

# Technical Data Sheet

## Dunhouse Sandstone (Blue)

### General

This quarry, near Darlington, has been worked since the early 1900s and has been in the hands of the present owners since 1933. There are good reserves of stone and the potential exists to expand to adjoining fields. Stone is marketed as Dunhouse Grey & Dunhouse Buff and extracted from two faces of 9 to 15m in depth beneath overburden of about 6.5m. The maximum depth of stone on bed is 1.8m, the average being 1.4m.

### Petrography

Dunhouse is from the Millstone Grit of Carboniferous age. It is a fine-grained non-clacareous, slightly micaceous, generally buff coloured stone. Geologically it is classified as a meso-micro crystalline arenite.

### 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 from the Millstone Grit series are 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. Dunhouse Grey sandstone appears to be a durable stone that is not effected by acid rain or air pollution. The weight loss in the sodium sulphate crystallisation test indicates modest resistance to salt damage (for example in coastal locations or from de-icing salts. The stone seems to have good frost resistance. The strength of the stone is towards the higher end of the range for sandstones.

Overall, Dunhouse Grey should be suitable for use in most aspects of construction including flooring, load bearing masonry and cladding. At present It is not used for paving, sets or veneers.

### Test Results - Dunhouse Grey

Safety in Use		
Slip Resistance <sup>(Note 1)</sup>	83	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
Strength under load		
1) Compression <sup>(Note 2)</sup>	137.8 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending <sup>(Note 1)</sup>	17.1 MPa	Loaded perpendicular to the bedding plane ambient humidity
	Not Tested	Loaded perpendicular to the bedding plane ambient humidity
Porosity and Water Absorption		
1) Porosity <sup>(Note 3)</sup>	11.7%	
2) Saturation Coefficient <sup>(Note 3)</sup>	0.59	
3) Water Absorption	2.9 % (by wt)	

4) Bulk specific gravity	2357kg/m <sup>3</sup>	
<b>Resistance to Frost</b>		
Flexural strength after Freeze/Thaw Test <sup>(Note 1)</sup>	16.3 MPa	Loaded perpendicular to the bedding plane ambient humidity
<b>Resistance to Salt</b>		
Sodium Sulphate Crystallisation Test <sup>(Note 3)</sup>	-1.38% 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)