

**9210-105
Reference booklet**

Sample

Description			Group symbol	Laboratory criteria				
				Fines (%)	Grading	Plasticity	Notes	
Coarse grained {more than 50% larger than 63 μm BS or No. 200 US sieve size}	Gravels {more than 50% of coarse fraction of gravel size} > 4.75 mm	Well graded gravels, sandy gravels, with little or no fines	GW	0 - 5	Cu > 4 1 < Cc < 3		Dual symbols. If 5-12% fines. Dual symbols if above A-line and 4 < PI < 7	
		Poorly graded gravels, sandy gravels, with little or no fines	GP	0 - 5	Not satisfying GW requirements			
		Silty gravels, silty sandy gravels	GM	> 12		Below A-line or PI < 4	$C_u = \frac{D_{60}}{D_{10}}$ $C_c = \frac{D_{30}^2}{D_{10} \times D_{60}}$	
		Clayey gravels, clayey sandy gravels	GC	> 12		Above A-line and PI > 7		
	Sands {more than 50% of coarse fraction of sand size} 4.75 – 0.075 mm	Well graded sands, gravelly sands, with little or no fines	SW	0 - 5	Cu > 6 1 < Cc < 3			
		Poorly graded sands, gravelly sands, with little or no fines	SP	0 - 5	Not satisfying SW requirements			
		Silty sands	SM	> 12		Below A-line or PI < 4		
		Clayey sands	SC	> 12		Above A-line and PI > 7		
		Inorganic silts, silty or clayey fine sands, with slight plasticity						
		Inorganic clays, silty clays, sandy clays of low plasticity						
Organic silts and organic silty clays of low plasticity								
Fine grained {more than 50% smaller than 63 μm BS or No. 200 US sieve size}	Silty and Clays {Liquid Limit less than 50}	Use plasticity chart						
		Use plasticity chart						
< 0.075 mm	Silty and Clays {Liquid Limit greater than 50}	Use plasticity chart						
		Use plasticity chart						

		Organic clays of high plasticity	OH	Use plasticity chart
Highly organic soils		Peat and other highly organic soils	Pt	

Primary letter		Secondary letter	
G	Gravel	W	Well graded
S	Sand	P	Poorly graded
M	Silt	M	With non-plastic fines
C	Clay	C	With plastic fines
O	Organic soil	L	Of low plasticity (LL < 50)
Pt	Peat	H	Of high plasticity (LL > 50)

