

Laboratory	Laboratory – Cengrs Geotechnica Pvt. Ltd, Noida		
Accreditation Standard	ISO/IEC 17025: 2005		
Field	Mechanical Testing	Issue Date	23.04.2010
Certificate Number	T-1741	Valid Until	22.04.2012
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S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	SOIL	Water Content	IS 2720 (Part-2) – 1973 (Second Revision)	0.1 – 1000% / 0.1%
		Bulk & Dry Density of Soil	Soil Engineering in Theory and Practice (2 nd Edition), Vol.2. Geotechnical Testing and Instrumentation by Alam Singh and G.R. Chowdhary	0.8-4.0 gm/cc / 0.1%
		Specific gravity – fine grained soils & rock	IS 2720 (Part-III Sec-1) – 1980 First Revision	1.0-4.0 / Nearest 0.01
		Specific gravity – fine medium & coarse grained soils & rock	IS 2720 (Part-III Sec-1) – 1980 First Revision	1.0-4.0 / Nearest 0.01
		Grain Size analysis	IS 2720 (Part IV) – 1985 (Second Revision)	0-100% / Nearest 1%
		Liquid and Plastic Limit	IS 2720 (Part V) – 1985 (Second Revision) Reaffirmed 1995	0 – 1000% / 0.1%
		Shrinkage Factors	IS 2720 (Part VI) – 1972 (First Revision) Reaffirmed 1978	0 - 50% / 0.1%
		Water content-dry density relation using light compaction	IS 2720 (Part VII)-1980 (Second Revision) (Reaffirmed 2007)	M/C= 0-500% $\gamma_d=1.0-4.0$ gm/cc / M/C= 0.1% $\gamma_d=0.01$ gm/cc

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		Water content – dry density relation using heavy compaction	IS 2720 (Part VIII) – 1983 (Second Revision) (Reaffirmed 1995)	M/C = 0-500% $\gamma_d=1.0-4.0$ gm/cc / M/C= 0-0.1% $\gamma_d=0.01$ gm/cc
		Unconfined compressive strength	IS 2720 (Part X) – 1991 (Second Revision)	0.05 - 20 kg/cm ² / Nearest 0.01 kg/cm ²
		Shear Strength parameters of a specimen tested in UUT compression without the measurement of pore water pressure	IS 2720 (Part-XI) – 1971 (Reaffirmed 1978)	C=0-10 kg/cm ² $\phi=0-60^\circ$ / C=0.01 kg/cm ² $\phi=1^\circ$
		Shear strength parameters of soil from CUT compression test with measurement of pore water pressure	IS 2720 (Part XII) – 1981 (First Revision) (Reaffirmed 1987)	C=0-10 kg/cm ² $\phi=0-60^\circ$ / C=0.01 kg/cm ² $\phi=1^\circ$
		Shear strength parameters of soils from CDT compression test	Standard National & International Practice Ref: Bishop & Hankel (1969) : The measurements of soil properties in the Triaxial test	C=0-10 kg/cm ² $\phi=0-60^\circ$ / C=0.01 kg/cm ² $\phi=1^\circ$
		Direct Shear Test	IS 2720 (Part XIII) – 1986 (Second Revision)	0-60° / Cohesion = 0.01 kg/cm ² $\phi=1^\circ$
		Density Index (relative density) of cohesionless soils	IS 2720 (Part 14) – 1983 (First Revision)	0-100% / 0.1 g/cc
		Consolidation properties	IS 2720 (Part 15) – 1986 (First Revision)	0.1–16.0 kg/cm ² / N.A.

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		Laboratory determination of CBR	IS 2720 (Part XVI) – 1987 (Second Revision)	0.1 - 300% / 0.1%
		Laboratory determination of permeability	IS 2720 (Part XVII) – 1986 (First Revision)	10 ⁻¹ to 10 ⁻¹⁰ cm/sec / N.A.
		Laboratory determination of permeability of granular soils (Constant Head)	IS 2720 (Part XXXVI) – 1987 (First Revision)	10 ⁻¹ to 10 ⁻¹⁰ cm/sec/ N.A.
		Free Swell Index	IS 2720 (Part 40) – 1977	0 - 1000% / Nearest 1%
		Swelling pressure of soils	IS 2720 (Part XLI) – 1977 (Reaffirmed 1987)	0-12 kg/cm ² / 0.01 kg/cm ²
2.	ROCK	Point load strength index of rocks	IS 8764 – 1978	0-10 T / 0.1 kg/cm ²
		Unconfined compressive strength of rock materials	IS 9143 – 1979	10-6000 kg/cm ² / 0.1 kg/cm ²
		Laboratory determination of density of Rock materials	IS 13030 – 1991	0.4 to 4.0 gm/cc / 0.01
		Laboratory determination of Water absorption of rock	Procedure given in Manual	NA
		Laboratory determination of Porosity of Rock Material	IS 13030 – 1991	NA

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