Stanley's Quarry Bed 1 Limestone

Technical Data Sheet
Stanley's Quarry Bed 2 Limestone
Stanley's Quarry
Northwick Estate, Upton Wold, Moreton-in-the-Marsh, Glos.
Contact : Stanley's Quarry
Tel. 01386 841 236 Fax. 01386 841 845
email: sales@stanleysquarry.freeserve.co.uk
website : www.stanleysquarry.freeserve.co.uk
Grid Reference: – – –
Compiled September 1999

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 1999 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 Stanley's Quarry and does not represent an endorsement of the stone by BRE.

General

The quarry is located within the Northwick Park Estate and is accessed from the B4061 (Chipping Campden road) off the A44. The quarry has been in production for more than 100 years but has expanded rapidly over the last 15 years. The stone occurs in distinctive colours, known Beds 1 to 4. Good reserves are available. The maximum blocks size at the quarry is 2-00mm x 2000mm by 1000mm height on bed with the largest sawn slabs 600 height on bed.

Petrography

The stone is an oolithic limestone and the beds are part of the Jurassic Great Oolite Series

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 the Cotswold region is traditionally used as building stone in the region and increasingly in many other towns and cities in the UK. The high water absorption and porosity indicate a very open stone that will have good resistance to weathering. The sodium sulphate crystallisation result also indicates that the stone will have good resistance to salt damage and that it will perform well in all but the most exposed locations where it may it may require some extra protection or careful design and detailing to shed water. The

strength is towards the lower end of the range for limestones but the performance should satisfactory if the relevant British Standards are followed.

Where more severe exposure conditions are expected, for example high concentrations of sulphur dioxide or severe frosts, or where a long life is required then it may be desirable to use a more durable stone for weatherings. When using Bed 1 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 – Campden Limestone – Stanley's Quarry Bed 2

Safety in Use		
Slip Resistance (Note 1)	N.D.	Values > 40 are considered safe.
Abrasion Resistance (Note 1)	N.D.	Values <23.0 are considered suitable for use in heavily trafficked areas
Strength under load		
1) Compression(Note 2)	17.3 MPa	Loaded perpendicular to the bedding plane ambient humidity

2) Bending (Note 1)	4.5 MPa	Loaded perpendicular to the bedding plane ambient humidity
	4.1	Loaded parallel to the bedding plane ambient humidity
Porosity and Water Absorption		
1) Porosity (Note 3)	27.3%	
2) Saturation Coefficient (Note 3)	0.67	
3) Water Absorption	9.2 % (by wt)	
4) Bulk specific gravity	1971kg/m^3	
Resistance to Frost		
Freeze/Thaw Test (Note 1)	N.D.	
Resistance to Salt		

Sodium Sulphate Crystallisation Test (Note 3)	14.56% 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