

WACEL SKILL MATRIX FOR SOIL TESTING AND INSPECTION

#	Skill	Soil I Special Inspector	Shallow Foundation & Retaining Wall Special Inspector
General Soil Knowledge			
1	Can visually identify and classify soil in accordance with USCS	✓	✓
2	Has basic knowledge of and can interpret soils laboratory tests (moisture content, sieve analysis, Atterberg limits, Proctor tests)	✓	✓
3	Can obtain, identify and transport soil samples	✓	✓
4	Can interpret basic earthwork specifications and site plans	✓	✓
5	Understands the role and responsibility of a soils technician on construction sites	✓	✓
6	Familiar with typical properties including compaction behavior of different soil types and their suitability for different purposes		✓
Field Compaction Testing and Observation Knowledge			
7	Can perform field density tests by Nuclear Gauge, Drive Cylinder or Sand Cone method	✓	✓
8	Familiar with commonly used compaction equipment (and the suitability of each) for proper compaction of different soil types	✓	✓
9	Understands the principals of the Sand Cone and Drive Cylinder test including the relationship of volume to density	✓	✓
10	Can prepare a written field report with appropriate locations	✓	✓
11	Can perform field one-point proctors and familiar with applying to families of curves	✓	✓
12	Can perform +4 correction	✓	✓
13	Can perform trench corrections for nuclear gauge testing in trenches	✓	✓
14	Understands typical field stakeout and offset markers	✓	✓
15	Can perform basic topsoil strip check and can observe proofrolling of subgrades	✓	✓
16	Familiar with shrink/swell soil issues	✓	✓
17	Familiar with calibration requirements for field equipment	✓	✓
18	Completed basic radiation safety training and has certification (for Nuclear Gauge users only)	✓	✓
Foundations, Retaining Walls, Embankments and Miscellaneous			
19	Familiar with and can interpret soil borings and geotechnical reports		✓
20	Familiar how to perform Dynamic Cone Penetrometer (DCP) testing		✓

#	Skill	Soil I Special Inspector	Shallow Foundation & Retaining Wall Special Inspector
21	Can perform visual inspection of reinforcing steel placement		✓
22	Familiar with the proper installation of shallow foundation systems to include bearing capacity and footing dimensions		✓
23	Can provide construction observation, testing and special inspections of segmental retaining walls		✓
24	Can read and interpret project drawings and specifications	✓	✓
25	Can evaluate shallow foundations as directed by the geotechnical engineer		✓
26	Familiar with reinforced and segmental retaining walls		✓
27	Familiar with embankments, dams and impoundment structures	✓	✓
28	Familiar with general slope stability issues		✓
29	Familiar with geotextile applications and construction methods		✓
30	Can perform visual inspection of reinforcing steel for shallow foundations and deep foundations		✓