

	TECHNICAL SPECIFICATION		I-ET-3010.2D-1200-450-P4X-001							
	CLIENT:		AGUP					SHEET:		1 of 13
	JOB:		HIGH CAPACITY FPSO - GAS EXPORTATION ALL ELECTRIC							
	AREA:		ATAPU 2 AND SÉPIA 2							
SRGE	TITLE:		MATERIAL SPECIFICATION FOR HEAT EXCHANGERS					INTERNAL		
ESUP										
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B	REVISED WHERE INDICATED									
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TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
AREA:	ATAPU 2 AND SÉPIA 2	SHEET: 2 of 13
TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	INTERNAL
		ESUP

SUMMARY

1	OBJECTIVE	3
2	NORMATIVE REFERENCES.....	3
3	DEFINITIONS AND ABBREVIATIONS	7
4	GENERAL REQUIREMENTS	7
5	PLATE HEAT EXCHANGERS.....	8
6	PRINTED CIRCUIT HEAT EXCHANGERS	11

	TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
	AREA:	ATAPU 2 AND SÉPIA 2	
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	
		SHEET: 3 of 13	INTERNAL
			ESUP

1 OBJECTIVE

This document covers the material specification for gasketed plate and printed circuit heat exchangers to be supplied to BUYER for HIGH CAPACITY FPSO - GAS EXPORTATION ALL ELECTRIC unit. Any other exchanger not covered by this specification shall follow I-ET-3010.2D-1200-940-P4X-001 - MATERIAL SELECTION PHILOSOPHY FOR DETAILED DESIGN, applicable mechanical datasheet, and applicable Package Technical Specifications.

All calculations and mechanical datasheets shall be submitted to BUYER approval by SELLER.

The requirements herein listed are applicable to all players performing such related activities within the scope of equipment furnish, including manufacturers, packagers, suppliers, sub suppliers, integrators, constructors, and all technical personnel involved. Within the scope of this document, they are all referred to as being a SELLER.

In addition to the requirements of this technical specification, SELLER shall follow all the requirements of the Exhibit I (SCOPE OF SUPPLY), as well as Exhibit III (DIRECTIVES FOR ENGINEERING EXECUTION), Exhibit IV (DIRECTIVES FOR CONSTRUCTION AND ASSEMBLY), Exhibit V (DIRECTIVES FOR PROCUREMENT), Exhibit VI (DIRECTIVES FOR PLANNING AND CONTROL), Exhibit VII (DIRECTIVES FOR QUALITY MANAGEMENT SYSTEM) and Exhibit VIII (DIRECTIVES FOR COMMISSIONING PROCESS).

2 NORMATIVE REFERENCES

Equipment design and fabrication shall comply with the requirements of this specification, data sheets, rules, codes, standards, and the project specifications as stated below and those referred to herein.

2.1 CLASSIFICATION SOCIETY

- 2.1.1 SELLER shall perform the work in accordance with the requirements of the Classification Society.
- 2.1.2 SELLER is responsible for submitting to the Classification Society all documentation in compliance with stated Rules.
- 2.1.3 Classification Society rules may only be waived upon the formal approval from the Classification Society itself and from BUYER.

2.2 CODES AND STANDARDS

- 2.2.1 The following codes and standards include provisions which, through reference herein, constitute provisions of this specification. The latest issue of the references shall be used unless otherwise agreed.
- 2.2.2 Other recognized standards may be used, provided it can be shown that they meet or exceed the requirements of the standards referenced below. Formal approval from BUYER and from Classification Society is also required.

	TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
	AREA:	ATAPU 2 AND SÉPIA 2	
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	
		SHEET:	4 of 13
			INTERNAL
			ESUP

Table 1: Codes and Standards

API Std 667	- Plate and Frame Heat Exchangers.
ASME BPVC SECTION II	- Boiler and Pressure Vessel Code - Material Specifications.
ASME BPVC SECTION V	- Boiler and Pressure Vessel Code - Non-Destructive Examination.
ASME BPVC SECTION VIII	- Boiler and Pressure Vessel Code - Rules for Construction of Pressure Vessels - Div.1 and Div. 2.
ASME BPVC SECTION IX	- Boiler and Pressure Vessel Code – Welding, Brazing and Fusing Qualifications.
ASME B16.5	- Pipe Flanges and Flanged Fittings NPS ½ Through NPS 24 Metric/Inch Standard
ASTM A516	- Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
ASTM B265	- Standard Specification for Titanium and Titanium Alloy Strip, Sheet, and Plate
ASTM A36	- Standard Specification for Carbon Structural Steel
ISO 21457	- Materials selection and corrosion control for oil and gas production systems
ISO 15156	- Petroleum and Natural Gas Industries – Materials for use in H ₂ S Containing Environments in Oil and Gas Production – Part 1, 2, and 3

2.3 GOVERNMENT REGULATION

2.3.1 Brazilian Government regulations are mandatory and shall prevail, if more stringent, over the requirements of this specification and other herein references.

Table 2: Brazilian Regulatory Standard and Government Regulation

NR-13	Brazilian Regulatory Standard – Boilers, Pressure Vessels, Pipes and Metallic Storage Tanks
NR-17	Brazilian Regulatory Standard – Ergonomic
NR-26	Brazilian Regulatory Standard – Safety Signaling
NR-37	Brazilian Regulatory Standard – Safety and Health in Petroleum Platforms
IBAMA	Brazilian IBAMA environmental regulations concerning the discharge of all types of effluents
INMETRO	INMETRO Resolution nº 115, March 21 st 2022

2.4 REFERENCE DOCUMENTS

2.4.1 The latest issue of the reference documents listed on Table 3 shall be used unless otherwise agreed.



TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
AREA:	ATAPU 2 AND SÉPIA 2	SHEET: 5 of 13
TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	INTERNAL
		ESUP

Table 3: Reference Documents

DR-ENGP-I-1.15	- COLOR CODING
DR-ENGP-M-I-1.3	- SAFETY ENGINEERING GUIDELINE
I-DE-3010.2D-1200-942-P4X-002	- GENERAL ARRANGEMENT
I-DE-3010.2D-1200-94A-P4X-001	- AREA CLASSIFICATION – GENERAL
I-DE-3010.2D-1223-944-P4X-021	- OIL COOLER A/B
I-DE-3010.2D-1223-944-P4X-022	- OIL COOLER C/D
I-DE-3010.2D-1231-944-P4X-006	- EXPORTATION GAS COMPRESSION - 1ST STAGE "A"
I-DE-3010.2D-1231-944-P4X-007	- EXPORTATION GAS COMPRESSION - 1ST STAGE "B"
I-DE-3010.2D-1231-944-P4X-008	- EXPORTATION GAS COMPRESSION - 1ST STAGE "C"
I-DE-3010.2D-1231-944-P4X-009	- EXPORTATION GAS COMPRESSION - 1ST STAGE "D"
I-DE-3010.2D-1231-944-P4X-010	- EXPORTATION GAS COMPRESSION – 2ND STAGE "A"
I-DE-3010.2D-1231-944-P4X-011	- EXPORTATION GAS COMPRESSION - 2ND STAGE "B"
I-DE-3010.2D-1231-944-P4X-012	- EXPORTATION GAS COMPRESSION - 2ND STAGE "C"
I-DE-3010.2D-1231-944-P4X-013	- EXPORTATION GAS COMPRESSION - 2ND STAGE "D"
I-DE-3010.2D-1251-944-P4X-008	- INJECTION WATER HEATER
I-DE-3010.2D-1252-944-P4X-001	- INJECTION GAS COMPRESSION UNIT - TRAIN A
I-DE-3010.2D-1252-944-P4X-002	- INJECTION GAS COMPRESSION UNIT - TRAIN B
I-DE-3010.2D-1254-944-P4X-001	- CO2 COMPRESSION UNIT - TRAIN A - 1ST STAGE
I-DE-3010.2D-1254-944-P4X-002	- CO2 COMPRESSION UNIT - TRAIN B - 1ST STAGE
I-DE-3010.2D-1254-944-P4X-003	- CO2 COMPRESSION UNIT - TRAIN C - 1ST STAGE
I-DE-3010.2D-1254-944-P4X-004	- CO2 COMPRESSION UNIT - TRAIN A - 2ND STAGE
I-DE-3010.2D-1254-944-P4X-005	- CO2 COMPRESSION UNIT - TRAIN B - 2ND STAGE
I-DE-3010.2D-1254-944-P4X-006	- CO2 COMPRESSION UNIT - TRAIN C - 2ND STAGE
I-DE-3010.2E-5120-944-P4X-001	- ENGINE ROOM CENTRAL FRESH WATER COOLING SYSTEM
I-DE-3010.2D-5124-944-P4X-002	- COOLING WATER SYSTEM - NON CLASSIFIED AREA
I-DE-3010.2D-5124-944-P4X-004	- COOLING WATER CLASSIFIED AREA HEAT EXCHANGERS
I-DE-3010.2D-5331-944-P4X-001	- PRODUCED WATER COOLER AND FLASH DRUM



TECHNICAL SPECIFICATION	N°.	I-ET-3010.2D-1200-450-P4X-001	REV:	B	
	AREA:	ATAPU 2 AND SÉPIA 2		SHEET:	6 of 13
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS		INTERNAL	ESUP

I-ET-3010.00-1200-940-P4X-002	- GENERAL TECHNICAL TERMS
I-ET-3010.00-1200-251-P4X-001	- REQUIREMENTS FOR BOLTING MATERIALS
I-ET-3010.00-1200-431-P4X-001	- THERMAL INSULATION FOR MARITIME INSTALLATIONS
I-ET-3010.00-1200-956-P4X-002	- GENERAL PAINTING
I-ET-3010.2D-1200-200-P4X-001	- PIPING SPECIFICATION FOR TOPSIDES
I-ET-3010.2E-1200-200-P4X-001	- PIPING SPECIFICATION FOR HULL
I-ET-3010.2D-1200-940-P4X-001	- MATERIAL SELECTION PHILOSOPHY FOR DETAILED DESIGN
I-ET-3010.00-1200-456-P4X-001	- REQUIREMENTS FOR PLATE HEAT EXCHANGER DESIGN AND FABRICATION
I-ET-3010.00-1200-459-P4X-001	- REQUIREMENTS FOR PRINTED CIRCUIT HEAT EXCHANGER SPECIFICATION
I-FD-3010.2D-1223-456-P4X-002	- OIL COOLER (P-1223005A/D)
I-FD-3010.2D-1231-459-P4X-001	- EXPORTATION GAS COMPRESSION UNIT COOLERS (P-UC-1231002A/D-01/02)
I-FD-3010.2D-1251-456-P4X-001	- INJECTION WATER HEATER (P-1251002A/B)
I-FD-3010.2D-1252-459-P4X-001	- INJECTION GAS COMPRESSION UNIT COOLERS (P-UC-1252001A/B)
I-FD-3010.2D-1254-459-P4X-001	- CO2 COMPRESSION UNIT COOLERS (P-UC-1254001A/C-01/02)
I-FD-3010.2E-5120-456-P4X-001	- ENGINE ROOM CENTRAL FRESH WATER COOLER (P-5120501A/B)
I-FD-3010.2D-5124-456-P4X-001	- PLATE HEAT EXCHANGER COOLING WATER - CLASSIFIED AREA (P-5124001A/J)
I-FD-3010.2D-5124-456-P4X-002	- PLATE HEAT EXCHANGER COOLING WATER - NON CLASSIFIED AREA (P-5124002A/C)
I-FD-3010.2D-5331-456-P4X-001	- PRODUCED WATER COOLER (P-5331001A/C)

2.5 CONFLICTING REQUIREMENTS

- 2.5.1 In case of conflicting information between this Specification (ET) and other specific BUYER's document (data sheet) the specific BUYER's document shall prevail.
- 2.5.2 In case of conflicting requirements between this technical specification and other cited references, the most stringent shall prevail. If necessary, the SELLER may revert to BUYER for clarification.

	TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
	AREA:	ATAPU 2 AND SÉPIA 2	
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	
		SHEET: 7 of 13	INTERNAL
			ESUP

3 DEFINITIONS AND ABBREVIATIONS

3.1 DEFINITIONS

3.1.1 All Terms and definitions are established in the latest revision I-ET-3010.00-1200-940-P4X-002 - GENERAL TECHNICAL TERMS.

3.2 ABBREVIATIONS

Table 4: Abbreviations

FPSO	Floating Production Storage and Offloading
CLASS	Classification Society
P&ID:	Piping & Instrumentation Diagram
PCHE	Printed Circuit Heat Exchanger

4 GENERAL REQUIREMENTS

4.1 DESIGN

4.1.1 SELLER shall design and fabricate the equipment for a minimum lifetime of 30 years.

4.1.2 The design shall be in accordance with I-ET-3010.00-1200-456-P4X-001 - REQUIREMENTS FOR PLATE HEAT EXCHANGER DESIGN AND FABRICATION and I-ET-3010.00-1200-459-P4X-001 - REQUIREMENTS FOR PRINTED CIRCUIT HEAT EXCHANGER SPECIFICATION, as applicable.

4.1.3 Base materials for the heat exchangers shall follow those indicated in item 5 for plate heat exchangers and item 6 for printed circuit heat exchangers.

4.2 FLANGES AND GASKETS

4.2.1 For Plate Heat Exchanger, the nozzles and flanges material, shall be compatible with the connected piping flange specification, as defined in I-ET-3010.2D-1200-200-P4X-001 - PIPING SPECIFICATION FOR TOPSIDES or I-ET-3010.2E-1200-200-P4X-001 - PIPING SPECIFICATION FOR HULL, and specific P&ID (document provided by BUYER).

4.2.2 For Printed Circuit Heat Exchanger (PCHE), the nozzles and flanges material shall be compatible with the connecting header material.

4.2.3 Gaskets of plate heat exchangers shall be according to requirements of I-ET-3010.00-1200-456-P4X-001 - REQUIREMENTS FOR PLATE HEAT EXCHANGER DESIGN AND FABRICATION.

4.3 BOLTS AND NUTS

4.3.1 Fasteners (Studs, bolts, tightening bolts and nuts) shall follow the requirements of I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS.

4.4 COATING

4.4.1 Painting requirements shall be according to I-ET-3010.00-1200-956-P4X-002 -



TECHNICAL SPECIFICATION	N°:	I-ET-3010.2D-1200-450-P4X-001	REV:	B	
	AREA:	ATAPU 2 AND SÉPIA 2		SHEET:	8 of 13
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS		INTERNAL	
				ESUP	

GENERAL PAINTING. Color code adopted shall be in accordance with DR-ENGP-I-1.15 - COLOR CODING.

5 PLATE HEAT EXCHANGERS

5.1 OIL COLLECTING AND SEPARATING (U-1223)

5.1.1 OIL COOLER (P-1223005A/D)

P-1223005A/D- MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316.
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	ISO 15156 H ₂ S Service.
Reference Documents	I-FD-3010.2D-1223-456-P4X-002 - OIL COOLER (P-1223005A/D) I-DE-3010.2D-1223-944-P4X-021 - OIL COOLER A/B I-DE-3010.2D-1223-944-P4X-022 - OIL COOLER C/D

5.2 PRODUCED WATER SYSTEM (U-5331)

5.2.1 PRODUCED WATER COOLER (P-5331001 A/C)

P-5331001 A/C - MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316.
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	ISO 15156 H ₂ S Service.
Reference Documents	I-FD-3010.2D-5331-456-P4X-001 - PRODUCED WATER COOLER (P-5331001A/C) I-DE-3010.2D-5331-944-P4X-001 - PRODUCED WATER COOLER AND FLASH DRUM



TECHNICAL SPECIFICATION

Nº. I-ET-3010.2D-1200-450-P4X-001

REV: B

AREA: ATAPU 2 AND SÉPIA 2

SHEET: 9 of 13

TITLE: **MATERIAL SPECIFICATION FOR HEAT EXCHANGERS**

INTERNAL

ESUP

5.3 COOLING WATER SYSTEM (U-5124)

5.3.1 PLATE HEAT EXCHANGER COOLING WATER – CLASSIFIED AREA (P-5124001A/J)

P-5124001A/J - MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316.
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	Not Applicable
Reference Documents	I-DE-3010.2D-5124-944-P4X-004 - COOLING WATER CLASSIFIED AREA HEAT EXCHANGERS I-FD-3010.2D-5124-456-P4X-001 - PLATE HEAT EXCHANGER COOLING WATER - CLASSIFIED AREA (P-5124001A/J)

5.3.2 PLATE HEAT EXCHANGER COOLING WATER – NON CLASSIFIED AREA (P-5124002A/C)

P-5124002A/C - MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316.
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	Not Applicable
Reference Documents	I-DE-3010.2D-5124-944-P4X-002 - COOLING WATER SYSTEM - NON CLASSIFIED AREA I-FD-3010.2D-5124-456-P4X-002 - PLATE HEAT EXCHANGER COOLING WATER - NON CLASSIFIED AREA (P-5124002A/C)

	TECHNICAL SPECIFICATION	Nº. I-ET-3010.2D-1200-450-P4X-001	REV: B
	AREA:	ATAPU 2 AND SÉPIA 2	
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS	
		SHEET: 10 of 13	INTERNAL
			ESUP

5.4 CENTRAL FRESH WATER COOLING SYSTEM (U-5120)

5.4.1 ENGINE ROOM CENTRAL FRESH WATER COOLER (P-5120501A/B)

P-5120501A/B - MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	Not Applicable
Reference Documents	I-FD-3010.2E-5120-456-P4X-001 - ENGINE ROOM CENTRAL FRESH WATER COOLER (P-5120501A/B) I-DE-3010.2E-5120-944-P4X-001 - ENGINE ROOM CENTRAL FRESH WATER COOLING SYSTEM

5.5 INJECTION WATER SYSTEM (U-1251)

5.5.1 INJECTION WATER HEATER (P-1251002A/B)

P-1251002A/B - MATERIAL DATA	
Heat Transfer Plates:	Titanium ASTM B 265 Gr1
Fixed and movable covers plates:	ASTM A 516 Gr 70
Support stand:	ASTM A 36 / A 572 G50
Carrying bar (Upper) and guide bar (Lower):	SS 316
Flanges:	According to item 4.2
Tie bolts:	According to I-ET-3010.00-1200-251-P4X-001 - REQUIREMENTS FOR BOLTING MATERIALS
Special Service	Not Applicable
Reference Documents	I-DE-3010.2D-1251-944-P4X-008 - INJECTION WATER HEATER I-FD-3010.2D-1251-456-P4X-001 - INJECTION WATER HEATER (P-1251002A/B)



PETROBRAS

TECHNICAL SPECIFICATION

Nº. I-ET-3010.2D-1200-450-P4X-001

REV: B

AREA: ATAPU 2 AND SÉPIA 2

SHEET: 11 of 13

TITLE: **MATERIAL SPECIFICATION FOR HEAT EXCHANGERS**

INTERNAL

ESUP

6 PRINTED CIRCUIT HEAT EXCHANGERS

6.1 INJECTION GAS COMPRESSION SYSTEM (U-1252)

6.1.1 INJECTION GAS COMPRESSION DISCHARGE COOLER (P-UC-1252001A/B)

P-UC-1252001A/B- MATERIAL DATA	
Core	SS316L (UNS31603)
Sheath	Super Duplex (UNS32750) ^{1,2}
Header	Super Duplex (UNS32750) ^{1,2}
Flanges:	Super Duplex (UNS32750) ^{1,2}
Special Service	ISO 15156 H ₂ S Service. Low temperature (-50°C)
Reference Documents	I-FD-3010.2D-1252-459-P4X-001 - INJECTION GAS COMPRESSION UNIT COOLERS (P-UC-1252001A/B) I-DE-3010.2D-1252-944-P4X-001 - INJECTION GAS COMPRESSION UNIT - TRAIN A I-DE-3010.2D-1252-944-P4X-002 - INJECTION GAS COMPRESSION UNIT - TRAIN B
Note 1: UNS32760 is also acceptable	
Note 2: Coating according to I-ET-3010.00-1200-956-P4X-002 - GENERAL PAINTING	

6.2 CO2 COMPRESSION SYSTEM (U-1254)

6.2.1 CO2 COMPRESSION - 1ST STAGE DISCHARGE COOLER (P-UC-1254001A/C-01)

P-UC-1254001A/C-01- MATERIAL DATA	
Core	SS316L (UNS31603)
Sheath	Super Duplex (UNS32750) ^{1,2}
Header	Super Duplex (UNS32750) ^{1,2}
Flanges:	Super Duplex (UNS32750) ^{1,2}
Special Service	ISO 15156 H ₂ S Service.
Reference Documents	I-DE-3010.2D-1254-944-P4X-001 - CO2 COMPRESSION UNIT - TRAIN A - 1ST STAGE I-DE-3010.2D-1254-944-P4X-002 - CO2 COMPRESSION UNIT - TRAIN B - 1ST STAGE I-DE-3010.2D-1254-944-P4X-003 - CO2 COMPRESSION UNIT - TRAIN C - 1ST STAGE I-FD-3010.2D-1254-459-P4X-001 - CO2 COMPRESSION UNIT COOLERS (P-UC-1254001A/C-01/02)
Note 1: UNS32760 is also acceptable	
Note 2: Coating according to I-ET-3010.00-1200-956-P4X-002 - GENERAL PAINTING	



TECHNICAL SPECIFICATION	N°:	I-ET-3010.2D-1200-450-P4X-001	REV:	B	
	AREA:	ATAPU 2 AND SÉPIA 2		SHEET:	12 of 13
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS		INTERNAL	
				ESUP	

6.2.2 CO2 COMPRESSION - 2ND STAGE DISCHARGE COOLER (P-UC-1254001A/C-02)

P-UC-1254001A/C-02- MATERIAL DATA		
Core	SS316L (UNS31603)	
Sheath	Super Duplex (UNS32750) ^{1, 2}	
Header	Super Duplex (UNS32750) ^{1, 2}	
Flanges:	Super Duplex (UNS32750) ^{1, 2}	
Special Service	ISO 15156 H ₂ S Service.	
Reference Documents	I-DE-3010.2D-1254-944-P4X-004	- CO2 COMPRESSION UNIT - TRAIN A
	- 2ND STAGE	
	I-DE-3010.2D-1254-944-P4X-005	- CO2 COMPRESSION UNIT - TRAIN B
	- 2ND STAGE	
	I-DE-3010.2D-1254-944-P4X-006	- CO2 COMPRESSION UNIT - TRAIN C
- 2ND STAGE		
I-FD-3010.2D-1254-459-P4X-001	- CO2 COMPRESSION UNIT COOLERS	
(P-UC-1254001A/C-01/02)		
Note 1: UNS32760 is also acceptable Note 2: Coating according to I-ET-3010.00-1200-956-P4X-002 - GENERAL PAINTING		

6.3 EXPORTATION GAS COMPRESSION SYSTEM (U-1231)

6.3.1 EXPORTATION GAS COMPRESSION 1ST STAGE DISCHARGE COOLER (P-UC-1231002A/D-01)

P-UC-1231002A/D-01- MATERIAL DATA		
Core	SS316L (UNS31603)	
Sheath	Super Duplex (UNS32750) ^{1, 2}	
Header	Super Duplex (UNS32750) ^{1, 2}	
Flanges:	Super Duplex (UNS32750) ^{1, 2}	
Special Service	ISO 15156 H ₂ S Service. Low temperature (-46°C)	
Reference Documents	I-DE-3010.2D-1231-944-P4X-006	- EXPORTATION GAS COMPRESSION
	- 1ST STAGE "A"	
	I-DE-3010.2D-1231-944-P4X-007	- EXPORTATION GAS COMPRESSION
	- 1ST STAGE "B"	
	I-DE-3010.2D-1231-944-P4X-008	- EXPORTATION GAS COMPRESSION
	- 1ST STAGE "C"	
I-DE-3010.2D-1231-944-P4X-009	- EXPORTATION GAS COMPRESSION	
- 1ST STAGE "D"		
I-FD-3010.2D-1231-459-P4X-001	- EXPORTATION GAS COMPRESSION	
UNIT COOLERS (P-UC-1231002A/D-01/02)		
Note 1: UNS32760 is also acceptable Note 2: Coating according to I-ET-3010.00-1200-956-P4X-002 - GENERAL PAINTING		



TECHNICAL SPECIFICATION	N°.	I-ET-3010.2D-1200-450-P4X-001	REV:	B	
	AREA:	ATAPU 2 AND SÉPIA 2		SHEET:	13 of 13
	TITLE:	MATERIAL SPECIFICATION FOR HEAT EXCHANGERS		INTERNAL	ESUP

6.3.2 EXPORTATION GAS COMPRESSION 2ND STAGE DISCHARGE COOLER (P-UC-1231002A/D-02)

P-UC-1231002A/D-02- MATERIAL DATA		
Core	SS316L (UNS31603)	
Sheath	Super Duplex (UNS32750) ^{1, 2}	
Header	Super Duplex (UNS32750) ^{1, 2}	
Flanges:	Super Duplex (UNS32750) ^{1, 2}	
Special Service	ISO 15156 H ₂ S Service. Low temperature (-46°C)	
Reference Documents	I-DE-3010.2D-1231-944-P4X-010 - EXPORTATION GAS COMPRESSION - 2ND STAGE "A" I-DE-3010.2D-1231-944-P4X-011 - EXPORTATION GAS COMPRESSION - 2ND STAGE "B" I-DE-3010.2D-1231-944-P4X-012 - EXPORTATION GAS COMPRESSION - 2ND STAGE "C" I-DE-3010.2D-1231-944-P4X-013 - EXPORTATION GAS COMPRESSION - 2ND STAGE "D" I-FD-3010.2D-1231-459-P4X-001 - EXPORTATION GAS COMPRESSION UNIT COOLERS (P-UC-1231002A/D-01/02)	
Note 1: UNS32760 is also acceptable Note 2: Coating according to I-ET-3010.00-1200-956-P4X-002 - GENERAL PAINTING		