Valve Inspection and Testing

API STANDARD 598
TENTH EDITION, OCTOBER 2016

AMERICAN PETROLEUM INSTITUTE

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Suggested revisions are invited and should be submitted to the Standards Department, API, 1220 L Street, NW, Washington, DC 20005, standards@api.org.

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1 Scope

1.1 This standard covers inspection, examination, supplementary examinations, and pressure test requirements for resilient-seated, nonmetallic-seated (e.g. ceramic), and metal-to-metal-seated valves of the gate, globe, plug, ball, check, and butterfly types. Resilient seats are considered to be:

a) soft seats, both solid and semisolid grease type (e.g. lubricated plug);

b) combination soft and metal seats (e.g. laminated seat rings);

c) any other type of seat material designed to meet resilient seat leakage rates as specified in Table 5.

API Standard 598 supplements the API standards that reference it, but it may also be applied to other types of valves by agreement between the purchaser and the valve manufacturer. Reference Annex A for information to be specified by the purchaser.

1.2 The inspection requirements pertain to examinations and testing by the valve manufacturer and any supplementary examinations that the purchaser may require at the valve manufacturer's plant. The test requirements cover both required and optional pressure tests at the valve manufacturer's plant or at a facility mutually agreeable to both the manufacturer and the purchaser.

1.3 The following tests and examinations are specified in this standard:

a) shell test,

b) backseat test,

c) low-pressure closure test,

d) high-pressure closure test,

e) double block and bleed high-pressure closure test,

f) visual examination of castings,

g) high-pressure pneumatic shell test.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ASME B16.11,[1] *Forged Fittings, Socket-Welding and Threaded*

ASME B16.34, *Valves—Flanged, Threaded, and Welding End*

MSS SP-45,[2] *Bypass and Drain Connections*

MSS SP-55, *Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components Visual Method for Evaluation of Surface Irregularities*

[1] ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.
[2] Manufacturers Standardization Society of the Valve and Fittings Industry, 127 Park Street, NE, Vienna, Virginia 22180-4602, www.mss-hq.com.