

Laboratory Laboratory-Cengrs Geotechnica Pvt. Ltd., A-100, Sector-63, Noida, Uttar Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7134 (in lieu of T-1741)

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Validity 23.04.2018 to 22.04.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
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MECHANICAL TESTING

I.	SOIL AND ROCK			
1.	Soil	Water Content	IS 2720 (Part 2): 1973 (RA 2015)	0.1 % to 600 %
		Bulk & Dry Density of Soil	Compendium of Indian Standards on Soil Engineering SP-32 (Part 1)	0.8 g/cc to 4.0 g/cc
		Specific gravity – fine grained soils & rock	IS 2720 (Part 31 & Sec 1): 1980 (RA 2016)	1.0 to 4.0
		Specific gravity – fine, medium & coarse grained soils & rock	IS 2720 (Part 3 & Sec 2): 1980 (RA 2016)	1.0 to 4.0
		Grain Size analysis Hydrometer	IS 2720 (Part 4): 1985 (RA 2015)	0.1 % to 100 %
		Liquid Limit	IS 2720 (Part 5): 1985 (RA 2015)	10 % to 600 %
		Plastic Limit	IS 2720 (Part 5): 1985 (RA 2015)	10 % to 500 %
		Shrinkage Factors	IS 2720 (Part 6): 1972 (RA 2016)	2% to 50%
		Light compaction γ_d M/C	IS 2720 (Part 7): 1980 (RA 2016)	1.0 g/cc to 4.0 g/cc 1 % to 100 %
		Heavy compaction γ_d M/C	IS 2720 (Part 8): 1983 (RA 2015)	1.0 g/cc to 4.0 g/cc 1 % to 100 %
		Unconfined compressive strength	IS 2720 (Part 10): 1991 (RA 2015)	0.05 kg/cm ² to 20 kg/cm ²
		Triaxial Tests	IS 2720 (Part 11): 1971 (RA 2016)	

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		Unconsolidated undrained test (UUT) compression without the measurement of pore water pressure		$c=0.1 \text{ kg/cm}^2$ to 10 kg/cm^2 $\phi=1^\circ$ to 60°
		Consolidated undrained test (CUT) with measurement of pore water pressure	IS 2720 (Part 12): 1981 (RA 2016)	$c=0.1 \text{ kg/cm}^2$ to 10 kg/cm^2 $\phi=1^\circ$ to 60°
		Consolidated drained test (CDT)	BS 1377 (Part 8): 1990	$c=0.1$ to 10 kg/cm^2 $\phi=1^\circ$ to 60°
		Direct Shear	IS 2720 (Part 13): 1986 (RA 2016)	$c=0.1 \text{ kg/cm}^2$ to 4 kg/cm^2 $\phi=1^\circ$ to 60°
				$\phi=1^\circ$ to 60°
		Density Index (relative density) of cohesionless soils	IS 2720 (Part 14): 1983 (RA 2015)	0.8 g/cm^3 to 2.50 g/cm^3
		Consolidation properties	IS 2720 (Part 15): 1986 (RA 2016)	0.1 kg/cm^2 to 16.0 kg/cm^2
		California Bearing Ratio	IS 2720 (Part 16): 1987 (RA 2016)	0.1 % to 100 %
		Permeability (Falling Head)	IS 2720 (Part 17): 1986 (RA 2016)	10^{-1} cm/s to 10^{-10} cm/s
		Permeability of granular soils (Constant Head)	IS 2720 (Part 17): 1986 (RA 2016)	10^{-1} to 10^{-10} cm/s
		Free Swell Index	IS 2720 (Part 40): 1977 (RA 2016)	0.1 % to 700 %
		Swelling pressure	IS 2720 (Part 41): 1977 (RA 2016)	0.1 kg/cm^2 to 12 kg/cm^2
2.	Rock	Point load strength index	IS 8764:1998 (RA 2014)	0.5 kg/cm^2 to 500 kg/cm^2
		Unconfined compressive strength	IS 9143:1979 (RA 2016)	10 kg/cm^2 to 4000 kg/cm^2
		Density	IS 13030:1991 (RA 2016)	0.4 g/cc to 4.0 g/cc

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		Porosity	IS 13030:1991 (RA 2016)	0.1 % to 10 %
		Water Absorption	IS 13030:1991 (RA 2016)	0.01 % to 10 %
		Tensile Strength of Rock by Indirect	IS 10082:1981 (RA 2016)	5 kg/cm ² to 500 kg/cm ²
		Cerchar Abrasivity Index	ASTM D 7625-10-2010	0.3 to 7.0