

GP 03-18-01	Piping Fabrication Shop or Field	July 2001
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Piping Fabrication Shop or Field

GP 03-18-01

Scope

[I] This Global Practice (GP) covers the fabrication, inspection and shop testing of piping.

[I] An asterisk (*) indicates that a decision by Purchaser is required or that additional information shall be specified 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 03-19-01	Piping Erection, Testing, Flushing, and Cleaning
GP 18-07-01	Welding Procedures
GP 18-10-01	Additional Requirements for Materials
GP 20-01-01	Inspection of Equipment and Materials
GP 20-01-03	Quality Programs

1.2. ASME–American Society for Testing and Materials

ASME SEC V	BPVC Section V - Nondestructive Examination
ASME SEC VIII D1	BPVC Section VIII - Rules for Construction of Pressure Vessels - Division 1
ASME B16.25	Buttwelding Ends
ASME B31.3	Process Piping

2. Additional Requirements

- 1) * [I] Fabrication of all piping shall be performed in accordance with ASME B31.3, ASME B31.1, or ASME SEC I as applicable, and with the additional requirements of this GP.
- 2) [I] When compliance with any code or standard by a local jurisdiction is mandatory, the requirements prescribed therein shall also be met.
- 3) * [I] The following Practices and Standards shall be used with this GP as specified by the Owner's Engineer.

2.1. Global Practices–ExxonMobil Engineering Practices

GP 18-04-01	Postweld Heat Treatment of Equipment Handling Alkaline Solutions
GP 18-12-01	Positive Material Identification
GP 19-03-02	Refractory Linings for Pressure Vessels and Piping

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2.2. ASME–American Society of Mechanical Engineers

ASME SEC I	BPVC Section I - Rules for Construction of Power Boilers
ASME B1.20.1	Pipe Threads, General Purpose (Inch)
ASME B31.1	Power Piping

2.3. AWS–American Welding Society

AWS A5 Series	Filler Metal Specifications
AWS D1.1/D1.1M	Structural Welding Code - Steel
AWS QC7	Standard for AWS Certified Welders

2.4. ASTM–American Society for Testing and Materials

ASTM E 162	Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source
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2.5. CEN–European Committee for Standardization

CEN EN 462-1	Non-Destructive Testing - Image Quality of Radiographs - Part 1: Image Quality Indicators (Wire Type) - Determination of Image Quality Value
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2.6. DIN–Deutsches Institut für Normung E.V.

DIN 54109	Non-Destructive Testing; Image Quality of Radiographs; Concepts, Image Quality Indicators, Determination of Image Quality Value
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2.7. JIS–Japanese Industrial Standards

JSA Z 3104	Methods of Radiographic Examination for Welded Joints in Steel
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2.8. PFI–Pipe Fabrication Institute

PFI ES-24	Pipe Bending Methods, Tolerances, Process and Material Requirements
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3. Definitions

Term	[I] Description
Combustible liquids	High flash liquids [flash points 100°F (38°C) or higher] when handled at temperatures more than 15°F (8°C) below their flash point.
Dangerous materials	As used herein, includes the following: Toxic materials, such as phenol, hydrogen sulfide, chlorine Highly corrosive materials, such as acids, caustic and other similar materials Flammable materials (including light hydrocarbons lighter than 68 degrees API) Combustible liquids Boiler feedwater and steam, in systems requiring ASME Class 300 and higher ratings Oxygen in concentrations greater than 35 percent
Flammable liquids	Low flash liquids [flash point below 100°F (38°C)], and high flash liquids [flash point 100°F (38°C) or higher] when handled at temperatures above or within 15°F (8°C) of their flash points.
Flammable materials	(Including hydrocarbons lighter than 68 degrees API). Flammable liquids; hydrocarbon vapors; and other vapors, such as hydrogen and carbon disulfide, that are readily ignitable when released to atmosphere.
Inspector	Refers to the Owner's Representative.
Non-dangerous materials	As used herein, include all materials not listed as Dangerous Materials.
Small piping connections	Any branch connection NPS 2 (50 mm) or less.
Wet H₂S	Greater than 50 ppm of H ₂ S in the water phase.

4. Small Piping Documentation

[I] The following information for small piping connections shall be shown on the Engineering Drawings:

- 1) Specific location and orientation of small piping connections.
- 2) Connection size and schedule.
- 3) Valve or fitting type.

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