

IDENTIFICATION AND DESCRIPTION OF ROCKS

In accordance with BS 5930:1999 Amendment 1 and BS EN ISO 14689

DIMENSION	ROCK MATERIAL										ROCK MASS																																																																																																
	ROCK MATERIAL					ROCK NAME					GENERAL					DISCONTINUITIES																																																																																											
	Strength	Structure and fabric	Colour	Texture	Grain size	SEDIMENTARY	IGNEOUS	METAMORPHIC	Minor Constituents	Formation Name	Weathering	Orientation	Spacing	Persistence	Termination	Roughness	Wall strength	Aperture	Infilling	Seepage	No of sets																																																																																						
2000 mm	>250 MPa Extremely Strong Rings on hammer blows. Only chipped with geological hammer	Use standard geological terms Very thickly	LIGHTNESS	Use standard geological terms				Massive Foliated		Name according to published geological maps and memoirs	Approach 1 Mandatory description of all features associated with weathering	Dip direction and dip eg 245/70	Extremely widely > 6 m	Very high > 20 m High 10 to 20 m	x outside exposure r within rock d against discontinuity Cannot normally be described in cores	Large scale (m) Waviness Curvature Straightness	Use standard strength terms (Col 2) Support by using	Cannot be described in cores Extremely Wide > 1 000 mm	Clean	Surface staining (colour)	Cannot be described in detail in cores although division into sets with different dip amounts is often feasible and can be usefully carried out																																																																																						
630 mm	100 - 250 MPa Very Strong	Thickly	Light Dark	for example phaneritic ophitic porphyritic crystalline amorphous	CONGLOMERATE	GRANITE		occasional	COAL MEASURES	Describe state and changes in Strength Fracture state Colour Presence or absence of weathering products	Describe state and changes in Strength Fracture state Colour Presence or absence of weathering products	Dip amount only in cores	Very widely 2 to 6 m	Medium 3 to 10 m								Medium scale (cm) and small scale (mm)	Field strength tests	Very Wide 100 - 1000 mm	Soil infilling (describe as for soils, see over)	Moisture on rock surface	Record spacing and orientation of each set																																																																																
200 mm	Requires many hammer blows to break specimen	Medium	CHROMA		BRECCIA	GNEISS		frequent	WEATHERED WICKERSLEY ROCK				SHERWOOD SANDSTONE	Approaches 4 or 5 Classify only if useful and unambiguous														DISTINCTLY WEATHERED MERCIA MUDSTONE	Medium 200 to 600 mm	Widely 0.6 to 2 m	Low 1 to 3 m	Other index tests Visual assessment	Moderately wide 2.5 to 10 mm	Mineral coatings(eg calcite, chlorite, gypsum etc)	Dripping water	Water flow measured per unit time on an individual discontinuity or set of discontinuities																																																																							
63 mm	50 - 100 MPa Strong	Thinly	Pinkish Reddish Yellowish Brownish Greenish		LIMESTONE	DIORITE	MIGMATITE	vugs	RESIDUAL MUDSTONE																					LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous						DISTINCTLY WEATHERED MERCIA MUDSTONE	Closely 60 to 200 mm	Very closely 20 to 60 mm	Very Low < 1 m	Other index tests Visual assessment	Open 0.5 to 2.5 mm	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec																																																														
20 mm	Rock broken by more than one hammer blow	Very thinly	Bluish Greyish		AGGLOMERATE			shells																															LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous						DISTINCTLY WEATHERED MERCIA MUDSTONE	Extremely closely < 20 mm	Discontinuous	Continuous in cores	Other index tests Visual assessment	Partly open 0.25 to 0.5 mm	Other - specify	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																																																					
6.3 mm	25 - 50 MPa Medium Strong	Thickly laminated / Narrowly			DOLOMITE	GABBRO	MARBLE	pyrite																																															LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Tight 0.1 to 0.25 mm	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																																										
2 mm	Cannot be peeled with knife, fractures with single blow of hammer	Thinly laminated / Very narrowly				SANDSTONE	HALITE	MICROGRANITE	SCHIST																																																									LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																															
0.63 mm					GREYWACKE		DOLERITE	PHYLLITE																																																																					LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Striated	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																				
0.2 mm	5 - 25 MPa Weak				QUARTZITE		MICRODIORITE	QUARTZITE																																																																																LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec									
0.063 mm	Can be peeled with difficulty. Point of hammer makes shallow indents				TUFF		MICRODIORITE	QUARTZITE																																																																																											LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Striated	Other - specify	Large > 5 l/sec
0.02 mm	1 - 5 MPa Very Weak	Terms include bedded / laminated, foliated, and flow banded.			SILTSTONE		RHYOLITE	SLATE							LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Smooth																																																																																						
0.006 mm	Crumbles under firm hammer blows. Can be peeled by knife			CHALK		ANDESITE			LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous										Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec																																																																																
0.002 mm				GYPSUM		BASALT	HORNFELS						LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous														DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous			Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec																																																																							
	0.6 - 1.0 MPa Extremely weak Gravel size lumps crush between finger and thumb. Indented by thumbnail			MUDSTONE																										LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous						DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous			Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec																																																														
				Very fine grained TUFF																																			LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous						DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																																																					
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					FLINT	VOLCANIC GLASS																																																												LEWES CHALK	Approaches 4 or 5 Classify only if useful and unambiguous	DISTINCTLY WEATHERED MERCIA MUDSTONE	Discontinuous	Continuous in cores	Other index tests Visual assessment	Smooth	Other - specify	Large > 5 l/sec	Medium 0.5 - 5.0 l/sec	Small 0.05 - 5.0 l/sec																															
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