



Elm Park  
Limestone -  
BRE Group

## Technical Data Sheet

### Elm Park Limestone

Wessex Dimensional Stone Ltd  
Teffont Quarry, Chilmark  
Salisbury, Wiltshire, SP3 5BP

T 01722 716815 F 01722 716818 E info@wessexdlstone.com

Grid reference :

Compiled January 2000

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 January 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 the Elm Park Mine and does not represent an endorsement of the stone by BRE.

### General

The mine is located near to Garstad in Wiltshire. There are plenty of reserves of stone.

### Petrography

Elm Park Stone is an oolitic limestone from the Great Oolite of middle Jurassic age. The stone is mined and is buff in colour

### 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 acknowledged as being less durable than stones such as Portland Whit Bed but it has been used extensively where a faster rate of weathering is acceptable or where its working qualities were required. The crystallisation test results show the stone to be Class D which BRE Report 141 suggests that it is suitable for plain walling and cladding. The results from the other tests suggest that the soundest stone may well perform better than these classes in the current environment. When using Elm Park Stone it is especially important that the detailing of the stonework is designed to offer the maximum protection to rainwater and rainwater runoff. Based on current research it seems likely that the stone would weather at a rate

of between 3 and 4 mm per 100 years but it could be greater in severe exposures or on the edges of stonework. The strength is towards the lower end of the range for limestones but the performance should be satisfactory if the relevant British Standards are followed.

The abrasion resistance is moderate and so the stone should not be used in heavily trafficked areas.

### Test Results – Elm Park Limestone

<b>Safety in Use</b>		
Slip Resistance (Note 1)	n.d.	Values > 40 are considered safe
Abrasion Resistance <sup>(Note 1)</sup>	27.1	Values <23.0 are considered suitable for use in heavily trafficked areas
<b>Strength under load</b>		
1) Compression <sup>(Note 2)</sup>	28.3 MPa	Loaded perpendicular to the bedding plane- ambient humidity
2) Bending <sup>(Note 1)</sup>	4.7 MPa	Loaded perpendicular to the bedding plane- ambient humidity

	4.3 MPa	Loaded parallel to the bedding plane- ambient humidity
<b>Porosity and Water Absorption</b>		
1) Porosity <sup>(Note 3)</sup>	17.3%	
2) Saturation Coefficient <sup>(Note 3)</sup>	0.80	
3) Water Absorption	6.2% (by wt)	
4) Bulk specific gravity	2245 kg/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>	23.7% 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