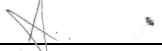
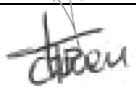
Description: Material Purchase Specification

Technical Data Sheet for the supply of: ASME SA-234, Grade WPB, NPS 6, Schedule 80 End Caps as per ASME BPVC Section II Part A for ASME Section III, Division 1, Subsection NB pressure application

	Name	Signature	Date
Prepared	OL Siko Mechanical Engineer		202608/18
Reviewed	MST Nteo Mechanical Engineer		2026/08/18
Reviewed	TP Choeu QC Manager		2026/08/18
Reviewed	CIK Corbitt QA Manager		2026/08/18
Approved	MD van Heerden MO Manager		

REVISION HISTORY

Rev	Date	Description of changes
1.0	2026/07/08	First Issue
2.0	See signature block	Section 16, para 16.1; 16.2 and 16.3 added

1 SCOPE

1.1 Supplying of SA-234 Grade WPB End Caps that shall conform to all the requirements of:

1.1.1 SA-234 – Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High-Temperature Service, ref. [1];

1.1.2 ASME B16.9 – Factory-Made Wrought Buttwelding Fittings, ref. [9];

1.1.3 ASME Section III, Division 1, Subsection NB – for Code Class 1 components intended for pressure retaining applications, ref. [4];

1.1.4 and this Technical Data Sheet (TDS).

1.2 The supplier shall supply the material in compliance with this TDS.

2 APPLICABLE DOCUMENTS

[1] ASME BPV Code Section II, Part A, SA-234, 2025 Edition.

[2] ASME BPV Code Section II, Part A, SA-960, 2025 Edition.

[3] ASME BPV Code Section III, Subsection NCA, 2025 Edition.

[4] ASME BPV Code Section III, Division 1, Subsection NB, 2025 Edition.

[5] ASME B36.10, 2015 Edition – Welded and Seamless Wrought Steel Pipe.

[6] ASME BPV Code Section III, Division 1, Appendices P-1000, 2025 Edition.

[7] ASME NQA-1, 2022 – Quality Assurance Requirements for Nuclear Facility Applications.

[8] Doc No: AM-QAP4-QAR-0001 Rev 10.0 (QAR for Procurement of Material from Certified Material Organizations and Certificate Holders).

[9] ASME B16.9. 2012 Edition – Factory-Made Wrought Buttwelding Fittings.

3 BASIC REQUIREMENTS

3.1 Ordering Information:

3.1.1	Code of Construction:	ASME Section III, Division 1, Subsection NB (ref. [4])
3.1.2	Material Specification:	ASME Section II, Part A, SA-234 (ref. [1])
3.1.3	ASTM Designation:	Acceptable ASTM Editions – 1982a through 2023a (Table-II-200-1, ASME Section II, Part A)
3.1.4	Quantity:	As per Request for Quote (RFQ) or Order
3.1.5	Description:	Seamless End Caps (ref. [9])
3.1.6	Steel Composition:	Grade WPB (ref. [1])
3.1.7	Construction:	Seamless
3.1.8	Supplementary Requirements:	As specified in this TDS
3.1.9	Additional Requirements:	As specified in this TDS

3.2 SI units of measurement shall be used.

3.3 All documents shall be provided in the English language.

3.4 No Code Cases are allowed.

3.5 Notification and Hold Points, if any, shall be as given on the Purchase Order.

4 CHEMICAL COMPOSITION REQUIREMENTS

4.1 Chemical requirements shall conform to Table 1 in ref. [1] for grade WPB.

4.2 Both heat and product analyses are required.

5 HEAT TREATMENT

5.1 Heat treatment if required shall be performed as required by par. 8 of ref. [1] and ref. [2] for grade WPB.

5.2 Liquid quenching followed by tempering is not permitted.

6 FRACTURE TOUGHNESS REQUIREMENTS

6.1 No impact testing is required as per NB-2311 in ref. [4].

6.2 Determination of RT_{NDT} is not required as per NB-2332 in ref. [4].

7 EXAMINATIONS AND REPAIR REQUIREMENTS

7.1 Liquid Penetrant (PT) or Magnetic Particle (MT) examination as required by NB-2551(b) in accordance with NB-2546 (for PT) or NB-2545 (for MT) of ref. [4] shall be performed on all external as well as all accessible internal surfaces of each pipe fitting after final heat treatment.

7.2 The entire volume of metal for each fitting shall be examined by the ultrasonic method (UT) as required by NB-2551(b) in accordance with NB-2552 of ref. [4].

7.3 Repair by welding is not permitted.

7.4 Surface defects shall be removed according to the requirements of NB-2558 of ref. [4].

8 MECHANICAL REQUIREMENTS

8.1 One Tensile test for each heat shall be performed according to par.10 of ref. [1] and the values shall meet Table 2 for grade WPB of ref. [1].

8.2 At least two pieces per batch (except when only one fitting is produced) shall be hardness tested according to par. 11 of ref. [1]. The maximum hardness shall be 197 HBW.

8.3 Hydrostatic testing is not required for the fittings.

8.4 Records to prove the adequacy of the pressure design shall be provided as required by NB-3642.2 and NB-3612.1(b) of ref. [4].

9 MANUFACTURING PROCESS

9.1 The starting material for fittings shall comply with the requirements of par. 7 of ref. [1].

9.2 According to the requirements of par. 7 of ref. [1] and ref. [2].

9.3 The fittings shall be seamless.

10 WORKMANSHIP, FINISH AND APPEARANCE

10.1 In accordance with par. 15 of ref. [2].

11 TEST AND INSPECTION SUMMARY

11.1 The tests and inspections that shall be performed are summarized in Table 1 of this TDS

Table 1:Test and Inspection Summary

Type	Stage	Method	Criteria
Heat Analysis	During steel making	As per SA-234 ref. [1] and SA-960 ref. [2]	According to section 4.1 of this TDS
Product Analysis	During mechanical testing	As per SA-234 ref. [1] and SA-960 ref. [2]	According to section 4.1 of this TDS
Liquid Penetrant	After manufacturing of fitting	As per NB-2546 of ref. [4]	According to section 7.1 of this TDS
Ultrasonic testing	After manufacturing of the fitting	As per NB-2552 of ref. [4]	According to section 7.2 of this TDS
Tensile Tests	After manufacturing of the fitting	As per SA-234 ref. [1] and SA-960 ref. [2]	According to section 8.1 of this TDS
Hardness Tests	After manufacturing of the fitting	As per SA-234 ref. [1] and SA-960 ref. [2]	According to section 8.2 of this TDS
Proof Test	Performed on representative component	As per B16.9 ref. [9]	According to section 8.4 of this TDS

12 NON-CONFORMANCES

12.1 The Purchaser shall be notified by non-conformance reports of any condition that does not comply with specified requirements of this TDS, the Purchase Order, applicable Codes and Standards as listed in Section 2 of this document, the delivery, or any Counterfeit, Fraudulent or Suspect Items.

12.2 Disposition of the notified non-conformances require approval from the Purchaser.

13 IDENTIFICATION AND MARKING OF MATERIAL

13.1 The pipe fittings shall be identified and marked in accordance with:

13.1.1 Paragraph 20 of SA-234 (ref. [1])

13.1.2 Paragraph 19 of SA-960 (ref. [2])

13.1.3 ASME Section III – NB-2150 (ref. [4])

13.1.4 Requirements of this TDS

13.2 All items shall be marked as per Purchase Order item ref and quantities clearly marked with a waterproof marker.

13.3 Photos of the applied marking on the material shall be sent to the purchaser for acceptance prior to packaging and shipping.

14 PACKAGING AND DELIVERY

14.1 In accordance with ASME NQA-1, Subpart 2.2, Level D of ref. [7] and par. 21 of ref. [2].

14.2 Packaging shall be such as to ensure that the items are not damaged during shipping.

14.3 Each package shall be marked with:

14.3.1 General description of content

14.3.2 The Manufacturers name and product part/model number

14.3.3 Markings to identify the material with the Certified Material Test Report

14.4 It is important that the full complement of items in the Purchase Order is to be delivered in one consignment.

15 RIGHT OF ACCESS

15.1 Access to the Supplier's and its Sub tier Supplier's facilities shall be provided to the Purchaser, Authorized Inspector or others authorized by the Purchaser including his customer and end user for surveillance, inspection, or audit.

16 DOCUMENTATION TO BE PROVIDED BY THE SUPPLIER

16.1 Copies of all the documentation required in section 16.2 shall be sent to the purchaser for acceptance prior to shipping.

16.2 The Material Supplier shall furnish a Certificate of Compliance as well as a Certified Material Test Report (CMTR) in accordance with Article P1000 of ref. [7].

16.3 The CMTR shall report values in Metric Units and shall include, but not limited to test results and information on:

16.3.1 Material Suppliers Quality System Certificate number and expiry date;

16.3.2 List of all certificates and expiry dates;

16.3.3 Description of Material;

16.3.4 Heat/Cast number;

16.3.5 Statement on method of manufacturing;

16.3.6 Heat treatment type (if applicable);

16.3.7 Results of Chemical Analysis (Heat and Product);

16.3.8 Results of Mechanical Property tests;

16.3.9 Results of dimensional checks to ensure the fitting complies with ASME B16.9 (ref. [9]).

16.3.10 Non-destructive Testing/Examination Reports, if applicable;

16.3.11 Photocopy/facsimile, rubbing or digital photo of Identification Markings;

16.3.12 Statement that weld repairs were not made;

16.3.13 Clear reference to the producing mill or factory;

16.4 Original Certificates from the Mill are required.

16.5 All material certificates and test reports shall be traceable to the heat number marked on the material.

16.6 A statement must be included to indicate that no weld repairs have been made.

17 QUALITY ASSURANCE REQUIREMENTS

17.1 All general and specific Quality Assurance requirements shown in the Purchase Order and ref. [8] shall be met.

17.2 As required by NB-2600 in ref. [4], the Material Organization shall have a Quality System Program which meets the requirements of NCA-3300 and NCA-4200 in ref. [3].