Crossley Sandstone

Technical Data Sheet
Crossley Sandstone
Squire Hill Quarry
Thumpas Quarry, Southowram, Halifax, W Yorks, HX3 8PL
Contact : W S Crossley (York Stone) Ltd
Tel. 01422 344263
Grid reference : SE 107 238
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 W S Crossley (York Stone) Ltd and does not represent an endorsement of the stone by BRE.

General
Squire Hill quarry is near Halifax, W. Yorkshire. Block sizes are 3 x 3 x 1 m in size.

Petrography
Crossleys is a buff coloured, fine grained sandstone from the Coal Measures of the Carboniferous.

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. Crossley sandstone appears to be a durable stone that will have good resistance to acid rain or air pollution. In addition, the negligible weight loss in the sodium sulphate crystallisation test indicates high resistance to salt damage and the stone performs well in the harsher saturated sodium sulphate crystallisation test indicating an ability to withstand harsh conditions (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 above the mid-range value for a sandstone. The density and compressive strength indicate that the stone should be suitable for use in heavily trafficked areas.

Overall, Crossley sandstone should be suitable for use in most aspects of construction including flooring, paving, load bearing masonry and cladding. The stone is suitable for areas where a long service life is needed.

Test Results – Crossley

Safety in Use		
Slip Resistance (Note 1)	66	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)	183.6 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending (Note 1)	21.3 MPa	Loaded perpendicular to the bedding plane ambient humidity
	21.4 MPa	Loaded parallel to the bedding

		plane ambient humidity
Porosity and Water Absorption		
1) Porosity (Note 3)	10.5%	
2) Saturation Coefficient (Note 3)	0.64	
3) Water Absorption	2.8 % (by wt)	
4) Bulk specific gravity	2400kg/m^3	
Resistance to Frost		
Flexural strength after Freeze/Thaw Test (Note 1)	16.0 MPa	Loaded perpendicular to the bedding plane ambient humidity
Resistance to Salt		
Sodium Sulphate Crystallisation Test (Note 3)	-0.80% Mean wt loss	

Resistance to Acidity		
Acid Immersion (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 1997. N.D. = not determined