Appendix-0

List of Tests (Component-wise)

App-0.1A Tests on Materials

Material	Parameter	Test(s)
Soil	**Grain Size Analysis**	Dry Sieve Analysis (+ 4.75 mm)
		Wet Sieve Analysis (- 4.75 mm & + 75 micron)
		Pipette Method (- 75 micron)
		Hydrometer Method (- 75 micron)
	Atterberg Limits	Liquid Limit (LL) – Casagrande Method
		Plastic Limit (PL) Test
		Plasticity Index (PI)
	Compaction	Proctor Density (Light Compaction) Test
	Free Swell Index (FSI)	Free Swell Index Test
	Deleterious Content	Deleterious Content (Organic Matter) Test
		Deleterious Content (Soluble Sulphate) Test
	Moisture/Water Content	Oven-Drying Method
		Sand Bath Method
		Infra-Red Lamp Torsion Moisture Meter (Rapid Method)
		Gas Pressure by Calcium Carbide & Water (Rapid Method)
	Strength	California Bearing Ratio (CBR) Test
Coarse Aggregate (+ 4.75 mm)	**Gradation**	Dry Sieve Analysis (+ 4.75 mm)
	Aggregate Impact Value	Aggregate Impact Value Test
	Flakiness	Flakiness Index Test
	Elongation	Elongation Index Test
	Water Absorption	Water Absorption Test
	Soundness	Sodium Sulphate Test
		Magnesium Sulphate Test
	Polished Stone Value	Polished Stone Value Test
	Sand Equivalent Value	Sand Equivalent Value Test
	Bituminous stripping value	Bituminous stripping Test
	Deleterious Material & Organic Impurities	Deleterious Material & Organic Impurities
	Alkali Reactivity	Alkali Reactivity Test
	Crushing Strength	Crushing Strength Test
	Ten Percent Fine Value	Ten Percent Fine Value Test
	Moisture Content	Oven-Drying Method
	Fineness Modulus	Fineness Modulus Test
Fine Aggregate (- 4.75 mm & + 75 micron))	**Gradation**	Wet Sieve Analysis (- 4.75 mm & + 75 micron)
	Aggregate Impact Value	Aggregate Impact Value Test
	Water Absorption	Water Absorption Test
	Soundness	Sodium Sulphate Test
		Magnesium Sulphate Test
	Deleterious Material & Organic Impurities	Deleterious Material & Organic Impurities
	Alkali Reactivity	Alkali Reactivity Test
	Moisture Content	Oven-Drying Method
	Fineness Modulus	Fineness Modulus Test
Lime	Optimum Quantity	Optimum Quantity Test
	Purity	Purity Test
	Lime Reactivity	Lime Reactivity Test
Bitumen Emulsion	Viscosity	Saybolt-Furol Viscometer Test
	Residue on 600-micron sieve	Residue on 600-micron sieve Test
	Storage Stability	Storage Stability Test
	Coating ability & Water Resistance	Coating ability & Water Resistance Test
	Particle Charge	Determination of Particle Charge Test
	Coagulation	Coagulation (At Low Temperatures) Test
	Distillation	Distillation Test
	Water Content	Dean and Stark Method
	Miscibility with Water	Miscibility with Water Test
	Stability to mixing Cement	Stability to mixing Cement Test

Index

	Residual Bitumen Quantity	Residue by Evaporation Test
	Ductility (Emulsion obtained from Thin Film Oven Test)	Ductility Test
Bitumen Cutback	Flash Point	Flash Point Test
	Kinematic Viscosity	BS U-Tube Modified Reverse Flow Viscometer Test
	Absolute (Dynamic) Viscosity	Cannon Manning Vacuum Capillary Viscometer
		Standard Brookfield Viscometer
Paving Bitumen	Kinematic Viscosity	BS U-Tube Modified Reverse Flow Viscometer Test
	Absolute (Dynamic) Viscosity	Cannon Manning Vacuum Capillary Viscometer
		Standard Brookfield Viscometer
	Temperature of Binder	Temperature of Binder Test
	Penetration	Penetration Test
	R&B Softening Point	R&B Softening Point Test
	Ductility	Ductility Test
Modified Bitumen	Penetration	Penetration Test
	R&B Softening Point	R&B Softening Point Test
	Elastic Recovery	Elastic Recovery Test
	Temperature of Binder	Temperature of Binder Test
	Flash Point	Flash Point Test
	Separation	Separation Test
	Loss of Mass	Thin Film Oven Test
	Complex Modulus	Complex Modulus Test
	FRASS Breaking Point	FRASS Breaking Point Test
	Kinematic Viscosity	BS U-Tube Modified Reverse Flow Viscometer Test
	Absolute (Dynamic) Viscosity	Cannon Manning Vacuum Capillary Viscometer
		Standard Brookfield Viscometer
Plastic Waste	Gradation (clean & shredded material)	Sieve Analysis
	Ash Content	
	Melt Flow Value	Manufacturer Certificate / Test by NABL Accredited Laboratory
Brick	Water Absorption	Water Absorption Test
	Efflorescence	Efflorescence Test
	Compressive Strength	Compressive Strength Test
Stone	Water Absorption	Water Absorption Test
	Compressive Strength	Compressive Strength Test
Cement	Normal Consistency	Normal Consistency Test
	Fineness	Fineness Test
	Initial and Final Setting Times	Initial and Final Setting Times Test
	Soundness	Le-Chatelier Method
		Autoclave Method
	Compressive Strength	Compressive Strength Test
	Lime Reactivity	Lime Reactivity Test
Fly Ash	Fineness	Fineness Test
	Soundness	Le-Chatelier Method
		Autoclave Method
	Compressive Strength	Compressive Strength Test
	Lime Reactivity	Lime Reactivity Test

App-0.1B Tests on Composite Materials

Composite Material	Component Material	Parameter	Test (s)
Stabilized Soil (Lime/Cement/Fly-Ash/Slag treated)	Stabilized Soil	Unconfined Compressive Strength (UCS)	Unconfined Compressive Strength (UCS) Test
		Pulverization of Soil Clods	Pulverization Test
GSB Sub Base / WMM Base Material	GSB Sub Base Material / WMM Base Material	Gradation	Dry Sieve Analysis (+ 4.75 mm)
			Wet Sieve Analysis (- 4.75 mm & + 75 micron)
		Atterberg Limits	Liquid Limit (LL) – Casagrande Method
			Plastic Limit (PL) Test (- 425 micron)
			Plasticity Index (PI)

		Compaction	Proctor Density (Light Compaction) Test
		CBR on representative sample compacted to 100% proctor density	California Bearing Ratio (CBR) Test
	Coarse Aggregate	Aggregate Impact Value	Aggregate Impact Value Test
Bituminous Paving Mixture (SDBC/DBM design mix material etc)		Stability, Flow, and Void Analysis	Marshall's Stability Test
		Water Sensitivity (Retained/Indirect Tensile Strength)	Water Sensitivity (Retained/Indirect Tensile Strength) Test
Cement Mortar		Consistency	Consistency Test
		Water Retentivity	Water Retentivity Test
		Compressive Strength	Compressive Strength Test
Concrete	Concrete	Workability	Slump Test
			Compaction Factor Test
		Compressive Strength	Schmidt's Rebound Hammer Test
			Ultrasonic Pulse Velocity Test
			Accelerated Curing Test
			Concrete Cubes Test
		Flexural Strength	Flexural Strength Test
	Coarse / Fine Aggregate	Moisture Content	Oven-Drying Method
			Sand Bath Method
			Infra-Red Lamp Torsion Moisture Meter (Rapid Method)
			Gas Pressure by Calcium Carbide & Water (Rapid Method)
Inter-Locking Concrete Block		Water Absorption	Water Absorption Test
		Compressive Strength	Compressive Strength Test
Block		Compressive Strength	Compressive Strength Test
		Water Absorption	Water Absorption Test
		Density	Density Test
RCC Pipe		Load Bearing Capacity	Three Edge Bearing Test
		Leakage	Hydrostatic Test
		Absorption	Absorption Test
		Permeability	Permeability Test
		Straightness	Straightness Test

App-0.2 Tests on Construction

Item	Parameter	Test (s)
Embankment / Subgrade / Sub Bse (GSB etc),/ Base (WMM etc) /BT Pavement (BM, SDBC etc)	**In-Situ (Field) Density/Degree of Compaction**	Sand Replacement Method
		Core Cutter Method
		Nuclear Density Gauge Method
		Non-Nuclear (Electrical) Density Gauge
	Thickness of Layer	Thickness Verification
Water Bound Macadam	**Compaction**	Volumetric Analysis
	Thickness of Layer	Thickness Verification
Bituminous Pavement (OGPC/ MSS/BM/SDBC/ …)	**Binder Content**	Binder Content Test
	Rate of Spread of Binder	Rate of Spread of Binder Test
	Rate of Spread of Aggregates	Rate of Spread of Aggregates Test
	Thickness of Layer	Thickness Verification
CC Pavement	**Compressive Strength**	Core Test

App-0.3 Tests on Workmanship

Item	Parameter	Test (s)
Embankment /Subgrade / Sub Base / Base / Surface Course	**Surface Alignment / Finish**	Horizontal Alignment
		Surface Levels
		Surface Regularity
Brick Work	**Thickness of Joints (General)**	Thickness of Joints (General)
	Thickness of Joints (Arches)	Thickness of Joints (Arches)

	Plaster Finish	Plaster Finish
Structure (Brickwork / Stone Work / Concrete work etc)	Height, Bond and Verticality	Height, Bond and Verticality by Plumb Bob
Rock Cutting	**Deviation of Pre-Split face from plane passing through adjacent holes**	Procedure
	Deviation from Drawings	**Procedure**