

Laboratory JBS Testing Solutions, Plot No. 27, Street No. 2, Adjoining Focal Point Road, Transport Nagar, Jalandhar, Punjab

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-7946

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Validity 29.09.2018 to 25.09.2020

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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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CHEMICAL TESTING

I.	METALS AND ALLOYS			
1.	Low Alloy & Carbon Steel	Carbon	IS 8811 ASTM E 415	0.01 % to 1.5 %
		Silicon		0.05 % to 2.0 %
		Manganese		0.05 % to 2.0 %
		Sulphur		0.001 % to 0.35 %
		Phosphorus		0.001 % to 0.30 %
		Chromium		0.01 % to 8.0 %
		Molybdenum		0.005 % to 2.35 %
		Aluminium		0.003 % to 1.40 %
		Copper		0.01 % to 0.80 %
		Vanadium		0.005 % to 0.50 %
		Boron		0.0005 % to 0.005 %
		Cobalt		0.005 % to 0.35 %
		Nitrogen		0.005 % to 0.90 %
		Lead		0.001 % to 0.15 %
2.	Stainless Steel/ Tool Steel	Tungstun	IS 8811 ASTM E 1086	0.005 % to 0.35 %
		Carbon		0.01 % to 1.5 %
		Silicon		0.01 % to 3.0 %
		Manganese		0.05 % to 15.0 %
		Sulphur		0 to 0.40 %
		Phosphorus		0 to 0.40 %
		Chromium		11 % to 20.0 %
		Molybdenum		0.10 % to 6 %
		Nickel		0.5 % to 16.0 %
		Copper		0.01 % to 5.0 %
		Vanadium		0.01 % to 5.0 %
Niobium	0.01 % to 0.25 %			
Titanium	0.005 % to 2.0 %			
Nitrogen	0.025 % to 0.30 %			

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3.	Cast Iron/ SG Iron	Carbon	ASTM E 1999	2.5 % to 4.1 %
		Silicon		1.0 % to 3.0 %
		Manganese		0.1 % to 0.9 %
		Sulphur		0.01 % to 1.0 %
		Phosphorous		0.01 % to 0.10 %
		Chromium		0.01 % to 1.0 %
		Nickel		0.01 % to 2.5 %
		Molybdenum		0.05 % to 0.50 %
		Copper		0.01 % to 0.2 %
		Magnesium		0.02 % to 0.08 %
		Cerium		0.02 % to 0.09 %
4.	Copper & its alloys	Tin	BSEN 15079	0.2 % to 9.0 %
		Lead		2.0 % to 9.0 %
		Aluminium		0.1 % to 4.0 %
		Iron		0.006 % to 0.4 %
		Nickel		1.2 % to 2.0 %
		Phosphorous		0.001 % to 1.0 %
		Silicon		0.01 % to 0.2 %
		Zinc		2.0 % to 40.0 %
		Antimony		0.1 % to 0.4 %
		Copper		55.0 % to 85.0 %
5.	Low Alloy & Carbon Steel	Carbon	IS 228 (Part 1) IS 1511	0.01 % to 5.0 %
		Silicon	IS 228 (Part 8) IS 1511	0.01 % to 2.0 %
		Manganese	IS 228 (Part 2) IS 1511	0.01 % to 2.0 %
		Sulphur	IS 228 (Part 9) IS 1511	0.008 % to 0.35 %
		Phosphorus	IS 228 (Part 3) IS 1511	0.008 % to 0.30 %
6.	Cast Iron	Carbon	IS 12038	0.1 % to 4.0 %
		Silicon		0.1 % to 3.0 %

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		Manganese		0.2 % to 1.5 %
		Sulphur		0.01 % to 0.15 %
		Phosphorous		0.01 % to 1.5 %
7.	Copper & its alloys	Tin	IS 3685 IS 1264 IS 6912 IS 318 IS 319 IS 320	0.05 % to 12.0 %
		Lead	IS 4027 (Part 11) IS 3685 IS 1264 IS 6912 IS 318 IS 319 IS 320	0.005 % to 20.0 %
		Iron	IS 4027 (Part 8) IS 3685 IS 1264 IS 6912 IS 318 IS 319 IS 320	0.035 % to 5.5 %
		Zinc	IS 4027 (Part 6) IS 3685 IS 1264 IS 6912 IS 318 IS 319 IS 320	0.05 % to 45.0 %
		Copper	IS 3685 IS 1264 IS 6912 IS 318 IS 319	50.0 % to 99.9 %

Deepak Kumar Sharma
Convenor

Anuja Anand
Program Manager

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8.	Steel Products	Galvanized zinc coating (Thickness/ Weight)	IS 320 IS 6745	1 g/m ² to 2000 g/ m ²
		Uniformity	IS 2633	Qualitative
II.	WATER			
1.	Construction Water	pH	IS 3025 (Part 11) IS 456	4 to 12
		Alkalinity (Volume of 0.02 N H ₂ SO ₄ required to neutralize of 100 mL water using Phenolphthalein indicator)	IS 3025 (Part 23) IS 456	0 to 25 mL
		Acidity (Volume of 0.02 N NaOH required to neutralize of 100 mL water using mixed indicator)	IS 3025 (Part 23) IS 456	0 to 5 mL

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ELECTRICAL TESTING

I.	WIRING ACCESSORIES			
1.	Electrical Fans (Ceiling type Fans)	High Voltage	IS 374	0.01 kv to 5 kv
		Insulation Resistance		2 MΩ TO 100 MΩ DC Voltage upto 1000V
		Starting		1 V to 300 V
		Fan Speed and input		0 to 300 V 200 rev/min. to 2000 rev/min. 10 W to 100 W
II.	POWER CAPACITORS			
1.	AC Motor Capacitors upto 25 mfd	Voltage test between Terminals	IS 2993	0.01 kV to 5 kV
		High Voltage Test between Terminals & Case	IS 2993	0.01 kV to 5 kV

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MECHANICAL TESTING

I.	BUILDING MATERIALS					
1.	Cement	Fineness-Blaine's Permeability	IS 4031 Part (2)	150 m ² /kg to 400 m ² /kg		
		Fineness by-Le-Chatelier Method	IS 4031 Part (3)	0.01 mm to 15 mm		
		Soundness-Autoclave method	IS 4031 Part (3)	0.02 % to 1.5 %		
		Standard Consistency	IS 4031 Part (4)	15 % to 40 %		
		Initial Setting Time	IS 4031 Part (5)	10 minutes to 400 minutes		
		Final Setting Time		100 minutes to 600 minutes		
		Compressive strength	IS 4031 Part (6)	0.5 N/mm ² to 100 N/mm ²		
		Density	IS 4031 Part (11)	1.5 g/cc to 3.5 g/cc		
		Fineness by dry sieving	IS 4031 Part (1)	2 % to 30 %		
		2.	Coarse Aggregate	Crushing Value	IS 2386 (Part 4)	5 % to 40 %
				Impact Value	IS 2386 (Part 4)	5 % to 60 %
Abrasion Value	IS 2386 (Part 4)			5 % to 70 %		
10% Fines value	IS 2386 (Part 4)			1 N to 400 N		
Sieve Analysis	IS 2386 (Part 1)			0.1 % to 100 %		
Material Finer than 75 μ/slit content	IS 2386 (Part 1)			0.5 % to 30 %		
Flakiness Index	IS 2386 (Part 1)			5 % to 40 %		
Elongation Index	IS 2386 (Part 1)			5 % to 40 %		
Specific Gravity	IS 2386 (Part 1)			2 to 4		
Water Absorption	IS 2386 (Part 3)			0.1 % to 5 %		
3.	Fine Aggregate	Bulk Density	IS 2386 (Part 3)	1.2 kg/l to 2 kg/l		
		Sieve Analysis	IS 2386 (Part 1)	0.1 % to 100 %		
		Material Finer than 75 μ/slit content	IS 2386 (Part 1)	0.5 % to 30 %		

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		Specific Gravity	IS 2386 (Part 1)	1.5 to 4
		Water Absorption	IS 2386 (Part 3)	0.1 % to 10 %
		Bulk Density	IS 2386 (Part 3)	1.2 kg/l to 2 kg/l
4.	Concrete Cube	Compressive Strength	IS 516	0.5 kN/mm ² to 80 kN/mm ²
5.	Hollow and Solid Blocks	Dimension	IS 2185 (Part 1)	80 mm to 800 mm
		Compressive Strength	IS 2185 (Part 1) IS 2185 (Part 2)	2 kN/mm ² to 80 kN/mm ²
6.	AAC Blocks	Dimension	IS 2185 (Part 2)	80 mm to 800 mm
7.	Bricks (Burnt clay bricks, Pulverised Fuel Ash line bricks)	Dimensions	IS 1077	500 mm to 5000 mm
		Compressive Strength	IS 3495 (Part 1)	2 kN/mm ² to 30 kN/mm ²
		Water Absorption	IS 3495 (Part 2)	1 % to 30 %
		Efflorescence	IS 3495 (Part 3)	Qualitative
8.	Paver Block	Dimensions	IS 15658	20 mm to 600 mm
		Water Absorption	IS 15658	0.1 % to 10 %
		Compressive Strength	IS 15658	10 kN/mm ² to 100 kN/mm ²
		Abrasion Resistance	IS 15658	(100 mm ³ to 65000 mm ³) / 5000 mm ²
9.	Bitumen & Bitumen Mix	Penetration	IS 1203	30 DIV. to 120 DIV.
10.	Bitumen & Bituminous material	Flash Point	IS 1448 (Part 69)	50 °C to 400 °C
		Loss on Heating	IS 1212	0.01 % to 10 %
II.	WOOD AND WOOD PRODUCTS			
1.	Plywood for general purposes	Dimensions Length Width Thickness Squareness Straightness	IS 12049 IS 303	0.01 mm to 2500 mm

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		Water Resistance Test	IS 1734 (Part 5) IS 303	20 °C to 99 °C
		Moisture Content	IS 1734 (Part 1)	1 % to 30 %
		Static Bending Strength	IS 1734 (Part 11)	1 N to 9000 N
		Mycological Test	IS 1734 (Part 7)	Qualitative (Visual)
2.	Block Board	Dimensions Length Width Thickness Squareness Straightness	IS 12049 IS 1659	0.01 mm to 2500 mm
		Water Resistance Test	IS 1659	20 °C to 99 °C
		Mycological Test	IS 1659	Qualitative (Visual)
		Dimensional Changes cause by humidity	IS 1659	Thickness: 0.01 mm to 50 mm Length: 0.01 mm to 200 mm
		Adhesion of Plies	IS 1659	Qualitative (Visual)
		Modules of Rapture	IS 1659	1 N/mm ² to 100 N/mm ²
		Modules of Elasticity	IS 1659	1 N/mm ² to 9000 N/mm ²
		Spot Test	IS 1659	Qualitative (Visual)
3.	Wooden Flush Door Shutters	Dimensions & Sqaureness	IS 4020 (Part 2)	0.01 mm to 2500 mm
		General Flatness Test	IS 4020 (Part 3)	0.01 mm to 10 mm
		Local Plainness Test	IS 4020 (Part 4)	0.1 mm to 1.0 mm
		Impact Indentation Test	IS 4020 (Part 5)	0.1 mm to 0.5 mm
		Flexure Test	IS 4020 (Part 6)	1 mm to 85 mm
		Edge Loading Test	IS 4020 (Part 7)	0.1 mm to 10 mm
		Shock Resistance Test	IS 4020 (Part 8)	Qualitative (Visual)
		Buckling Test	IS 4020 (Part 9)	1 mm to 60 mm
		Slamming Test	IS 4020 (Part 10)	Qualitative (Visual)
		Misuse Test	IS 4020 (Part 11)	Qualitative (Visual)
		Varying Humidity Test	IS 4020 (Part 12)	0.1 mm to 1 mm 90 % to 100 %

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		End Immersion Test	IS 4020 (Part 13)	Qualitative (Visual)
		Knife Test	IS 4020 (Part 14)	Qualitative (Visual)
		Glue Adhesion Test	IS 4020 (Part 15)	Qualitative (Visual)
		Screw Withdrawal Resistance Test	IS 4020 (Part 16)	1 N to 25000 N
4.	Marine Ply & Shuttering	Dimensions Length Width Thickness Squareness Straightness	IS 12049 IS 710	0.01 mm to 2500 mm
		Glue Adhesion dry state (Glue shear strength)	IS 1734 (Part 4) IS 1734 (Part 5)	1 N to 25000 N
		Wet Bending Strength	IS 1734 (Part 11)	1 N to 9000 N
		Moisture Content	IS 1734 (Part 1)	1 % to 30 %
		Static Bending Strength	IS 1734 (Part 11)	1 N to 9000 N
		Mycological Test	IS 1734 (Part 7)	Qualitative (Visual)
5.	Veneered Decorative Plywood	Dimensions Length Width Thickness Squareness Straightness	IS 1328	0.01 mm to 2500 mm
		Water Resistance Test	IS 1328	20 °C to 99 °C
		Moisture Content	IS 1734 (Part 1)	1 % to 30 %
III.	MECHANICAL PROPERTIES OF METALS			
1.	Ferrous and Non Ferrous Alloy (Bars/ Wires/ Sheets/ Strips/ Structural Steel/ Tubular Steel/ Tor	Tensile Strength	IS 1608 ASME-IX	0.1 kN to 1000 kN
Yield Strength		IS 1608 ASME-IX	0.1 kN to 1000 kN	
%Elongation		IS 1608 ASME-IX	0.2 % to 80 %	

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	/TMT/ Fasteners/ Bolts Beam/ Columns/ Channels/ Rails/ Plates/ Sections/ Rods/ Pipes/ Welded Components/ Fittings/ Round Bar/ Valves)	Bend Test	IS 1599 IS 2329	Qualitative {Mandrel Diameter: (8, 10, 12, 15, 16, 18, 20, 24, 25, 28, 30, 32, 36, 40, 42, 48, 50, 54, 56, 60, 64, 66, 70, 72, 75, 80, 84, 88, 90, 96, 100, 108, 110, 112, 120, 125, 128, 132, 140, 144, 150, 154, 160, 168, 175, 180, 192, 196, 200, 210, 216, 224, 240, 252, 280) mm}
		Re Bend Test	IS 1786	Qualitative {Mandrel Diameter: (8, 10, 12, 15, 16, 18, 20, 24, 25, 28, 30, 32, 36, 40, 42, 48, 50, 54, 56, 60, 64, 66, 70, 72, 75, 80, 84, 88, 90, 96, 100, 108, 110, 112, 120, 125, 128, 132, 140, 144, 150, 154, 160, 168, 175, 180, 192, 196, 200, 210, 216, 224, 240, 252, 280) mm}
		Rockwell Hardness HRC	IS 1586	20 HRC to 702 HRC
		Rockwell Hardness HRB	IS 1586	20 HRB to 95 HRB
		% Reduction in Area	IS 1608	0.5 % to 80 %
		Bond Test/ Pull out Test	IS 2770 (Part 1)	0.1 kN to 1000 kN
		Forge Ability Test	IS 6912	Qualitative (Visual)
		Mass/ Meter	IS 1786	0.05 gm to 6 kg 0.1 gm to 30 kg 10 gm to 200 kg 20 gm to 500 kg

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		Linear Measurements	IS 3651 (Part 2)	0.01 mm to 25 mm 0.01 mm to 50 mm 0.01 mm to 150 mm 0.02 mm to 200 mm 0.02 mm to 300 mm 0.02 mm to 600 mm 0.01 mm to 1000 mm 0.5 mm to 1000 mm 1 mm to 3000 mm
		Angular Measurement	IS 5273	1.00 mm to 7.00 mm 7.50 mm to 15.00 mm
		Coating Test	IS 1538	(-) 20 °C to 200 °C
		Thread Gauging	IS 554	15 mm to 150 mm M3 to M64
		Hydrostatic Test	IS 1879 IS 1239 (Part 1)	0.02 kg/cm ² to 70 kg/cm ²
		Compression Test	IS 1879	15 mm to 150 mm
		Wedge Load Test for Bolts	IS 1367 (Part 3)	0.1 kN to 1000 kN
		Proof Load Test for Nuts	IS 1367 (Part 6)	0.1 kN to 1000 kn
		Flattening Test	IS 2328	Qualitative (OD Upto 800 mm)
		Drift Expansion Test	IS 2335	10 mm to 200 mm
		Pneumatic Test	IS 9890	0.02 kg/cm ² to 20 kg/cm ²
		Reverse Bend Test	IS 1716	0.2 mm to 10 mm
		Wrapping Test	IS 1755	0.2 mm to 5 mm
		Compression of Springs	IS 7906 (Part 5)	0.1 kN to 1000 kN

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