



AMENDMENT - NOTIFICATION

AA 085 14 01 Rev.No. 03

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AA 085 14 01: TECHNICAL DELIVERY CONDITIONS FOR ANSI-FLANGES

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1) Cl 6.2 Preservation: In existing matter after 'rust preventive', the word 'material' should be replaced by 'Coating'

2) Cl 6.3 Packing: At the end of the existing matter, the following to be added:-

" The Components shall be wrapped with bitumen paper / tar paper / polyethylene paper to avoid water ingress during transit / handling in transporter's godown. Components shall be packed in a sound closed wooden/steel box"

Please see instructions on the reverse.

Ref: Cl 16.4 of 16th MOM of
IPSC, WG(SMC&RP)

Amd.No.
01

Approved
WG(SMC& RP)

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CORPORATE STANDARD

AA Q85 14 01

REV.No. 03

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TECHNICAL DELIVERY CONDITIONS FOR ANSI-FLANGES

1. SCOPE:

This standard stipulates the technical delivery conditions for slip-on raised face (SORF), slip-on ring joint (SORJ) weldneck raised face (WNRJ), weldneck ring joint (WNRJ) and blind flanges to ANSI:B16.5.

2. TECHNICAL REQUIREMENTS:

The flanges shall comply with ANSI:B 16.5 with the following specific requirements.

2.1 Pressure Class & Size:

The pressure class and size shall be as specified in the enquiry/order. The nominal size shall be specified in the case of SORF, SORJ and blind flanges and nominal size and schedule number shall be clearly indicated in the case of WNRJ & WNRJ flanges.

2.2 Material Specification:

The flanges shall be manufactured by forging. The material of the flanges shall be as per the enquiry/order. The material shall generally comply with the following unless otherwise specified.

Carbon Steel (Low temperature service): ASME:SA350, Gr:LF1

Carbon Steel (High temperature service): ASME:SA105

Alloy Steel..... ASME:SA182, Gr:F11

Stainless Steel..... ASME:SA182, Gr:F22

..... ASME:SA182, Gr:F321

2.3 Heat Treatment:

The flanges shall be properly heat treated as per the relevant material specification.

2.4 Dimensions & Tolerances:

The dimensions and tolerances shall be strictly as per ANSI:B 16.5-1988.

2.5 Finish:

Unless otherwise specified, the finish of the sealing surface shall be as follows:

2.5.1 Raised Face Flanges:

Serrated concentric finish having from 24 Grooves/inch to 40 grooves/inch shall be used. The cutting tool employed shall have an approximate 0.06" or larger Radius. The resultant surface finish shall have 125 μ inch to 500 μ inch roughness.

2.5.2 Ring Joint Flange:

The side wall surface of gasket groove shall not exceed 63 μ inch roughness.

Revision:

Revised as per ANSI:B16.5-1988

Approved:

INTERPLANT STANDARDIZATION
COMMITTEE-WG (SMC+RP)

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Dt. April '95	Dt.	Year:			

**2.6 Edge Preparation:**

Unless otherwise specified, the weld neck flanges shall be supplied with edge preparation for welding with the connecting pipe. The edge preparation shall be as per ANSI:B 16.5 figures 8 and 9.

3. TESTS:

Each melt used for the manufacture of flange forgings shall be tested for chemical analysis and mechanical properties as per relevant material standards.

4. TEST CERTIFICATE:

3 copies of the test certificate covering the results of chemical analysis and mechanical tests shall be furnished. The test certificate format shall be as per Annexure 1. The tests shall be witnessed and the test certificate shall be signed by M/s. Lloyds or any other inspection authority approved by IBR in that country for overseas supplies, and by the inspector authorized by Central Boilers Board (IBR) in case of indigenous supplies.

5. GUARANTEE CERTIFICATE:

The supplier shall furnish a guarantee certificate stating that the flanges supplied shall be suitable for use at the relevant pressure temperature ratings. The guarantee shall be valid for a minimum period of 18 months from the date of supply.

6. MARKING, PRESERVATION AND PACKING:**6.1 Marking:**

The following details shall be punched on the periphery of the rim of each flange.

- a) Manufacturer's name or trade mark.
- b) Pressure class.
- c) Nominal size.
- d) Type of flange (SORF, SORJ, WNRF, WNRJ, Blind & Schedule No. pipe thickness for WN flanges).
- e) Material specification grade.
- f) Melt No.
- g) Test certificate No.
- h) Letter 'R' followed by ring groove No. (in case of ring joint flanges).
- i) Mark of inspecting authority.

6.2 Preservation:

Before despatch, the flanges shall be dried and cleaned and the entire surface shall be well covered with a good quality rust preventive material that will not become fluid and run-off at 65°C.

6.3 Packing:

Flanges shall be bundled by bolting them together or securing them with wire of suitable strength passed through the bolt holes in such a manner that the flanges are paired and no flange facings remain exposed and damaged. In the case of overseas supplies, the packing shall be sea worthy.



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ANNEXURE 1 - RECOMMENDED TEST CERTIFICATE FORMAT FOR FORGINGS

SUPPLIER'S NAME AND ADDRESS

- | | | |
|---|---|------------------------------------|
| 1. Customer: | 9. Reduction Ratio | } Ingot to Bloom
Bloom to Blank |
| 2. TC No. & Date: | 10. Batch No.: | |
| 3. PO No.: | 11. Heat/Mark No. | |
| 4. Process of Making Ingot: | 12. Spec. No. | |
| 5. Decarburisation Process: | 13. Test Bar Size & Nos. | |
| 6. Forging Method: | 14. Supplier of the Ingot/Billet/ Bloom and TC reference. | |
| 7. BH&L's Reference for Approval of Bloom | | |
| 8. Quench: Top _____ % Bottom _____ % | | |

15. FORGINGS COVERED BY TEST CERTIFICATE

S.No.	Drawing No. & Item No.	Description	Quantity & Weight

16. CHEMICAL COMPOSITION (PERCENT)

Element	C	Si	Mn	S	P										
As Per Specn.	Min.														
Actual Values	Max.														

17. HEAT TREATMENT (To be accompanied by Recorder Chart, Whenever called for)

Condition	Heating Rate, °C/hr.	Temp. °C	Soaking Time, Hrs.	Cooling Rate, °C/hr	Cooling Medium

18. MECHANICAL PROPERTIES

As Per Specn.	Min.	Max.	TS N/mm ²	Y.S. 0.5% P _{0.2} Proof N/mm ²	% Elongation 5.65 JS6 G _L	% R.A. Min.	Hardness BHN (Min. 3 values)	Impact Value Joules	Bend Test		
									Angle of bend	Dia of mandrel	Result
Actual Values											

19. SURFACE FINISH (When called for in the order/dwg.)

20. DIMENSIONAL INSPECTION

21. NON-DESTRUCTIVE TESTS

Nature of Test	Acceptance level	Instrument used	Range	Results	Any other detail
Ultrasonic					
Radiographic					
Dye penetrant/ Magnetic Particle					

22. METALLOGRAPHIC EXAMINATION (To be conducted if called for and photo micrographs to be attached along with a report)

Location of Sample	Echant used	Magnification	Constituent observed	Relative %	
Microstructure	Macroetch	Inclusion Rating			

23. OTHER TESTS IF ANY (MICROSCOPIC, SULPHUR PRINTS, ETC.)

24. IDENTIFICATION OF FORGINGS AS PER PURCHASE SPEC

We hereby certify that the items mentioned above have been tested and inspected in our presence and are found to be in accordance with drawings, specifications and purchase order.

SIGNATURE, NAME & SEAL OF THE
INSPECTING OFFICER
DATE

SIGNATURE, NAME & SEAL OF THE
CHIEF OF QUALITY CONTROL/
CHIEF METALLURGIST OF THE SUPPLIER
DATE

INSTRUCTIONS

- Details of all heat treatment processes carried out should be furnished sequentially in 17
- Test certificates are to be furnished as per Purchase order and specification, in A4 size preferably in transparent paper.
- All the entries including signature should be in block colour ink.
- If testing is done by outside agencies, the original TCs shall be furnished
- The actual TC may run into more than one A4 size paper. If needed, to facilitate filling up of details.