

SOIL CLASSIFICATION FLOWCHART

COARSE GRAINED
50% or less pass No. 200 sieve

FINE GRAINED
More than 50% pass No. 200 sieve

Run sieve analysis

GRAVEL (G)
Greater percentage of coarse fraction retained on No. 4 sieve

SAND (S)
Greater percentage of coarse fraction pass No. 4 sieve

Less than 5% pass No. 200 sieve*
Examine grain size curve

Well graded → **GW**
Poorly graded → **GP**

Between 5% and 12% pass No. 200 sieve
Borderline, to have double symbol appropriate to grading and plasticity characteristics, e.g., GW-GH

Run L.L. and P.L. on No. 40 sieve fraction

Below A-line and hatched zone on plasticity chart → **GM**
Limits plot in hatched zone on plasticity chart → **GM-GC**
Above A-line and hatched zone on plasticity chart → **GC**

More than 12% pass No. 200 sieve
Run L.L. and P.L. on No. 40 sieve fraction

Below A-line and hatched zone on plasticity chart → **SM**
Limits plot in hatched zone on plasticity chart → **SM-SC**
Above A-line and hatched zone on plasticity chart → **SC**

Between 5% and 12% pass No. 200 sieve
Borderline, to have double symbol appropriate to grading and plasticity characteristics, e.g., SW-SM

Run L.L. and P.L. on No. 200 sieve fraction

Below A-line and hatched zone on plasticity chart → **ML**
Limits plot in hatched zone on plasticity chart → **ML-CL**
Above A-line and hatched zone on plasticity chart → **CL**

Color, odor, possibly L.L. and P.L. on oven dry soil
Organic → **OL**
Inorganic → **ML**

Less than 5% pass No. 200 sieve*
Examine grain size curve

Well graded → **GW**
Poorly graded → **GP**

Between 5% and 12% pass No. 200 sieve
Borderline, to have double symbol appropriate to grading and plasticity characteristics, e.g., GW-GH

Run L.L. and P.L. on No. 40 sieve fraction

Below A-line and hatched zone on plasticity chart → **GM**
Limits plot in hatched zone on plasticity chart → **GM-GC**
Above A-line and hatched zone on plasticity chart → **GC**

More than 12% pass No. 200 sieve
Run L.L. and P.L. on No. 40 sieve fraction

Below A-line and hatched zone on plasticity chart → **SM**
Limits plot in hatched zone on plasticity chart → **SM-SC**
Above A-line and hatched zone on plasticity chart → **SC**

Color, odor, possibly L.L. and P.L. on oven dry soil
Organic → **OL**
Inorganic → **ML**

Liquid limit less than 50

Limits plot in hatched zone on plasticity chart → **ML-CL**
Above A-line and hatched zone on plasticity chart → **CL**

Color, odor, possibly L.L. and P.L. on oven dry soil
Organic → **OH**
Inorganic → **MH**

Liquid limit greater than 50

Below A-line on plasticity chart → **CH**
Above A-line on plasticity chart → **CH**

Color, odor, possibly L.L. and P.L. on oven dry soil
Organic → **OH**
Inorganic → **MH**

Note: Sieve sizes are U.S. Standard. *If lines interfere with free-draining properties use double symbol such as GW-GM, etc.

Note: Steve sizes are U.S. Standard.