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TITLE: **TECHNICAL DATA SHEET**

Description: Material Purchase Specification – Thabana Pipestore Extension **Date:** See Signature Block

Technical Data Sheet for the supply of: ASME SA-240M, Cr and Cr-Ni Stainless-Steel Plate, Sheet and Strip for Pressure Vessels and General Applications

	Name	Signature	Date
Prepared	GJ van Heerden Mechanical Engineer	<i>G.J. van Heerden</i>	20/11/2023
Reviewed	TP Choeu QC Manager	<i>TP Choeu</i>	2023/11/21
Reviewed	CIK Corbitt QA Manager	<i>CIK Corbitt</i>	2023/11/21
Approved	MD van Heerden MO Manager	<i>MD van Heerden</i>	2023/11/22

REVISION HISTORY

Rev	Date	Description of changes
1.0	See signature block	First issue

1 SCOPE

1.1. Supplying of Cr and Cr-Ni Stainless-Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications shall conform to all the applicable requirements of:

- 1.1.1. SA-240M, Specification for Cr and Cr-Ni Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications, ref. [1];
- 1.1.2. SA-480M, Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip, ref. [2];

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

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2 APPLICABLE DOCUMENTS

- [1] ASME BPVC Section II, Part A, SA-240M, 2019 Edition.
- [2] ASME BPVC Section II, Part A, SA-480M, 2019 Edition.
- [3] Doc No: AM-IMS-MAN-0001, Rev. 2.0, SHEQ Manual.

3 BASIC REQUIREMENTS

3.1 Ordering Information:

- 3.1.1 Code of Manufacturing: ASME Section II, Part A, 2019 Edition, ref. [1];
- 3.1.2 Material Specification: SA-240M, ref. [1];
- 3.1.3 ASTM Designation: Acceptable ASTM Editions – 1988c through 2017 with exceptions as stated in Table II-200-1 of ASME Section II, Part A;
- 3.1.4 Name of Material: Austenitic Stainless Steel (UNS designation: S30403);
- 3.1.5 Process: As per Section 4 of this TDS;
- 3.1.6 Grade: 304L;
- 3.1.7 Product Form: Plate, Sheet or Strip;
- 3.1.8 Surface Finish: As per Section 8 of this TDS;
- 3.1.9 Size: As per Purchase Order;
- 3.1.10 Quantity: As per Purchase Order;
- 3.1.11 End Finish: As per Section 8 of this TDS;
- 3.1.12 Test Report Required: Yes, as per Section 15 of this TDS;
- 3.1.13 Certification: Certification is required as per Section 15 of this TDS;
- 3.1.14 Optional Requirements: As per Purchase Order;
- 3.1.15 Supplementary Requirements: None.

3.2 SI units of measure shall be used.

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- 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 MANUFACTURING PROCESS

- 4.1 Shall conform to par. 5 of SA-480M, ref. [2].

5 CHEMICAL COMPOSITION REQUIREMENTS

- 5.1 Shall comply with par. 4 and Table 1 of SA-240M, ref. [1], and par. 6 of SA-480M, ref. [2], for Grade 304L.

6 HEAT TREATMENT

- 6.1 Plate, Sheet or Strip shall be solution annealed at 1040°C minimum, and quenched, according to par. 15 and Table A1.2 of SA-480M, ref. [2].

7 MECHANICAL PROPERTIES

- 7.1 All material mechanical tests and property requirements shall comply with par. 5 and Table 2 of SA-240M, ref. [1], and par. 17 of SA-480M, ref. [2]. The required tests are listed below, and the number of tests as prescribed in par. 16 of SA - 480M, ref. [2]:

- 7.1.1 Tension test, par. 17.1 of ref. [2];
- 7.1.2 Hardness test, par. 17.2 of ref. [2].

8 WORKMANSHIP, FINISH AND APPEARANCE

- 8.1 Workmanship shall comply with par. 10 of SA-480M, ref. [2].
- 8.2 All product forms shall be pickled.
- 8.3 Surface finish, on both surfaces, for Sheet to a No. 2B Finish, and for Strip and Plate to the equivalent of a No. 2B Finish, as stipulated in pars. 11, 12 and 13 of SA-480M, ref. [2].

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8.4 Sheet, Strip and Plate shall be free of defects such as scale, cracks, porosity, sand inclusions or any imperfections that can hinder product quality.

8.5 The variations in dimensions and weight shall conform to par. 9 of SA-480M, ref. [2].

9 FRACTURE TOUGHNESS REQUIREMENTS

9.1 Impact tests are not required, as exempted by the Mechanical Design Code for the Thabana Pipestore Extension Project.

10 REPAIRS

10.1 Repair by welding is **not permitted**.

11 NON-CONFORMANCES

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

11.2 Disposition of the material with non-conformances require approval from the Purchaser.

12 IDENTIFICATION AND MARKING OF MATERIAL

12.1 Material shall be marked in accordance with:

12.1.1 Par. 25.1 of SA-480M, ref. [2];

12.1.2 Requirements of this TDS.

12.2 At minimum the marking shall include:

12.2.1 Specification Number (SA-240M);

12.2.2 Grade (304L);

12.2.3 Size (As per Purchase Order);

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- 12.2.4 Product Form;
- 12.2.5 Heat number;
- 12.2.6 Heat treatment process (As per Section 6 of this TDS);
- 12.2.7 Manufacturer's name or identification mark.

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

12.4 All items shall be marked as per Purchase Order item reference and quantities clearly marked with a waterproof marker and certification thereof shall be submitted to the Purchaser.

13 HANDLING, PACKAGING AND DELIVERY

13.1 Handling, Packaging and Delivery shall conform to par. 25.1 of SA-480M, ref. [2].

13.2 The Supplier shall not dispatch material from its works until it has received the Purchaser's written acceptance of the Material Test Report (MTR).

13.3 All material supplied shall have a good surface finish

13.4 All items shall be protected from damage and contamination from chemicals or solids that are detrimental to the integrity and corrosion resistance of stainless-steel.

13.5 The Material Supplier shall provide suitable means to clearly identify the following information on the outside of the packaging:

13.5.1 Material Specification, Class/Grade of Material;

13.5.2 Overall weight of Package;

13.5.3 Material Organisation's Name and Details.

13.6 Inspection and Release notes shall accompany all material for delivery. No material will be accepted without the abovementioned release notes.

13.7 It is important that the full complement of items listed in the Purchase Order is to be delivered as specified in the Purchase Order.

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14 RIGHT OF ACCESS

14.1 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.

15 DOCUMENTATION TO BE PROVIDED BY THE SUPPLIER

15.1 Copies of the material certificates for the material as required by, par. 8 of SA - 480M, ref. [2], and this TDS shall be submitted by email for acceptance by the Purchaser. No material shall be shipped without the Purchaser's acceptance of the certificates.

15.2 The manufacturer shall provide the test report in accordance with the requirements of par. 8 of ref. [2].

15.3 The Material certificates shall include, but not limited to test results and information as applicable:

15.3.1 Description of material;

15.3.2 Heat treatment type;

15.3.3 Chemical Analyses results (heat and/or product);

15.3.4 Tensile test/property results;

15.3.5 Width in the gage length (if longitudinal strip tension tests were used);

15.3.6 Hardness test results;

15.3.7 Visual acceptance of material surfaces, cleanliness and packaging.;

15.3.8 Heat treatment report (if available);

15.3.9 Clear reference to the producing mill or factory;

15.3.10 A statement that the stainless-steel sheet, strip or plate was manufactured, sampled, tested, inspected, handled and packaged in accordance with the requirements of the material specification (SA-240M) and this TDS.

15.4 Legible copies of the original certificates from the Mill are required.

15.5 All material certificates and test reports shall be traceable to the material identification marking.

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16 QUALITY ASSURANCE REQUIREMENTS

- 16.1 All general and specific Quality Assurance requirements stated in the Purchase Order and this TDS shall be met.
- 16.2 Comply with ref. [3].