildings
- Building Confidence certified, the standard for supplier excellence

### Available in 8 colours



Sunrise Blend (Pre-blended)



Mixed Russet (Pre-blended)



Jacobean (Made to order)



Red



Autumn



Brown

### Guarantee

The integrity of the tile carries a 60 year product Integrity Guarantee from date of supply, subject to the company's normal terms. Forticrete Roofing Products policy is one of continuous improvement and the Company reserves the right to change specifications and designs at any time without notice.

Roof tiles and slates may become scuffed during transportation or installation. This does not affect the performance of the products and the appearance will improve with weathering in due course.

Tile colours may change over time due to weathering. **Where an exact colour match is required, you are advised to view several tile samples.**



Slate Grey



Black (Made to order)



Gemini® qualifies as an ECOTILE® PLUS under Forticrete's unique marking scheme, signifying that it conforms to a specified range of environmental criteria.

# Gemini® tile dimensions and specifications

	Gemini® tile	RH three quarter tile	LH three quarter tile	Universal tile and half	Lo-vent tile*
Overall Length:	270mm	270mm	270mm	270mm	270mm
Hanging Length (L <sub>1</sub> ):	243mm	243mm	243mm	243mm	243mm
Overall Width (w):	337mm	260mm	235mm	495mm	337mm
Cover Width (Cw):	316mm	235mm	235mm	470mm	316mm
Mass (approx):	2.8kg	2.2kg	2.1kg	4.3kg	0.6kg
Free Vent Area:	-	-	-	-	7855mm <sup>2</sup>

**Note:** Bonded double tiles may be required for hip and valley details. These tiles are available on request. \* Registered design no. 2096657

Designation:  
T - EN490 - IL - 0 - RF - 316 - / - / - 243 - 2,8

## Gemini® Clipping & Nailing

The exposure and location of the site will determine the overall Fixing Specification. Site specific fixing specifications are available on request from the Technical Department.

- Statutory requirement - all tiles are nailed
- Nail size 45mm x 3.35mm - Smooth or Ring shank nail depending on the exposure or location of the site
- Batten size: 38 x 25mm for rafter spans up to 450mm, 50 x 25mm for rafter spans up to 600mm
- It is a minimum requirement that the second course up from the eaves should also be secured with a Gemini® Tile Clip as shown in Fig 1. Additional clipping may be required depending on the site exposure

- All verge tiles are to be fixed with a Gemini® Verge Clip as shown in Fig 2 unless using Gemini® individual Dry Fixed Verge Units
- Small cut sections of unsupported tiles should be replaced with cut Tile and Halves
- Forticrete recommends the use of positive ventilation in roof spaces in accordance with BS 5250:2002
- All perimeters of the roof should be clipped
- All sites covered by the NHBC should comply with Technical document 7.2 Roofing and the tile manufacturer's recommendations

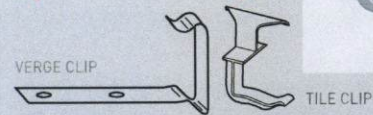
Forticrete recommends the use of dry vented ridge in conjunction with eaves ventilation.

### Fixing of Gemini® Clip:

The Gemini® Clip is not mechanically fixed to the batten, but clips on to the tile interlock (at point A). The clip is then slid down (to point B) and the curved underlock (C) locates under the back of the tile below (D).

Fig 1

Fig 2



### Mortar Free Dry Fixed Products - other accessories:

Dry Fixed Ridge, Low Vent Tiles (Flush Fitting), Dry Fixed Verge, Eaves Vent packs, Dry Fixed 1/3 Round Hip, Tile Clips, Dry Fixed Bonnet Hips, Verge Clips, Dry Fixed Mitred Valley, Tile Replacement Clip

Pitch	Headlap	Batten spacing	Batten required	Tiles required	Mass (approx)
22.5° - 29.5°	80mm min 95mm max	190mm max 175mm min	5.26 lin m/m <sup>2</sup> 5.70 lin m/m <sup>2</sup>	16.6/m <sup>2</sup> 18.1/m <sup>2</sup>	47kg/m <sup>2</sup> 51kg/m <sup>2</sup>
30° - 70°	75mm min 95mm max	195mm max 175mm min	5.13 lin m/m <sup>2</sup> 5.70 lin m/m <sup>2</sup>	16.3/m <sup>2</sup> 18.1/m <sup>2</sup>	45kg/m <sup>2</sup> 51kg/m <sup>2</sup>

**Note:** All leadwork should be installed in accordance with BS EN 12588:2006 and information supplied by the Lead Sheet Association.

## Working procedures, safety & general precautions

Tiles should be fixed in accordance with the current version of BS:5534 at the time of installation. Forticrete recommend that fixers of all slates and tiles regard the products as fragile as stated in BS8000:Pt6:1990 Section 5. During installation of the products, the correct setting out and working procedures should be employed to avoid walking directly on to products which have been fixed or are on any completed area of a roof. Should it be necessary to gain access via the roof where battens of adequate strength cannot be used as footholds, this should not be attempted without the use of adequate protection to the tiles or slates including the required number of crawling boards, ladders and cat ladders.

Please note that where there is a change of pitch, packing may be required between crawling boards, cat ladders and the surface of the tiles or slates to avoid damage to the product. Fixers should note that Forticrete do not recommend the practice of cutting tiles or slates in-situ. Other information can be obtained from the Health and Safety in Roof Work publication HSG33 and in the 'Working on Roofs' publication INDG284. Reference should also be made to the Forticrete Technical Literature and Fixing Instructions.

Order your *Gemini*® from:

Approved stockist

### Gemini® Roofing Systems & Technical enquiries:

Forticrete Limited,  
Boss Avenue, off Grovebury Road,  
Leighton Buzzard,  
Beds LU7 4SD

Tel: 01525 244900

Fax: 01525 850432

E-mail: roofing@forticrete.com

Forticrete, Gemini, Ecotile and the E device are registered trademarks of Forticrete Ltd.  
CRH is a registered trademark of CRH plc.

All relevant Forticrete products are CE marked. Declarations of Performance are available at www.forticrete-ce.com

This document does not form part of any contract and Forticrete cannot accept liability for any errors or omissions.

In order to maintain its position as a market leader, Forticrete operates a policy of continuous product development and therefore reserves the right to alter specifications without notice.

Although the instructions contained in this publication and any other information published by Forticrete are believed to be accurate at the date of publication, they are strictly for guidance only and Forticrete accepts no liability in relation to their use or for any losses, howsoever caused. You are responsible for taking all reasonable steps to ensure your use of the goods/products conforms to all applicable health and safety requirements from time to time. If in doubt, please consult appropriately qualified persons. All products sold by Forticrete are sold subject to Forticrete's Terms and Conditions of Sale, a copy of which is available on request.



www.forticrete.co.uk

Forticrete is a CRH Company

# Forticrete® roofing

© Forticrete Ltd. 2014. All rights reserved.

