

Soils Description Chart

SOIL TYPE		PARTICLE SIZE (mm)	COMPACTNESS / STRENGTH					
Very coarse soil	BOULDERS	200	Term	Field identification of compactness for very coarse soils				
	COBBLES	60	Loose Dense	By inspection of voids and particle packing.	Description generally in accordance with BS 5930:1999. For further information see British Standard.			
Coarse soils <small>(over 65% sand and gravel sizes)</small>	GRAVELS	Coarse 20	Term	Field identification of compliance for coarse soils	Density / SPT 'N' Value Correlation			
		Medium 6	Loose	Excavated by spade; 50mm peg driven easily.	Density	'N' Value	Ø	
		Fine 2			Dense	Requires pick for excavation; 50mm peg hard to drive.	Very Loose Loose Medium dense Dense Very Dense	<4 4-10 10-30 30-50 >50
	SANDS	Coarse 0.6	Slightly cemented	Visual examination; pick removes soil in lumps which can be abraded.	Secondary constituent of coarse soils			
		Medium 0.2			Prefix	Suffix	Proportion (%)	
		Fine 0.06			Slightly (Sandy) (Sandy) Very (Sandy)	With a little Occasional With some Much / many	COARSE FINE	<5 5-20 20-40
	Fine soils <small>(over 35% sand and gravel sizes)</small>	SILTS	Coarse 0.02	Term	Field identification of compactness / strength for Silts	Secondary constituent of fine soils		
Medium 0.006			Soft or Loose	Easily moulded or crushed in the fingers.	Prefix	Suffix	Proportion (%)	
Fine 0.0002			Firm or Dense	Can be moulded or crushed by strong pressure in the fingers.	Slightly (Sandy) (Sandy) Very (Sandy)	With a little Occasional With some Much / many	<35 35-65 >65	
CLAYS			Term	Field identification of Strength for Clays	Strength			
			Very Soft Soft Firm Stiff Very Stiff	Exudes between fingers when squeezed. Moulded by light finger pressure. Moulded by strong finger pressure. Cannot be moulded - indented by thumb. Indented by thumb nail ('hard' >300 kN/m ²)	<20 kN/m ² 20-40 kN/m ² 40-75 kN/m ² 75-150 kN/m ² >150 kN/m ²			
Organic soils	ORGANIC CLAY SILT SAND	Varies	Term	Field identification of Consistency for Peats	Structure			
	PEATS	Varies	Firm Spongy	Fibres already compressed together. Very compressible and open structure.	Fibrous; Plant remains recognisable and retains some strength			
			Plastic	Can be moulded in hand and smears on fingers	Amorphous: Recognisable plant remains absent.			
					VISUAL IDENTIFICATION OF SOIL TYPES			
BOULDERS				Only seen complete in pits or exposures.				
COBBLES				Often difficult to recover from boreholes.				
GRAVELS				Easily visible to naked eye; particle shape can be described; grading can be described.				
SANDS				Visible to naked eye; very little or no cohesion when dry; grading can be described.				
SILTS				Only coarse silt barely visible to naked eye; exhibits little plasticity; slightly granular or silky to the touch. Disintegrates in water; lumps dry quickly; possess cohesion but can be powdered easily between fingers.				
CLAYS				Dry lumps can be broken but not powdered between fingers; they also disintegrate under water but more slowly than silt; smooth to the touch; exhibits plasticity; sticks to the fingers and dries slowly; shrinks appreciably on drying usually showing cracks.				
ORGANIC SOILS				Contains substantial amounts of organic vegetable matter.				
PEATS				Predominantly plant remains usually dark brown in colour, often with distinctive smell; low bulk density.				

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