



Westwood
Ground
Limestone

Technical Data Sheet

Westwood Ground Limestone

Westwood Quarry

Bradford on Avon, Wilts

Contact : Portland Unit, Easton

Tel. 01305 820 207 Fax. 01395 820 275

email: sales@bath-portland.co.uk

website : www.hanson-quarryproducts.com

Grid Reference: ST 803 591

Compiled September 1997

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 September 1997 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 Hanson Bath and Portland Stone and does not represent an endorsement of the stone by BRE.

General

The mine is in the village of Westwood. It is on the hill above Avoncliff. The entrance to the mine is on the side of the hill and this gives access to the face which is below ground. The mine was reopened in 1975 and there are plenty of reserves of stone.

Petrography

Westwood Ground Stone is an oolitic limestone from the Great Oolite of middle Jurassic age. It is a coarse-grained, buff coloured stone. The stone is divided into two beds in a 2.3m deep face. The top bed is between 600mm and 750mm deep, whilst the lower bed is up to 1.2m deep. In earlier work, the two beds were tested but had similar porosity and water absorption values.

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 Westwood 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. When using Westwood 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.

Test Results – Westwood Ground Limestone

Safety in Use		
Slip Resistance ^(Note 1)	84	Values > 40 are considered safe.
Abrasion Resistance ^(Note 1)	26.2	Values <23.0 are considered suitable for use in heavily trafficked areas
Strength under load		
1) Compression ^(Note 2)	18.9 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending ^(Note 1)	3.4 MPa	Loaded perpendicular to the bedding plane ambient humidity

Porosity and Water Absorption		
1) Porosity ^(Note 3)	20-25%	
2) Saturation Coefficient ^(Note 3)	0.71	
3) Water Absorption	9.0 % (by wt)	
4) Bulk specific gravity	2031kg/m ³	
Resistance to Frost		
Freeze/Thaw Test ^(Note 1)	N.D.	
Resistance to Salt		
Sodium Sulphate Crystallisation Test ^(Note 3)	30.6% Mean wt loss	

(Test methods Note 1 = prEn1341, Note 2 = prEN 1342, Note 3 = prEn 1341 /BRE 141, Note 4 = BRE 141)

Tests were carried out at BRE in 1996 N.D. = not determined