

 **Forticrete**<sup>®</sup> roofing  
Redefining traditional products<sup>™</sup>



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

The roofing tile that has  
caused a revolution







## 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>.

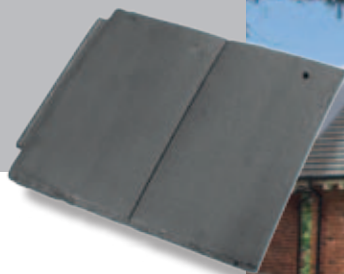


## New build housing

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.



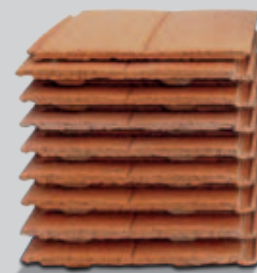
Before re-roofing



After re-roofing

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

- Aesthetic appearance of a traditional plain tile when laid
- Lays to lower roof pitches – 22.5° (plain tiles 35°)
- Only 16.3 to 18.1 tiles per m<sup>2</sup> (60 for plain tiles)
- Hidden Tile Fixings
- Full Range of Dry Fix systems available
- Full Range of Ventilation Products
- Over 40% less timber battens required compared to plain tiles
- Lighter than plain tiles per m<sup>2</sup>
- Thin leading edge
- 40% CO<sub>2</sub> saving in manufacture compared to concrete plain tiles



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
- BES 6001 for Responsible Sourcing of Construction Products – all seven factories are rated as 'very good'
- We operate to BS EN ISO 9001 for Quality Management
- A+ BREEAM Rating – assessment method for sustainable buildings
- Achilles BuildingConfidence certified. The standard for supplier excellence

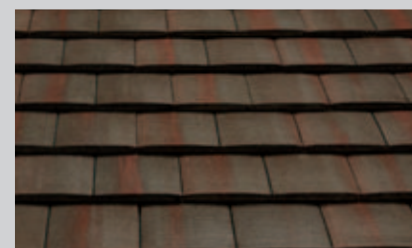
## Available in 10 colours



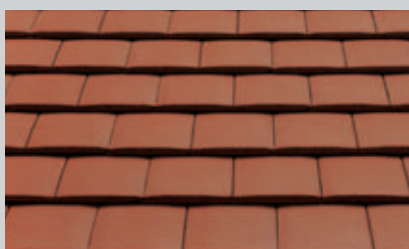
Sunrise Blend (Pre-blended)



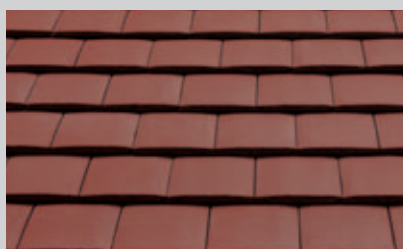
Mixed Russet (Pre-blended)



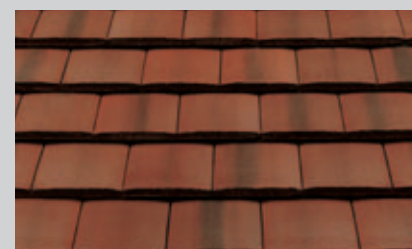
Jacobean



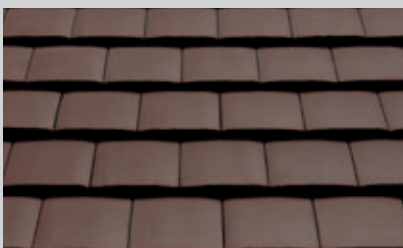
Red



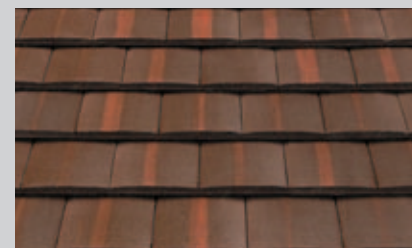
Rustic (Made to order)



Autumn



Brown

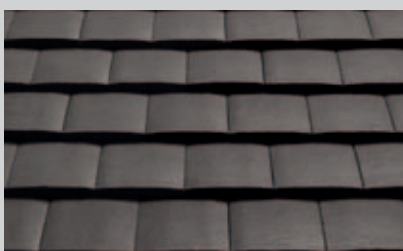


Brindle (Made to order)

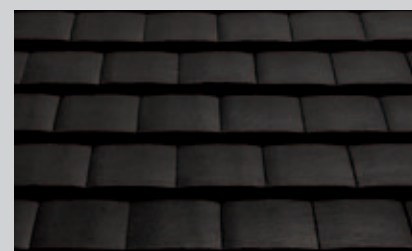
Tile colours may change over time due to weathering. Where an exact colour match is required, you are advised to view several tile samples.



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




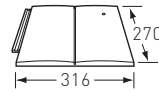
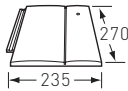
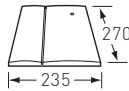
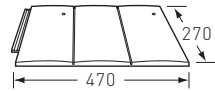
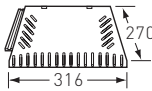
Slate Grey



Black



# Gemini® tile dimensions and specifications

					
	<b>Gemini® tile</b>	<b>RH three quarter tile</b>	<b>LH three quarter tile</b>	<b>Universal tile and half</b>	<b>Lo-vent tile*</b>
Overall Length:	270mm	270mm	270mm	270mm	270mm
Hanging Length (L <sub>1</sub> ):	243mm	243mm	243mm	243mm	243mm
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® standard fixing specification

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.

- All tiles are nailed
- Nail size 45mm x 3.35mm - Smooth or Ring shank aluminum nail depending on the exposure 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

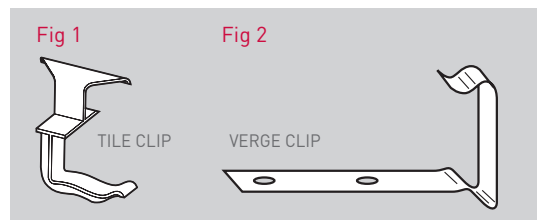
- All verge tiles should be fixed with a Gemini® Verge Clip as shown in Fig 2 unless using Gemini® individual Dry Fixed Verge Units
- Small cut sections of unsupported tiles should be replaced with cut Tile and Halves
- Forticrete recommends the use of positive ventilation in roof spaces in accordance with BS 5250:2002
- All perimeters of the roof should be clipped

Forticrete recommends the use of dry vented ridge in conjunction with eaves ventilation to control the level of condensation above and below the underlay.

## 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.



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 in accordance with information supplied by the Lead Sheet Association with BS EN 12588:2006

## Working procedures, safety & general precautions

Tiles should be fixed in accordance with BS 5534:2003. 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.

### Gemini® Roofing Systems & Technical enquiries:

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Information on the complete range of Forticrete products can be found on the Internet at [www.forticrete.co.uk](http://www.forticrete.co.uk)

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