



# Hopton Wood Limestone

## **Technical Data Sheet**

### **Hopton Wood Limestone**

Hopton Wood Stone Sales Ltd

Brassington Moor, Brassington, Matlock, Derbyshire

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Grid Reference: SK 237 570

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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. The data sheet was compiled in March 2000 using the results of tests carried out to the proposed European Standards. 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 Hopton Wood Stone Sales Ltd and does not represent an endorsement of the stone by BRE.

### **General**

The quarry is on Brassington Moor near Matlock. The stone is used for walling, architectural details, paving, flooring and sculpture. The depth on bed is around 800mm. The maximum size quarried is 1500 x 800 x 800mm. There are old quarries in the area and Hopton Wood was used extensively in the past. There are very large reserves of the stone.

### **Petrography**

Hopton Wood is of early Carboniferous age. The stone is usually cream or grey and many attractive fossils are present.

### **Expected Durability and Performance**

It is important that the results from the sodium sulphate crystallisation tests are not viewed in isolation. They should be considered with the results from the porosity and water absorption tests and the performance of the stone in existing buildings. Stone from this area is traditionally used as architectural details (for example columns) and paving. The crystallisation test results show the stone to be Class A which BRE Report 141 suggest is suitable for most uses and that it should have good resistance to both salt and frost. Based on current research it seems likely that the stone would weather at a rate of between 1 and 2 mm per 100 years but it could be greater in severe exposures or on the edges of stonework. The strength is at the top end of the range for limestones.

### **Test Results – Hopton Wood (Brassington Moor)**

<b>Safety in Use</b>		
Slip Resistance <sup>(Note 1)</sup>	57	Values > 40 are considered safe. Note: Polished surfaces are usually around 15-20 when wet.
Abrasion Resistance <sup>(Note 1)</sup>	N.D.	Values <23.0 are considered suitable for use in heavily trafficked areas
<b>Strength under load</b>		
1) Compression <sup>(Note 2)</sup>	119.8 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending <sup>(Note 1)</sup>	11.7 MPa	Loaded perpendicular to the bedding plane ambient humidity
	12.0 MPa	Loaded parallel to the bedding plane ambient humidity

<b>Porosity and Water Absorption</b>		
1) Porosity <sup>(Note 3)</sup>	7.6%	
2) Saturation Coefficient <sup>(Note 3)</sup>	0.60	
3) Water Absorption	1.81 % (by wt)	
4) Bulk specific gravity	2504kg/m <sup>3</sup>	
<b>Resistance to Frost</b>		
Freeze/Thaw Test <sup>(Note 1)</sup>	N.D.	
<b>Resistance to Salt</b>		
Sodium Sulphate Crystallisation Test <sup>(Note 3)</sup>	0.20% Mean wt loss	

(Test methods Note 1 = EN1341, Note 2 = EN 1342, Note 3 = EN 1341 /BRE 141, Note 4 = BRE 141)

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