

Conformance of Victaulic IPS Grooved Couplings and Fittings to ASME B31.1 Power Piping Code (2020) Requirements



26.06

The American Society of Mechanical Engineers (ASME) established the B31 Pressure Piping Code Committees to promote safety in pressure piping design and construction through published engineering criteria. The basic consideration of the Codes is safety, however, the Codes are not designed to replace competent engineering design or judgement. Most importantly, the Codes do not "approve", "rate", or "endorse" any items of construction; proprietary devices, or activity. The Codes do not put a limit on conservatism and, conversely, the Codes also allow for designs that are capable of more rigorous engineering analysis which justifies less conservative designs. A final point of importance is that the Codes strive to keep abreast of all current technologies regarding improvements to materials, fabrication, and any other new developments in the piping industry.

Victaulic grooved couplings and fittings may be utilized on ASME B31.1 Power Piping Code applications within their published temperature and pressure parameters. ASME B31.1 designates the use of mechanical joints, specifically grooved joints that use gaskets as method of leak resistance under Paragraph 100.2, Definitions, which defines a Mechanical Joint as: *"A joint for the purpose of mechanical strength or leak resistance, or both, where the mechanical strength is developed by threaded, grooved, rolled, flared, or flanged pipe ends, or by bolts, pins, and compounds, gaskets, rolled ends, caulking or machined and mated surfaces. These joints have particular application where ease of disassembly is desired."*

Paragraph 106 - Fittings, Bends, and Intersections permits grooved end fittings under Paragraphs 106.1 (A) and 106.1 (B). Paragraph 106.1 (A) states: *"Threaded, flanged, grooved and shouldered, socket-welding, buttwelding, compression, push-on, mechanical gland, and solderjoint fittings made in accordance with the applicable standards in Table 126.1 may be used in power piping systems within the material, size, pressure, and temperature limitations of those standards, and within any further limitations specified in this Code."*

Victaulic grooved couplings and fittings are "Listed Components" as defined in Paragraph 104.7.1 Listed Components. Paragraph 104.7.1 permits the use of materials "manufactured in accordance with the standards listed in Table 126.1." The pertinent standards in Table 126.1 include:

- ASTM F1476, "Performance of Gasketed Mechanical Couplings for Use in piping Applications"
- ASTM F1548, "Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications"
- ANSI/AWWA C606, "Grooved and Shouldered Joints"

A piping system designed, and installed utilizing Victaulic flexible and rigid couplings is ideal for accommodating both primary and secondary stresses. Flexible couplings allow both deflection and axial movement at each coupling joint, which can be designed to accommodate system thermal expansion, pipeline misalignment, pipeline differential settlement, and seismic movement. Rigid couplings maintain pipe alignment, as they are designed to minimize any differential movement between the two joining elements. Both flexible and rigid couplings can be modeled within commercially available pipe stress analysis programs. Victaulic will provide allowable stress limitations for coupling to ensure that system stress can be evaluated by the design engineer and maintained within safe level in accordance with Part 5 of ASME B31.1. Also, Victaulic Piping System Design Engineers are available to perform system stress analysis, to assist system designers utilizing these tools, or to assist system designers with the selection of pipe support types.

References

[26.01 Design Data](#)

Note: Both flexible and rigid coupling hangers spacing recommendations can be found in this document.

[26.02 Calculating and Accommodating Pipe Line Thermal Growth](#)

[26.03 The Victaulic Piping Method for Accommodating Pipe Offsets](#)

[26.04 Victaulic CouplingVibration Attenuation Characteristics](#)

[26.06 Conformation of Victaulic IPS Grooved Couplings and Fittings to ASME B31.1 Power Piping Code Requirements](#)

[26.07 Conformance of Victaulic IPS Grooved Couplings and Fittings to ASME B31.9 Building Services Piping Code Requirements](#)

[26.09 Victaulic Grooved Piping System for Vacuum Services](#)

[26.12 Design Data for Seismic Applications of Victaulic Grooved Systems](#)

[26.13 Seismic Testing Program](#)

[26.15 Grooved Piping Systems in Buried Applications](#)

[WP-18 Modeling Victaulic Couplings in Piping System Stress Analysis Programs](#)

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