



# Corncockle Sandstone

## Technical Data Sheet

### Corncockle Sandstone

Corncockle Quarry

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Grid reference : -- --

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This data sheet was compiled by the Building Research Establishment (BRE). Where possible, data collected in earlier surveys has been used to help interpret the test results, BRE (1997). The data sheet was compiled in 2000 using the results of tests carried out at BRE. The work was carried out by BRE as part of a Partners in Technology Programme funded by the Department of the Environment, Transport and the Regions and Dunhouse Quarry Co. Ltd and does not represent an endorsement of the stone by BRE.

### General

Corncockle Quarry is near Lockerbie. Bed thickness varies from 0.25 – 1 m and the quarry can supply blocks of up to 0.6 x 4 x 2 m and sawn material packaged and produced at Dunhouse Quarry by Dunhouse Quarry Co. Ltd. There are ample reserves and the quarry is opened as required to replenish stock levels (currently 250 m<sup>3</sup>).

### Petrography

Corncockle is a pale red brown, non-calcareous, fine to medium grained sandstone of Permian age with dark flecks and coarser laminae occurring occasionally.

### Expected Durability and Performance

It is important that the results from the individual tests are not viewed in isolation. They should be considered together and compared to the performance of the stone in existing buildings and other uses. Sandstone is traditionally acknowledged as generally being a very durable building and paving stone and have been used extensively in many towns and cities in the UK. Corncockle sandstone appears to be a durable stone that will have moderate resistance to acid rain or air pollution. However, the moderate weight loss in the sodium sulphate crystallisation test indicates only moderate resistance to salt damage

(for example in coastal locations or from de-icing salts). Frost test results indicate the stone should also have high frost resistance. The compressive and flexural strength of the stone is low for a sandstone in comparison with other sandstones. The density and strength data indicate that the stone should be suitable for use in medium trafficked areas.

Overall, Corncockle should be suitable for use in many aspects of construction including flooring, paving, and load bearing masonry. Caution would be required in using it in heavily trafficked areas or areas where a long service life is needed. The stone is not used for cladding.

**Test Results – Corncockle**

<b>Safety in Use</b>		
Slip Resistance <sup>(Note 1)</sup>	85	Wet Values > 40 are considered safe.
Abrasion Resistance <sup>(Note 1)</sup>	Not Tested	Values <23.0 are considered suitable for use in heavily trafficked areas
<b>Strength under load</b>		
1) Compression <sup>(Note 2)</sup>	72.5 MPa	Loaded perpendicular to the bedding plane ambient humidity

2) Bending <sup>(Note 1)</sup>	6.9 MPa	Loaded perpendicular to the bedding plane ambient humidity
	Not Tested	Loaded perpendicular to the bedding plane ambient humidity
<b>Porosity and Water Absorption</b>		
1) Porosity <sup>(Note 3)</sup>	19.5%	
2) Saturation Coefficient <sup>(Note 3)</sup>	0.62	
3) Water Absorption	5.7 % (by wt)	
4) Bulk specific gravity	2132kg/m <sup>3</sup>	
<b>Resistance to Frost</b>		
Flexural strength after Freeze/Thaw Test <sup>(Note 1)</sup>	6.1 MPa	Loaded perpendicular to the bedding plane ambient humidity

<b>Resistance to Salt</b>		
Sodium Sulphate Crystallisation Test (Note 3)	2.52% Mean wt loss	
<b>Resistance to Acidity</b>		
Acid Immersion Test <sup>(Note 4)</sup>	Pass	

(Test methods Note 1 = EN1341, Note 2 = EN 1342, Note 3 = EN 1341 /BRE 141, Note 4 = BRE 141, Note 5 = based on earlier BRE data)

Tests were carried out at BRE in 1997. N.D. = not determined