

TEST EQUIPMENT FOR TESTING STEEL PLATES FOR PRESSURE VESSELS IN ACCORDANCE TO IS 2002

ISS Clause No	Test Requirement	TEST METHOD	Test Equip.	Range	Least Count	Calibration Yes/No	REMARKS
5.1.2	Material Grain Size determination	As given in IS 4748					Grain size requirement shall be deemed as fulfilled if, on ladle analysis, the total Al content is not more than 0.02 percent
6.1	Chemical composition	As given in IS 228 or any other established instrumental/chemical method					Method as specified in relevant ISO Standard can also be used for chemical analysis
	Carbon		Carbon – sulphur (Strohlein’s type) apparatus- complete set (consisting of glass parts wooden stand, combustion furnace, thyrister control panel, oxygen cylinder, sulph cup, combustion boats etc.			Self Calibrating Type	
	Mn						
	Si						
	S						
	P						
	Al		Spectrophotometer				
	Cu		Spectrophotometer				
	N2						
	Micro Alloying Elements		Spectrophotometer				
8.1	Freedom from Defects	Visual Inspection					
8.2.1	Laminar discontinuities	Visual Inspection					
8.2.2	Larger discontinuities		Vernier Calliper	0 to 300 mm	0.02 mm	Yes	
			depth Gauge	0-150 mm	0.1 mm	Yes	

9	Diemnsions & Tolerances	IS/ISO 7452	Vernier Calliper	0 to 300 mm	0.02 mm	Yes	
			Micrometer	0 to 25 mm	0.01 mm	Yes	
				0 to 50 mm	0.02 mm	Yes	
				0 to 200 mm	0.02 mm	Yes	
			Steel Tape	0 to 30 m	10 mm	No	
			Steel Scale	0 to 1000 mm	1 mm	No	
9.3	Rolling Mass		Weigh Bridge	0 - 100 MT	500 kg	Yes	
12	Tensile Test	IS 1608	Universal Tensile Testing Machine (UTM) with multiple scales	0 to 100 MT	1 Kg	Yes	
			Extensometer		0.01mm	Yes	
13	Bend Test	IS 1599	Bending Mandrels, Bending Fixtures etc	As per Plate thickness		No	
14	Homogeneity Test (for Plates of Grade 1 material for fire boxes only)		Grooving Machine, Bending Fixture, Hammer/Press Machine				
15	Ultrasonic Test (for Plates of 25mm thick or above)	As given in IS 4225	Ultrasonic Tester				