

**4.19.1 Metric Form Specification Sheet For ASME Section VIII, Division 2 Bellows Expansion Joints, Metric Units**

Date: _____		Applicable ASME Code Edition: _____	
1. Item Number: _____		Vessel Manufacturer: _____	
2. Drawing/Tag/Serial/Job Number: _____		Vessel Owner: _____	
3. Quantity: _____		Installation Location: _____	
4. Size: _____ OD _____ ID mm		Expansion Joint Overall Length: _____ mm	
5. Internal Pressure: Design _____ MPa			
6. External Pressure: Design _____ MPa			
7. Vessel Manufacturer Hydrotest Pressure		Internal _____ MPa	External _____ MPa
8. Temperature	Design _____ °C	Operating _____ °C	Upset _____ °C
9. Vessel rating	MAWP _____ MPa	MDMT _____ °C	Installed Position:
10. Design Movements: Axial Compression: (-) _____ mm Axial Extension: (+) _____ mm Lateral: _____ mm Angular: _____ deg			
11. Specified number of Cycles: _____			
12. Shell Material: _____		Bellows Material: _____	
13. Shell thickness _____ mm Shell Corrosion Allowance: Internal: _____ mm External: _____ mm			
14. Shell Radiography: Spot / Full			
15. End Preparation: Square Cut Outside Bevel Inside Bevel Double Bevel (Describe in Line 23 if special)			
16. Heat Exchanger Tube Length Between Inner Tubesheet Faces: _____ mm			
17. Maximum Bellows Spring Rate:		No	Yes – _____ N/mm
18. Internal Liner:		No	Yes – Material _____
19. Drain Holes in Liner:		No	Yes – Quantity/Size: _____
20. Liner Flush with Shell ID:		No	Yes – Telescoping Liners? No Yes
21. External Cover:		No	Yes – Material: _____
22. Pre-Production Approvals Required:		No	Yes – Drawings / Bellows Calculations / Weld Procedures
23. Additional Recommendations: (i.e. bellows pre-set, ultrasonic examination, etc.)			

**Temporary shipping bars are required to maintain assembly length during shipping and vessel fabrication only, and ARE NOT to be used during vessel hydrotest for expansion joint pressure restraint (see paragraph 4.19.3.1(c) and 4.19.3.1(d)).**