

Laboratory	India Materials Technology, Caterpillar India Private Ltd., Machines Division, Melnallathur, Thiruvallur, Tamil Nadu		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Mechanical Testing	Issue Date	08.12.2014
Certificate Number	T-1722	Valid Until	07.12.2016
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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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I. MECHANICAL PROPERTIES OF MATERIALS

1. Ferrous materials Steel and Iron	Tensile Test	ASTM E8/E8M-13a	Load: 1 kN to 580 kN
	Yield strength		
	Ultimate Tensile Strength		
	% Elongation		1% to 50 %
	% Reduction in area		1 % to 90 %
	Hardness Test:- Brinell Hardness (Load 3000 kgf, 750 kgf)	ASTM E10-12	100 to 600 (HBW)
2. Ferrous materials Steel	Hardness Test:	ASTM E18- 14	50 to 84 (HRA) 40 to 90 (HRBW) 20 to 65 (HRC) 70 to 95 (HR15N) 40 to 82 (HR30N)
	a) Rockwell Hardness		
	b) Micro Indentation Hardness (Load 300gf, 500gf, 1kgf)	ASTM E384-11e1	300 to 750 (HV)
	c) Case Depth Measurement	IS 6416-88(RA 2012)	0.1 mm to 10.0 mm

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II. METALLOGRAPHY TEST

1. Ferrous materials

a) Steel and Iron	Microstructural Characterization	IMT_TVR_SWS 9 (ASM Handbook - Vol 9)	50x,100x,200x,500x
b) Steel	a) Determination of Average Ferritic Grain size	ASTM E112-13	Grain size 1 to 8
	b) Inclusion Rating	ASTM E45-13	Level 0 to 3.0 (Including oversized)
c) Cast Iron	Evaluation of Microstructure:- Flake Graphite size Flake graphite type Nodular graphite type	ASTM A247-10	Size class 1 to 8

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