

Laboratory Mananda Test House, Dhanauni Road, Derabassi, Distt. Mohali, Punjab

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 05.09.2014

Certificate Number T-1454 **Valid Until** 04.09.2016

Last Amended on - **Page** 1 of 4

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. METALS AND ALLOYS				
1.	Steel	Carbon	IS: 228 (Pt-1): 1987 (RA 2012)	0.15 to 0.35%
		Sulphur	IS: 228 (Pt-9): 1989 (RA 2009)	0.005 to 0.20%
		Phosphorus	IS: 228 (Pt-3): 1987 (RA 2012)	0.005 to 0.20%
		Manganese	IS: 228 (Pt-2): 1987 (RA 2012)	0.10 to 1.0%
		Silica	IS: 228 (Pt-8): 1989 (RA 2009)	0.10 to 0.50%
II. BUILDING MATERIALS				
1.	Cement (OPC and PPC)	Insoluble residue	IS: 4032: 1985 (RA 2014)	0.2 to 8% 2 to 35%
		Magnesia (as MgO)	IS: 4032: 1985 (RA 2014)	1.0 to 8%
		SO ₃	IS: 4032: 1985 (RA 2014)	0.5 to 4%
		Loss on ignition	IS: 4032: 1985 (RA 2014)	1.0 to 10%
		CaO	IS: 4032: 1985 (RA 2014)	35 to 65%
		SiO ₂	IS: 4032: 1985 (RA 2014)	10 to 25%
		Fe ₂ O ₃	IS: 4032: 1985 (RA 2014)	2.5 to 6.0%
		Al ₂ O ₃	IS: 4032: 1985 (RA 2014)	4.0 to 8.0%
		Chloride	IS: 4032: 1985 (RA 2014)	0.004 to 1.0%
		Alkali content (% by mass)		
		-Na ₂ O	IS: 4032: 1985(RA 2014)	0.004 to 1.0%
		-K ₂ O	IS: 4032: 1985(RA 2014)	0.004 to 1.0%
2.	Aggregate	Total soluble Sulphate	IS: 2720 (Pt-27)-1977 (RA 2010)	0.005 to 1.5 gm/ltr.
		Chloride content	IS: 4032-1985 (RA 2014)	0.005 to 1.0%
		pH value	IS: 2720 (Pt-26)-1987 (RA 2011)	1 to 14
		Alkali aggregate reactivity (chemical method)	IS: 2386 (Pt-VII): 1963 (RA 2011)	Rc = 5.0 to 300, Sc=2.0 to 100 millimoles/ltrs

Laboratory Mananda Test House, Dhanauni Road, Derabassi, Distt. Mohali, Punjab

Accreditation Standard ISO/IEC 17025: 2005

Discipline Chemical Testing **Issue Date** 05.09.2014

Certificate Number T-1454 **Valid Until** 04.09.2016

Last Amended on - **Page** 2 of 4

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	Admixture	pH value	IS: 9103: 1999 (RA 2013)	1 to 14
		Dry material content	IS: 9103: 1999 (RA 2013)	1 to 60%
		Ash content	IS: 9103: 1999 (RA 2013)	0.50 to 25%
		Relative density	IS: 9103: 1999 (RA 2013)	1.0 to 2.0
		Chloride content	IS: 6925-1973 (RA 2013)	0.007 to 1.0%
4.	Fly ash	Loss on ignition	IS: 1727-1967 (RA 2013)	0.1 to 20%
		Silica (as SiO ₂)	IS: 1727-1967 (RA 2013)	20 to 65%
		Combined Ferric oxide & Alumina	IS: 1727-1967 (RA 2013)	01 to 40%
		Alumina	IS: 1727-1967 (RA 2013)	0.1 to 30%
		Calcium oxide (CaO)	IS: 1727-1967 (RA 2013)	0.1 to 10%
		Magnesia (MgO)	IS: 1727-1967 (RA 2013)	0.1 to 10%
		Sulphuric Anhydride (SO ₃)	IS: 4032-1985 (RA 2014)	0.005 to 3%
		Alkalies (as Na ₂ O)	IS: 4032-1985 (RA 2014)	0.005 to 5%
5.	Soil	Total soluble sulphate	IS: 2720 (Pt-27)-1977 (RA 2010)	0.005 to 1.5 gm/ltr.
		Chloride content	IS: 4032-1985 (RA 2014)	0.005 to 1.0%
		pH value	IS: 2720 (Pt-26)-1987 (RA 2011)	1 to 14
III. PETROLEUM				
1.	Bitumen & Bituminous products	Specific gravity	IS: 1202-1978 (RA 2008)	0.90 to 1.10
		Absolute viscosity	IS: 1206 (Part-2)-1978 (RA 2009)	600 to 5000 poises
		Flash & fire point	IS: 1209-1978 (RA 2009)	100 to 345°C
		Solubility in trichloroethylene	IS: 1216-1978 (RA 2009)	50 to 100%
		Penetration (Tenths of a millimeter)	IS: 1203-1978 (RA 2008)	5 to 150
		Softening point	IS: 1205-1978 (RA 2009)	20 to 100°C
		Ductility	IS: 1208-1978 (RA 2009)	2 to 100 cm

Laboratory	Mananda Test House, Dhanauni Road, Derabassi, Distt. Mohali, Punjab		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Chemical Testing	Issue Date	05.09.2014
Certificate Number	T-1454	Valid Until	04.09.2016
Last Amended on	-	Page	3 of 4

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Test on residue from thin film oven tests/RTFOT		
		-Viscosity ratio	IS: 1206 (Part-2)-1978 (RA 2009)	1 to 10%
		-Ductility	IS: 1208-1978 (RA 2009)	5 to to 100cm
		Elastic recovery of half thread in ductilometer	IRC: SP: 53-2010	1.0 to 90%
		Separation, Difference in softening point R & B	IRC: SP: 53-2010	1.0 to 10°C
		Test on residue from thin film oven tests/RTFOT	IS: 9382-1979 (RA 2009)	0.10 to 5%
		-Loss in weight	IS: 1205-1978 (RA 2009)	1.0 to 15°C
		-Increase in softening point	IS: 1203-1978 (RA 2008)	1.0 to 50%
		-Reduction in penetration of residue	IRC: SP: 53-2010	1.0 to 70%
		Elastic recovery of half thread in ductilometer	IRC: SP: 11-1997 Appendix 5	0.4 to 10%
		Bitumen binder content		
2.	Bitumen Emulsion	Viscosity by sayboltfurol viscometer	IS: 3117: 2004 (RA 2009)	10 to 400 sec
		Residue on 600micron	IS: 8887: 2004 (RA 2009)	0.01 to 25%
		Coagulation of emulsion	IS: 8887: 2004 (RA 2009)	Qualitative test
		Storage stability after 24h	IS: 8887: 2004 (RA 2009)	0.1 to 5%
		Miscibility with water	IS: 8887: 2004 (RA 2009)	Qualitative test
		Stability to mixing with cement	IS: 8887: 2004 (RA 2009)	Qualitative test
		Tests on residue		
		-Residue by evaporation	IS: 8887: 2004 (RA 2009)	10 to 70%
		-Penetration (Tenths of a millimeter)	IS: 1203: 1978 (RA 2008)	10 to 200
		-Ductility	IS: 1208: 1978 (RA 2009)	20 to 100cm
		-Solubility in trichloroethylene	IS: 1216: 1978 (RA 2009)	85 to 100%

Laboratory Mananda Test House, Dhanauni Road, Derabassi, Distt. Mohali, Punjab
Accreditation Standard ISO/IEC 17025: 2005
Discipline Chemical Testing **Issue Date** 05.09.2014
Certificate Number T-1454 **Valid Until** 04.09.2016
Last Amended on - **Page** 4 of 4

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
IV. WATER				
1.	Water	Volume of 0.02 N H ₂ SO ₄ to neutralize 100 ml of water using mixed indicator.	IS: 456: 2000 (RA 2011)	1 to 75ml
		Volume of 0.02 N NaOH neutralize 100 ml of water using phenolphthalein.	IS: 456: 2000 (RA 2011)	0.10 to 50ml
		Organic solid	IS: 3025 (Pt-18)-1984 (RA 2012)	10.0 to 1000mg/l
		Inorganic solid	IS: 3025 (Pt-18)-1984 (RA 2012)	10.0 to 6000mg/l
		Chloride	IS: 3025 (Pt-32)-1988 (RA 2009)	5.0 to 1000mg/l
		Sulphate	IS: 3025 (Pt-24)-1986 (RA 2009)	5.0 to 1000mg/l
		Suspended solids	IS: 3025 (Pt-17)-1984 (R 2012)	10.0 to 5000mg/l
		pH Value	IS: 3025 (Pt-11)-1983 (RA 2012)	1 to 14

-X-X-X-X-X-X-X-X-X-X-X-X-