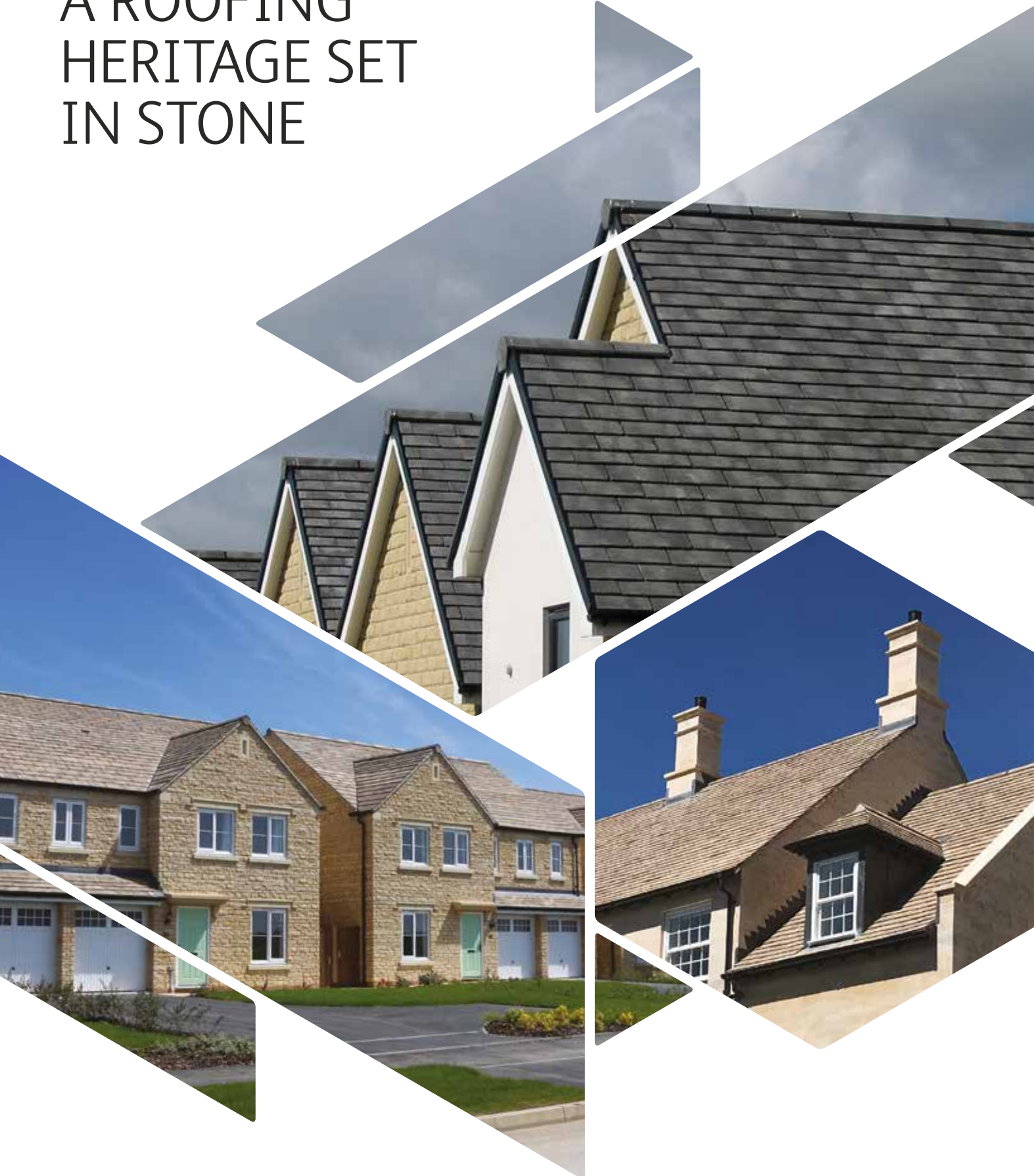


HARDROW®

A ROOFING
HERITAGE SET
IN STONE



Forticrete



REPLICATING NATURAL STONE AESTHETICS
FOR A STANDOUT STYLE



Ibstock
At the heart of building



HARDROW SLATE IS SLIGHTLY IRREGULAR IN SIZE AND SHAPE TO EVOKE THE TRADITIONAL LAID CHARACTER OF NATURAL STONE ROOFING – IT CAN BE LAID IN RANDOM WIDTHS OR DIMINISHING COURSES AND IT NATURALLY MELLOWS WITH AGE.

DID YOU KNOW..?

Solos

A single colour slate that is manufactured to be non-uniform in appearance to replicate the traditional natural stone roof aesthetic.



BROWN



DARK GREY



LIGHT GREY



OLD STONE



THATCH



YELLOW

Duets

Exceptional and innovative. Duets combine the subtle shades of the Solos range on a single slate for optimum results in random application laying.



BARLEY



DUSK



TWILIGHT

Harmonies

Subtle individual blends of 'mixed colour' designs, unique to Hardrow for a unique, vibrant aesthetic.



SYMPHONY



OVERTURE



COLLYWESTON



COTSWOLD

The Hardrow® heritage

THE INSPIRATION FOR HARDROW SLATE CAME IN THE EARLY 1920S, WHEN MANY OF THE OLDEST AND MOST OUTSTANDING EXAMPLES OF GEORGIAN AND EARLIER ARCHITECTURE WERE ROOFED IN LARGE STONE SLATES.

Forticrete saw this as an opportunity to manufacture a cost-effective alternative product that matched all the qualities of natural slate. And so, at Hawes in West Yorkshire, the first Hardrow Slates were manufactured and it has been an increasingly popular choice for homeowners, roofing contractors and specifiers ever since.

The natural choice

Hardrow Slate provides you with the means to achieve a natural stone aesthetic appeal in architecture. From three colour ranges that cover classic and modern tastes, it also comes in a range of sizes for a bold appearance and excellent coverage.

- Stone slate appearance
- Wide range of sizes and colours
- Exceptional water resistance
- Available in diminishing courses and random widths

For the perfect finish and vital functionality, there's also a wide range of detailing components, ornamental slates and ventilation enabling products. Hardrow Slate can also be laid at pitches as low as 17.5 degrees. All this, available to give you maximum design freedom.

- Double lap for flexible roof design
- No mortar needed – mechanically fixed
- Purpose made fittings for roof detailing
- Kitemarked to BS EN 490
- Some sizes can be laid as low as 17.5°



Roofing that's got it all covered

Regional preferences

Hardrow Slate has a longstanding history of successfully meeting strict local planning regulations. With various regions demanding that any building project must adhere to the local natural stone appearance or colour, Hardrow Slate comes in a wide range of colours and blends suitable for most counties and regions.

Over

200 PROJECTS AND DEVELOPMENTS COMPLETED NATIONWIDE IN RECENT YEARS

With Forticrete's established history, it's no surprise that their roof tiles are versatile and popular for usage across private and commercial sectors. From a wide range and vast supplies of colour options for new builds, to a cost-effective solution for social housing and re-roofing projects.

Hardrow Slate has been, and continues to be, a favoured choice for a range of roofing applications.







Dimensions and specifications

Standard roofing slates

NOMINAL SLATE SIZE	381MM X 229MM (15" X 9")	457MM X 305MM (18" X 12")	457MM X 457MM (18" X 18")		610MM X 457MM (24" X 18")		
Pitch	30° & above	25° & above	20° – 24,9°	25° & above	17.5° – 19.9°	20° – 24,9°	25° & above
Max gauge	150mm (6")	191mm (7½")	178mm (7")	191mm (7½")	241mm (9½")	255mm (10")	267mm (10½")
Minimum headlap	75mm (3")	75mm (3")	102mm (4")	75mm (3")	127mm (5")	100mm (4")	75mm (3")
Min side lap	95mm (3¾")	95mm (3¾")	89mm (3½")	75mm (3")	121mm (4¾")	102mm (4")	107mm (4")
Cover width	232mm	311mm	464mm	464mm	468mm	468mm	468mm
Nominal hanging length	331mm	407mm	407mm	407mm	560mm	560mm	560mm
Nominal thickness	14mm (½")	14mm (½")	14mm (½")	14mm (½")	16mm (5/8")	16mm (5/8")	16mm (5/8")
Mass per 1000 slates	3.0 tonnes	4.8 tonnes	7.2 tonnes	7.2 tonnes	10.6 tonnes	10.6 tonnes	10.6 tonnes
Number per m²	29.1	17.22	12.3	11.5	9.07	8.61	8.2
Weight per m²	87 kg	83 kg	88 kg	83 kg	96 kg	91 kg	87 kg
Batten required lin m/m²	6.7	5.24	5.62	5.24	4.15	3.92	3.75
Verge slates	381mm x 343mm (15" x 13½")	457mm x 457mm (18" x 18")	457mm x 686mm (18" x 27")		610mm x 686mm (24" x 27")		
Eaves & tops	254mm x 229mm (10" x 9")	330mm x 305mm (13" x 12")	305mm x 457mm (12" x 18")		457mm x 457mm (18" x 18")		

The minimum pitch is based on a maximum rafter length of 9m. For rafter lengths greater than this, please contact the Forticrete Technical Department.
Batten size: 50mm x 25mm for all rafter centres up to 600mm graded timber in accordance with the current British Standard BS 5534.

Standard vertical cladding slates

NOMINAL SLATE SIZE		COVER WIDTH	NOMINAL HANGING LENGTH	STANDARD HEADLAP		STANDARD GAUGE		NUMBER PER M² AT STANDARD HEADLAP	MASS PER M² AT STANDARD HEADLAP	MASS (APPROX) PER 1000 SLATES	NOMINAL THICKNESS		VERGE SLATES		EAVES AND TOPS	
MM	IN	CW	MM	MM	IN	MM	IN		KG	TONNES	MM	IN	MM	IN	MM	IN
330 x 229	13 x 9	232	280	50	2	140	5½	31.2	81	2.6	14	½/16	50	2	229 x 229	9 x 9
381 x 229*	15 x 9	232	331	50	2	165	6½	26.5	80	3.0	14	½/16	50	2	254 x 229	10 x 9
330 x 305	13 x 12	311	280	50	2	140	5½	23.4	81	3.5	14	½/16	50	2	229 x 305	9 x 12
457 x 305	18 x 12	311	407	50	2	203	8	16.2	78	4.8	14	½/16	50	2	330 x 305	13 x 12

*Also available to order as ornamental slates.

Diminishing courses

Slates are available in sizes: (L x W): **381 x 457mm; 457 x 457mm; 533 x 457mm; 610 x 457mm**

NOTE: Slate and a half slates are supplied in sizes: Under Eave: 457 x 457mm / Tops: 305 x 457mm

Number of courses of each size of slate – The percentage number of different length slates on the rafter is dependant on the rafter length. Where the size of slate changes the gauge should be gradually diminished, so it blends into the next size of slate with the reduced gauge.

Number and weights of diminishing slates per square metre at 75mm (3in) head lap

LENGTH X WIDTH		GAUGE MM		NUMBER	WEIGHT KG
MM	IN	MM	IN		
381 x 457	15 x 18	152	6	14.4	86
457 x 457	18 x 18	190	7 ½	11.5	83
533 x 457	21 x 18	229	9	9.6	81
610 x 457	24 x 18	267	10 ½	8.2	87
686 x 457	27 x 18	305	12	7.2	95

Roof pitch: Minimum Roof Pitch 30 degrees. Maximum Roof Pitch 47 degrees.

Random width slates

Slates are available in sizes: (L x W): **457 x 305mm; 457 x 381mm; 457 x 457mm**

Verge slates: **457 x 686mm**

Under Eaves: **305 x 457mm**

Top Course: **330 x 305mm**

Numbers per size: **Random a third of each size**

Minimum pitch: **25°**

Headlap: **All sizes 75mm. Gauge common to all sizes 191mm maximum**

Side lap: **Never less than 100mm**

Weight of random slates: **83kg per square metre**

Hips and valleys: **Purpose made to pitch**

Tile fixing

Each slate must be secured with two 40mm x 3.35mm aluminium nails. For the 610 x 457 slate, above 30° the nail should be 40mm x 4mm. At roof pitches below 40° depending upon the site exposure, it may be possible to hang slates over the batten. The nail hole diameter is approximately 5mm with the holes being positioned c. 50mm from the head and edge of the slate. Nail specification may alter for marine environments, and you should seek advice from the Roofing Technical Department.

Tile hanging on a sloping elevation

If hanging slates over the battens, an additional batten should be fixed above all parent batten spanning over at least two rafters to provide a mechanical fixing at the verge. Depending on the span of the gable overhang, secondary battening may be required to add additional strength to carry the weight of the slates. If hanging the slates under eaves, 1st course and last course of main slates must be nailed into the batten. Top tile clips are available for fixing the top slates to the adjacent main slates. For curved roofs please contact the Roofing Technical Department. for specification advice.

Designation of standard slates

NOMINAL SLATE SIZE		DESIGNATION NUMBER
MM	MM	
STANDARD ROOFING SLATES		
381 x 229	15 x 9	T - EN 490 - NL - 0 - IF - 232 - / - / - (331) - 3,00
457 x 305	18 x 12	T - EN 490 - NL - 0 - IF - 311 - / - / - (407) - 4,80
457 x 457	18 x 18	T - EN 490 - NL - 0 - IF - 464 - / - / - (407) - 7,20
610 x 457	24 x 18	T - EN 490 - NL - 0 - IF - 468 - / - / - (560) - 10,60

Standard fittings

Hips, valleys and mansard slates are available to order to cover the full range of roof pitches.

Working procedures, safety & general precautions

Slates should be fixed in accordance with BS 5534. Forticrete recommend that fixers of all slates regard the products as fragile as stated in BS8000:Pt6: 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 bolstered crawling boards, ladders and cat ladders.

NOMINAL SLATE SIZE		DESIGNATION NUMBER
MM	MM	
STANDARD VERTICAL CLADDING SLATES		
330 x 229	13 x 9	T - EN 490 - NL - 0 - IF - 232 - / - / - (280) - 2,60
381 x 229	15 x 9	T - EN 490 - NL - 0 - IF - 232 - / - / - (331) - 3,00
330 x 305	13 x 12	T - EN 490 - NL - 0 - IF - 311 - / - / - (280) - 3,50
457 x 305	18 x 12	T - EN 490 - NL - 0 - IF - 311 - / - / - (407) - 4,80

Non-standard fittings

Non standard fittings can be made to order to suit special applications. Please consult our Roofing Technical Department. for help and advice.

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. When unpacking the slates from the pallets, please cut the shrink wrap as instructed and maintain even distribution of the slates on the pallet to avoid tipping. Reference should also be made to the Forticrete Technical Literature and Fixing Instructions.

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