

## ***SPECIFICATIONS FOR SS TUBE FITTINGS***

1	Type	:	Flareless compression, twin ferrule
2	Material / type	:	SS-316 as per ASTM-A-314 -forged
3	Fluid	:	water / steam/lube oil
4	Max. Pressure	:	200 kg/cm <sup>2</sup> (g)
5	Maximum Temperature	:	320 °C
6	Overall Dimensions	:	As per ANSI-B-1.20.1
7	Hardness	:	> Rockwell B-90
8.0	<b>Tests</b>		
8.1	<b>Type Test</b>		
8.1.1	Chemical Composition test	:	Incoming material as per ASTM-A-314
8.1.2	Ferrule Hardness Test	:	On each size of ferrule as per ASTM-A-3145
8.1.3	Test on Raw Material	:	Raw material for body, nut and ferrules should be tested for physical properties (i.e. tensile strength, % elongation, hardness)
8.1.4	Seismic Test	:	Required. Vibration should be in the frequency range from 1-33 Hz, Peak acceleration at frequencies 1, 1.26, 1.59, 2 and 2.5 Hz should preferably be between 1g and 3.5g or capability of shake table. For and beyond 3.75 Hz Peak acceleration should be 3.5 g. Test duration should be 30 seconds at each frequency. Frequency should be increased in step of 1/3 octave in the specified frequency range 1-33 Hz. Before and after the test the fitting assembly should be tested and should qualify all the other tests.
8.2	<b>Routine Tests</b>		
8.2.1	Overall Dimension Thread	:	Required to be done on 1% items of each type
8.2.2	Check for End Connections	:	
8.2.3	Hydrostatic test	:	At pressure of 300 kg/cm <sup>2</sup> (g); duration = 10 min. Required to be done on 10% items of each type
8.2.4	Pneumatic leak test	:	At a pressure of 4 kg/cm <sup>2</sup> (g); duration = 10 min. Required to be done on 10% items of each type
8.2.5	Reassembly Test	:	Required to be done 25 times on 1% items (min. 2 nos.), from each lot.
9.0	<b>Applicable codes &amp; standards:</b>		
	ASME Boiler and Pressure vessel code		As per section III, Division I, Sub section NB for Class I components.
	ANSI-B-1.1		Unified inch screw threads (UN AND UNR thread form) equivalent for tube end
	ANSI-B.1.20.1		Pipe threads, general purpose
	ANSI-B-1.20.2		
	ASTM-A-213		Standard specification for seamless ferritic & austenitic alloy steel boiler super heater and Heat exchanger tubes
	ASTM-A-262		Standard practice for detecting susceptibility to inter granular attack in austenitic stainless Steels.
	ASTM-A-276		Standard specification for stainless steels bars & shapes.
	ASTM-A-314		Standard specification for stainless steels billets and bars for forging.
	ASTM-A-473		Standard specification for stainless steels forgings
	SAE -J -514		Hydraulic tube fittings
	ANSI-B-31.1		
	ASTM-A-269		
	ISOR-206		