Oglesby & Limb Reference:
A1587 – EXTERNAL MATERIALS SPECIFICATION AND COLOUR SHEET – 17.02.23
Demolition of existing bungalow and erection of detached house.
Westlyn, Fengate, Moulton Chapel, Spalding
SHDC Approval reference H13-0506-22 Dated 27.09.22

Condition 4:
'Before the commencement of the development hereby permitted beyond oversite a schedule of external materials of construction of the development hereby permitted shall be submitted to and approved in writing by the Local Planning Authority, and all the materials used in the development shall conform to the details so approved.'

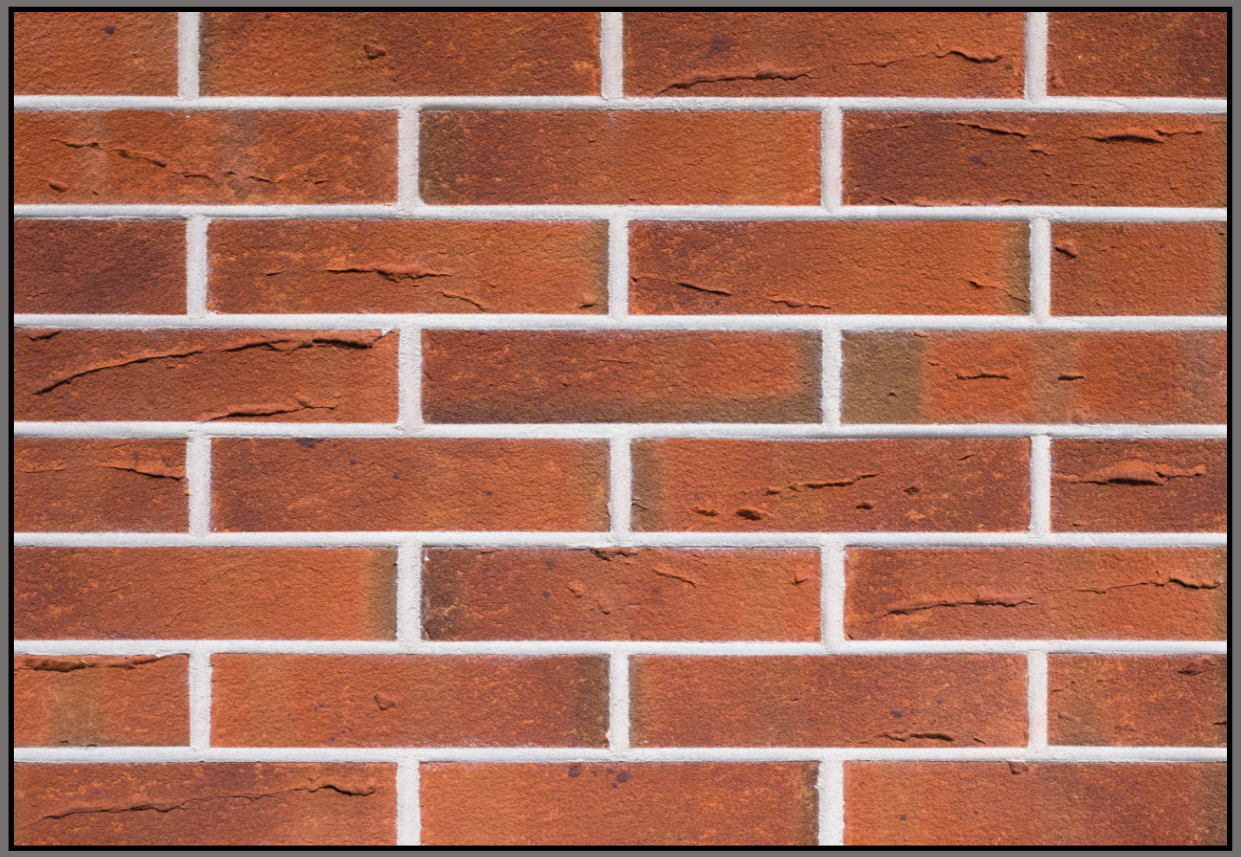
Proposal:

External walls
Bricks:
Traditional Brick and Stone Limited, Ramecroix 65mm (as sheet below).

Roof
Slates:
Cembrit, Contessa natural Slate from Spain in Grey (as sheet below)

Ramecroix

Size	65mm
Water Absorption	12%
Compressive Strength	34 N/mm²
Durability	F2
Bricks per pack	520
Pack Weight	1.00T
Salt Classification	S2
Dimensional Tolerance	T1
Dimensional Range	R2



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Traditional Brick & Stone

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Roof Slate

Contessa

natural slate from Spain blue/black and grey

Cembrit

www.cembrit.co.uk

Contessa natural slate

The best natural and man-made slates the world has to offer are available from Cembrit. Cembrit are members of the Cembrit Holding A/S Group of Denmark, one of Europe's major building material producers with over 80 years experience in the manufacture of fibre reinforced cement products for the roofing and cladding industry.

Using skills built up in over 80 years, Cembrit select natural slate from Spain, Canada, Brazil and the countries of Western Europe. From UK quarries, Cembrit offer Welsh and Westmorland slates. A range of recommended accessories is also offered.

Contessa is a natural slate selected from well established sources and produced by some of the most efficient quarries in Spain.

It is available in two colours: blue/black and grey, in a variety of sizes, and with its textured surface can be relied on to create an attractive and long lasting roof.

Imported by Cembrit Limited for over 15 years, Contessa has become one of the UK's leading specified Spanish slates.

Contessa slates will last the life time of a building if installed correctly and have been widely used on major projects such as supermarkets, schools, hotels, city offices and prestige buildings. They can withstand the most severe weather conditions and are unaffected by sunlight, ultraviolet light and even acid rain.

Appearance

Contessa slates are available in a variety of sizes, in blue/black and grey. Both colours are classified as having a normal texture according to BS EN 12326.

Blue/Black

Grey

Quality

Contessa slate is a tough natural material and samples are regularly tested to the following national standards:

British Standard

BS EN 12326-1:2004 Product specification for roofing slate

- Exhibited the top Class A1 for water absorbtion
- Exhibited the top Class T1 for thermal cycle resistance
- Exhibited the top Class S1 for sulphur dioxide exposure resistance
- Good flexural strength both transversely and longitudinally
- Acceptable non-carbonate content

Oxidisation

There is a potential oxidisation risk with all Contessa slates as their colour is determined by the presence of iron compounds and finely divided carbonaceous matter. They also generally have more pyrite, which may or may not be visible on the surface of the slate. Surface oxidisation of these metallic minerals may cause discolouration or staining of the slate. This characteristic is permitted within the T1 classification. Standard grade slates with a T2 classification may also discolour and stain slates in the courses below (please refer to table 3 of EN12326-1: 2004). Neither discolouration nor staining from oxidisation run off will affect the weatherproof performance of the roof.

Slate Grain and Surface Characteristics

Most slates have a secondary plane of cleavage or grain which can only be determined microscopically. However this grain should not be confused with the texture which can be seen on the surface of the slate which is influenced by the direction in which the slate is split with a chisel, either from the top or the side. Contessa slate has a normal texture using the classifications detailed in BS EN 12326.

General design considerations

Contessa slate laid to BS 5534 will meet the strength requirements for the imposed and uniformly distributed wind and snow loads etc. The site exposure rating and the pitch of roof rafters will determine the size, pattern, lap and fixings for the slates. For UK and Northern Ireland locations, BS 5534: Part 1: 2003 will indicate the expected degree of exposure. Wind driven rain ratings less than 56.5 l/m^2 per spell are described as 'moderate' (see table 1) and those above 56.5 l/m^2 per spell are described as 'severe' (see table 2).

Detailed guidance on wind load calculations is given in BS 5534: Part 1 and in BS 6399: Part 2: 1995 and Part 3: 1998. When BS EN 1991 Part 1-4 replaces BS 6399 to calculate the wind action (design loads) on a roof it will be necessary for the designer to use two documents at the same time; the Eurocode standard BS EN 1991 Part 1-4, and the associated National Annex. The authors of the National Annex have advised that reference should also be made to the background paper PD 6688-1-4 when it is published. In locations where abnormal conditions may be anticipated such as elevated sites, coastal locations, areas of heavy snowfall etc., the recommendation for 'severe' should be followed.

Additional information can also be found in BS 8104. Where the location or construction might make a lower rafter pitch acceptable, designers are asked to seek advice.

Planning/estimating

Due to random variations within the rock it is sensible to consider wasteage before designing, estimating and ordering Contessa slates for your project. Please contact your local Cembrit branch for advice on wastage rates.

Please note the amount of wastage is likely to need to be adjusted according to the complexity of the roof, the amount of cutting and the thickness of the Contessa slate used.

As with all natural slates Contessa slates must be graded and sorted prior to fixing. When using standard grade slates extra grading and sorting will be necessary.

Contessa Tables

Table 1 Moderate exposure
less than 56.5 l/m² per spell

- In general, the recommendations below apply to rafter lengths of not more than 9m. The specifier should also take account of any abnormal local conditions that might apply.

Pitch	Slate Size	Minimum headlap	Slates	Batten gauge	Holing gauge	Average weight
deg	mm x	mm	no/m²	mm	mm	kg/m²
45°	600 x 300	54	12.21	273	337	33.24
	500 x 300	54	14.95	223	287	33.91
	500 x 250	54	17.94	223	287	33.91
	450 x 250	54	20.20	198	262	34.38
	450 x 220	54	22.96	198	262	34.38
	400 x 250	54	23.12	173	237	34.97
	400 x 200	54	28.90	173	237	34.97
40°	600 x 300	60	12.35	270	340	33.61
	500 x 300	60	15.15	220	290	34.38
	500 x 250	60	18.18	220	290	34.38
	450 x 250	60	20.51	195	265	34.90
	450 x 220	60	23.31	195	265	34.90
	400 x 250	60	23.53	170	240	35.59
	400 x 200	60	29.41	170	240	35.59
35°	600 x 300	67	12.51	267	344	34.05
	500 x 300	67	15.40	217	294	34.93
	500 x 250	67	18.48	217	294	34.93
	450 x 250	67	20.89	192	269	35.54
	450 x 220	67	23.74	192	269	35.54
	400 x 250	67	24.02	167	244	36.34
	400 x 200	67	30.03	167	244	36.34
30°	600 x 300	77	12.70	262	349	34.70
	500 x 300	77	15.76	212	299	35.76
	500 x 250	77	18.91	212	299	35.76
	450 x 250	77	21.45	187	274	36.49
	450 x 220	77	24.37	187	274	36.49
	400 x 250	77	24.77	162	249	37.46
	400 x 200	77	30.96	162	249	37.46
27.5°	600 x 300	83	12.89	259	352	35.11
	500 x 300	83	15.99	209	302	36.27
	500 x 250	83	19.18	209	302	36.27
25°	600 x 300	91	13.10	255	356	35.66
	500 x 300	91	16.30	205	306	36.98
	500 x 250	91	19.56	205	306	36.98
22.5°	500 x 300	101	16.71	200	311	37.91
20°	500 x 300	113	17.23	194	317	39.08

Table 2 Severe exposure
greater than or equal to 56.5 l/m² per spell

- In general, the recommendations below apply to rafter lengths of not more than 6m. The specifier should also take account of any abnormal local conditions that might apply.

Pitch	Slate Size	Minimum headlap	Slates	Batten gauge	Holing gauge	Average weight
deg	mm x	mm	no/m²	mm	mm	kg/m²
45°	600 x 300	69	12.55	266	345	34.18
	500 x 300	69	15.47	216	295	35.09
	500 x 250	69	18.56	216	295	35.09
	450 x 250	69	21.00	191	270	35.73
	400 x 250	69	24.17	166	245	36.56
	400 x 200	69	30.21	166	245	36.56
40°	600 x 300	76	12.72	262	348	34.64
	500 x 300	76	15.72	212	298	35.67
	500 x 250	76	18.87	212	298	35.67
	450 x 250	76	21.39	187	273	36.40
	400 x 250	76	24.69	162	248	37.35
	400 x 200	76	30.86	162	248	37.35
35°	600 x 300	86	12.97	257	355	35.31
	500 x 300	86	16.10	207	303	36.53
	500 x 250	86	19.32	207	303	36.53
	450 x 250	86	21.98	182	278	37.40
	400 x 250	86	25.48	157	253	38.54
	400 x 200	86	31.85	157	253	38.54
30°	600 x 300	98	13.28	251	359	36.16
	500 x 300	98	16.58	201	309	37.62
	500 x 250	98	19.90	201	309	37.62
	450 x 250	98	22.73	176	284	38.67
	400 x 250	98	26.49	151	259	40.07
	400 x 200	98	33.11	151	259	40.07
27.5°	500 x 300	106	16.92	197	313	38.39
25°	500 x 300	116	17.36	192	318	39.39
22.5°	500 x 300	128	17.92	186	324	40.66

- These tables are based on a nail hole positioned 25mm in from the side of the slate. It may be possible to use certain slates at lower pitches by holing the slates nearer to the edge under factory conditions.

- An allowance should also be made for cutting and wastage.

- For further details and assistance please contact our Technical Department.

Sitework

Storage and handling

Slates should be carefully stacked on their longer edges with timber bearers, battens or boards between layers. The lowest layer must be arranged on a firm level base.

Working

Slate can be cut and holed on site by hand or machine. Care must be taken to avoid undue spalling. Slates should be holed from the bed towards the face so that the nail-head is accommodated in the small cavity formed by the area of spalling. Individual slates should be holed so that the thicker end is at the tail of the slate.

Before fixing, the slates should be sorted into three or four groups of similar thickness (ideally the quantity to be sorted should be sufficient to cover at least one roof slope). The thickest group should be used in the courses nearest to the eaves and the thinnest group at the top of the roof.

The holing gauges for common laps are shown in tables 1 and 2.

Fixing

Contessa slates must be laid in accordance with the Code of Practice for Slating and Tiling, BS 5534: 2003, and the Code of Practice for Workmanship on Building Sites – Slating and Tiling, BS 8000: Part 6: 1990. The roof structure should be checked to ensure that it is to a true line and squareness tolerance, and set out to ensure that:

- the minimum cutting of slates is necessary.
- the long edges of the slates are parallel to the direction at which the water will run off the roof. In some instances this may result in raking cuts to all the eaves and the ridges.
- the horizontal lines of the courses are straight and true.
- the perpendicular lines of the slate are to a true alignment and allow for a small 'perp' gap between slates (3mm ± 1mm).

The last two items are best achieved using a chalked line.

Slates should be twice centre-nailed to horizontal battens etc., as described in BS 5534, using:

- copper, aluminium, phosphor or silicon bronze nails to BS 5534: 2003

The minimum head diameter for nails used with natural slates is 10mm (which generally means a shank diameter of between 3.00 – 3.35mm) and they should penetrate into the batten by a minimum of 15mm.

Or, for hook fixing:

- stainless steel spike hooks to BS 5534: 2003 to suit common laps

The minimum recommended pitch for hook fixing is 25°. However, below 30° crimped hooks should be used. The slate grip gap should be small enough to hold the slate securely but not so small as to damage the slate.

Slates, generally, should be not less than 150mm wide. At all verges and abutments, alternate slate courses must start with half width or slate and half width to maintain bond. Slate and a half widths must be used if the half slate is less than 150mm wide. At valleys and hips where slates need to be cut on the rake, wide slates must be used to maintain an adequate width at the head or tail. At mitred hips on low pitched roofs wide slates should be used beneath the hip capping.

Battens

In accordance with the recommendations in BS 5534: 2003, the minimum batten size, for rafter spacing up to 600mm for use with natural slates is 50 x 25mm. To avoid splitting the batten, the maximum nail diameter should not exceed one tenth of the batten width. The ends of any batten should be fully supported and the length of any batten should not be less than 1.2m (except where this is unavoidable) and nailed to a maximum of 600mm centres. Where the roof is close-boarded, counter battens should be used down the slope in the roof on the line of the rafters. Counter battens should be of sufficient thickness to provide ventilation between the boarding and underlay.

The batten gauges for common laps are shown in tables 1 and 2.

Underlay

Suitable underlay should have a minimum standard to BS 747: 2000 Type 1F and/or should have a BBA Certificate. The underlay should be draped over the rafters, or fully supported on boarding or sheathing, should allow any moisture to drain and should extend over the tilting fillet, fascia board and into the eaves gutter.

Ventilation

The roof space and/or batten cavity must be ventilated in accordance with the latest edition of BS 5250: 2002. Particular attention should be given to the need for adequate ventilation where the insulation follows the rafter line. Cembrit offer a comprehensive range of ventilation products to suit most applications and further advice is available on request.

Lead staining risk

Lead develops a lead carbonate patina which, if washed over slates by rain or other moisture, causes unsightly staining. To prevent this reaction marring the work, it is advisable to treat all lead including soakers and flashings, with patination oil before any rain occurs, and not later than the day the lead is fixed. Patination oil, which is readily available from builders' merchants, should be applied following the manufacturer's instructions.

Typical specification

Roof to be covered with Contessa slates, size ..... mm, thickness.... mm, colour....., laid to a minimum head lap of ..... mm. To be used with Cembrit slate vents, ridges and roof trims. An NBS specification is available either from our Technical Department or our website.

Accessories

A full range of accessories including fibre cement undercloak/soffit strip is available. Please contact our Technical Department or see our website for full details.

Supply

Cembrit natural Contessa slates are supplied directly to approved accounts, roofing contractors and builders' merchants. Prices are available on request from Cembrit Ltd.

The information contained in this publication and otherwise supplied to users of the company's products is based on the company's general experience, best knowledge and belief. However, because of factors beyond the company's knowledge and control, which can affect the use of the products, no warranty is given or implied with respect to such information.

The company's policy is one of continuous improvement. Cembrit Limited therefore reserves the right to alter specifications at any time and without notice.

As with all natural materials, colours and textures of slate may vary according to light and weather conditions. It is advisable to ask for samples of slate prior to specification and purchase.

Owing to this and limitations of the printing process, colours of slate in this brochure may only be taken as indicative.

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