

GP 07-05-01	Coils for Fired Heaters and Boilers	March 2002
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Coils for Fired Heaters and Boilers

GP 07-05-01

Scope

[I] This Global Practice (GP) covers the design, fabrication, inspection, and shipping of bare and extended surface tubes/pipes and fittings for new or replacement coils for fired heaters, boilers, and heat recovery steam generators (HRSR). It does not apply to cast tubes.

[I] An asterisk (*) indicates that a decision by the Owner's Engineer is required or that additional information is to be supplied by Purchaser.

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1. Required References

[I] This Section lists Practices and Standards that are generically referenced and assumed to be a part of this document. Unless otherwise specified herein, use the latest edition.

1.1. Global Practices–ExxonMobil Engineering Practices

GP 03-16-01	Flanged Joints, Gaskets, and Bolting
GP 03-18-01	Piping Fabrication Shop or Field
GP 18-03-02	Statically Cast Steel and Alloy Pressure Containing Parts and Tube Supports for Fired Heaters
GP 18-07-01	Welding Procedures
GP 18-10-01	Additional Requirements for Materials
GP 18-12-01	Positive Material Identification
GP 20-01-01	Inspection of Equipment and Materials

1.2. API–American Petroleum Institute

API STD 530	Calculation of Heater-Tube Thickness in Petroleum Refineries
API STD 560	Fired Heaters for General Refinery Services

1.3. ASME–American Society of Mechanical Engineers

ASME B1.20.1	Pipe Threads, General Purpose (Inch)
ASME SEC I	BPVC Section I - Rules for Construction of Power Boilers

1.4. ASTM–American Society for Testing & Materials

ASTM E 570	Standard Practice for Flux Leakage Examination of Ferromagnetic Steel Tubular Products
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2. Additional Requirements

* [I] The following Practices and Standards shall be used with this GP as specified by Purchaser.

2.1. Global Practices-ExxonMobil Engineering Practices

GP 03-06-01	Piping for Instruments
GP 20-01-02	Administrative Procedures for Obtaining Inspection
GP 18-10-01	Additional Requirements for Materials

2.2. ASME–American Society of Mechanical Engineers

ASME B31.1	Power Piping
ASME SEC II A	BPVC Section II A - Materials Part A - Ferrous Material Specifications
ASME SEC II B	BPVC Section II B - Materials Part B - Nonferrous Material Specifications
ASME SEC II C	BPVC Section II C - Materials Part C - Specifications for Welding Rods, Electrodes, and Filler Metals
ASME SEC II D	BPVC SECTION II Materials Part D - Properties Non-Interfiled
ASME SEC V	BPVC Section V - Nondestructive Examination

3. Design of Tubes and Headers

3.1. Fired Heater Tubes

- 1) [R] Minimum tube wall thickness calculations shall be based upon all of the following:
 - a) Minimum thickness calculated per current edition of API STD 530.
 - b) 100,000 hour design life (minimum rupture strength).
 - c) * Design temperature, if not specified by Owner, shall include 25°F (14°C) temperature allowance (TA).
 - d) * Operating conditions (normal and emergency) specified by the Owner.
 - e) * Corrosion allowance, if not specified by the Owner's Engineer, shall be per the current edition of API STD 560.
- 2) [R] Minimum new wall thickness for any tube shall be:
 - a) Radiant, Shield and Convection Tubes: 0.125 in. (3.18 mm) + CA but not less than Schedule 40.
 - b) Studded Tubes: 0.220 in. (5.59 mm).

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