

Laboratory Universal Precision Screws, NH-10, Delhi Road, Kharawar By-Pass,
 Rohtak, Haryana
Accreditation Standard ISO/IEC 17025: 2005
Discipline Mechanical Testing **Issue Date** 24.04.2015
Certificate Number T-3395 **Valid Until** 23.04.2017
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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
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MECHANICAL PROPERTIES OF MATERIALS

1	Metallic Material (Raw Material and Final Product)	Tensile Strength	ISO 6892-1: 2009	2kN to 2000 KN
0.2% Proof Stress		ISO 898-1: 2013		
Yield Strength		ISO 898-2: 2012		
%Elongation		ISO 3506-1: 2009	6% to 40%	
%Reduction of Area		ISO 3506-2: 2009	30% to 80%	
		Wedge Tensile Proof Load	ASTM A370: 2011 ASTM F606: 2011 ASTM E8: 2009 IS 1608: 2005 SAE J429: 2011	
		Rockwell Hardness	ISO 6508-1: 2005 ASTM E18: 2011 ASTM A370: 2011 IS 1586: 2000 SAE J417: 1983	20 HRA to 88 HRA / 0.1 20 HRB to 100 HRB/ 0.1 20 HRC to 70 HRC/ 0.1 70HR15N to 94 HR15N/ 0.1 42HR30N to 86 HR30N/ 0.1 20HR45N to 77 HR45N/ 0.1 67HR15T to 93 HR15T/ 0.1 29HR30T to 82 HR30T/ 0.1 10HR45T to 72 HR45 T/ 0.1
		Vickers Hardness	ISO 6507-1: 1997 IS 1501: 2002 ASTM E384: 2011 SAE J417: 1983	HV10: 200-800 HV30: 200-800
		Impact Test- Charpy	ISO 148-1: 2006	300 Joules/ 2.0 (at Ambient Temperature)

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<u>METALLOGRAPHY</u>				
1	Metallic Material (Raw Material and Final Product)	Macrostructure	ASTM E340: 2000 ASTM E381: 2001 ISO 6157-1: 1988 ISO 6157-2: 1995 ISO 6157-3: 1988	Qualitative
		Microstructure	ASTM E407: 2007 ASM Handbook Vol9	Qualitative (50x, 100x, 200x, 500x)
		Estimation of Grain Size	ASTM E112: 2010 IS 4748: 2009	1 to 8
		Estimation of Inclusion Rating	ISO 4967: 1998 ASTM E45: 2010 IS 4163: 2004	Type A: 0.5 to 2.5 Type B: 0.5 to 2.5 Type C: 0.5 to 2.5 Type D: 0.5 to 2.5
		Determination of Case Depth (Micro Hardness Method)	ASTM F2328: 2007 SAE J423: 1998 IS 6416: 1988 (R2003)	Upto 3.00 mm/ 0.01mm
		Determination of Depth of Decarburized Layer	ISO 3887: 2003 ISO 898-1: 2013 ASTM E1077: 2001(R 2005) ASTM F2328: 2007 SAE J419: 1983 IS 6396: 2000	Upto 3.00 mm/ 0.01mm
		Measuring of Coating Thickness by Microscopy	ASTM B487: 2013	Upto 1.00 mm/ 0.010mm
		Measuring of Coating Thickness by X-Ray	ISO 3497: 2000 ASTM B568: 1998	Upto 50 µm/ 0.01 µm

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