Lees Endcliffe Sandstone

Technical Data Sheet
Lees Endcliffe Sandstone
Lees Endcliffe Quarry
Grangemill, Matlock, Derbyshire, DE4 4BW
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This data sheet was compiled by the Building Research Establishment (BRE). It is based on current tests carried out 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 Stancliffe Stone Company Ltd. and does not represent an endorsement of the stone by BRE.

General
Lees Endcliffe is sandstone. Sawn material is produced at the stoneworks of Stancliffe Stone Company Ltd.

Petrography
Lees Endcliffe is from the 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. Lees Endcliffe sandstone appears to be a durable stone that will has good resistance to acid rain or air pollution. In addition, the high weight loss in the sodium sulphate crystallisation test indicates low resistance to salt damage. Results from the harsher saturated the sodium sulphate crystallisation test indicate materials with a high loss in the un-saturated test have very poor resistance to extreme salts (for example in coastal locations or from de-icing salts). From the frost test the stone should have good frost resistance. The compressive and flexural strength of the stone is below the average value for a sandstone and is comparable with many sandstones. The density, compressive strength and abrasion results indicate that the stone should be suitable for use in heavily trafficked areas.

Overall, Lees Endcliffe should be suitable for use in most aspects of construction including flooring, paving, load bearing masonry and cladding. The stone is not suitable for areas where a long service life or exposure to high salts is required. The stone is not in production at present.

Test Results – Lees Endcliffe Sandstone

Safety in Use		
Slip Resistance (Note 1)	70 Wet	Values > 40 are considered safe.
Abrasion Resistance (Note 1)	19.2	Values <23.0 are considered suitable for use in heavily trafficked areas
Strength under load		
1) Compression(Note 2)	80.4 MPa	Loaded perpendicular to the bedding plane ambient humidity
2) Bending (Note 1)	7.5 MPa	Loaded perpendicular to the bedding plane ambient humidity

	Hot tested	Loaded parallel to the bedding plane ambient humidity
Porosity and Water Absorption		
1) Porosity (Note 3)	13.5%	
2) Saturation Coefficient (Note 3)	0.67	
3) Water Absorption	3.9% (by wt)	
4) Bulk specific gravity	2294kg/m^3	
Resistance to Frost		
Flexural strength after Freeze/Thaw Test (Note 1)	7.1 MPa	Loaded perpendicular to the bedding plane ambient humidity
Resistance to Salt		
Sodium Sulphate Crystallisation Test (Note 3)	9.39% 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 1997. N.D. = not determined