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Technical Data Sheet

Cromwell Sandstone

Cromwell Quarry
Southowram, Halifax, West Yorkshire. HX3 9SY
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Grid Reference : ---- ----
Compiled May 2000

This data sheet was compiled by the Building Research Establishment (BRE). It is based on data from current tests at BRE (2000). The data sheet was compiled in May 2000. 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 Marshalls Mono Ltd. and does not represent an endorsement of the stone by BRE.

General

Petrography

Cromwell is a buff to grey, fine grained sandstone from the Coal measures of Carboniferous age.

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 is traditionally acknowledged as generally being a very durable building and paving stone and has been used extensively in many towns and cities in the UK. Cromwell sandstone appears to be a durable stone that will have good resistance to acid rain or air pollution. The negligible weight loss in the sodium sulphate crystallisation test indicates high resistance to salt damage (for example in coastal locations or from de-icing salts). From the frost test the stone should also have good frost resistance. The compressive and flexural strength of the stone is high for a sandstone. The high density and compressive strength indicate that the stone should be suitable for use in heavily trafficked areas.

Overall, Cromwell should be suitable for use in most aspects of construction including flooring, paving, load bearing masonry and cladding. The stone is traditionally used for walling and paving.

Test Results - Cromwell Sandstone

Safety in Use		
Slip Resistance (Note 1)	69	Wet. Values > 40 are considered safe.
Abrasion Resistance (Note 1)	Not tested	Values <23.0 are considered suitable for use in heavily trafficked areas

Strength under load		
1) Compression (Note 2)	180.1 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending (Note 1)	18.9 MPa	Loaded perpendicular to the bedding plane ambient humidity
	Not tested	Loaded parallel to the bedding plane ambient humidity
Porosity and Water Absorption		
1) Porosity (Note 3)	10.2%	
2) Saturation Coefficient (Note 3)	0.60	
3) Water Absorption	2.5% (by wt)	
4) Bulk specific gravity	2398kg/m^3	
Resistance to Frost		
Flexural strength after Freeze/Thaw Test (Note 1)	21.0 MPa	Loaded perpendicular to the bedding plane ambient humidity
Resistance to Salt		
Sodium Sulphate Crystallisation Test (Note 3)	-0.85% Mean wt loss	
Resistance to Acidity		
Acid Immersion Test (Note 4)	Pass	

(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 2000

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