



PDHonline Course C268 (4 PDH)

In Situ Subsurface Testing

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In Situ Subsurface Testing

Terms and Definitions

Anisotropy	Not isotropic, elasticity properties are not the same in all directions
Aperture	A hole or gap in rock mass
Asperities	Roughness, hardness
Cathead, rotating	Spool-shaped attachment on a winch used for hoisting or pulling cables
Clastic	Sedimentary rock made of fragments of preexisting rocks & minerals
Diabase	Igneous rock commonly including feldspar
Dilatancy	Property of volume expansion due to deformation and the hydraulic integrity is altered and permeability is increased
Dip	Angle of fractures, slip planes made with the horizon, measured on rock cores with protractors
Extrusive	Having been forced while molten into fissures of other rock
Fabric	The spacial pattern of rock parcels, grain size, shapes, packing, interlocking particles
Flatjack	A flexible steel envelope, thin as a mortar joint, is hydraulically pressurized to apply stress to the surrounding formation
Foliation	An arrangement of rock in leaf-like layers
Goodman Jack	Used for in-situ investigations of soil and rock deformability by placing in borehole to measure displacement and consolidation-time preparation
Indurate	Having hardness or a hardened condition
Intrusive	Having been forced out in molten condition at surface of earth
Isotropic	Elastic properties are the same in all directions
LVDT	Linear Variable Differential Transformer, electromechanical transducer that converts rectilinear motion of an object into an electrical signal for downhole applications
MPa	Megapascal, 1 MPa = 10.44 ton per square foot (tsf)
Orthorhombic	Crystallization where three unequal axes intersecting at right angles
Osterberg Load Cell	The "O-cell" is hydraulically driven (75-5,000 tons), installed within the foundation to be tested, and allows direct measurement of expansion, compression, side shear and top of pile shaft measurements
Packers	The hydrofracture method places packers, expandable cylindrical rubber sleeves, in a borehole to isolate test sections while under water pressure
Persistence	Measured length of fractures
Rotary wash	Boring method used below groundwater levels, borehole sides are supported with casing or drilling mud
RQD	Rock Quality Designation, percentage of the sum all pieces of sound core over 100mm in length divided by the total length of core run
Saprolite	Decomposed rock remaining in its original position
Slake	Some rocks that crumble when freshly exposed to air, water slaking also occurs
Strike	Direction of contour lines, equal elevations, on the surface of a rock mass
Texture	Grain particle arrangement on a freshly exposed surface
Uniaxial Test	No lateral confinement when an axial force is applied under compression