

Valve Inspection and Testing

API STANDARD 598
EIGHTH EDITION, MAY 2004



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Downstream Segment

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NOTES TO PURCHASER

1. If required, the following will be specified in the purchase order:
 - a. Inspections by the purchaser at the valve manufacturer's plant (see 2.1).
 - b. Inspections by the purchaser outside the valve manufacturer's plant (see 2.2).
 - c. Address for inspection notices (see 2.3).
 - d. Any supplementary examination required (see 2.6).
 - e. Type of backseat test (see 3.2.2).
 - f. Low-pressure closure test (see 3.3.3, 3.3.4 and 4.4.2).
 - g. High-pressure closure test (see 3.4 and 4.5).
 - h. High-pressure pneumatic shell test (see 3.5).
 - i. Test fluid temperature for low temperature valves (see 3.6.1).
 - j. Use of a wetting agent in the test water (see 3.6.4).
 - k. Certificate of compliance (see 5.1).
2. If this standard is used for valves not covered by this standard, the purchaser will specify the extent to which the standard is to be applied.

Valve Inspection and Testing

1 General

1.1 SCOPE

1.1.1 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 semi-solid grease type (e.g., lubricated plug).
- b. Combination soft and metal seats.
- c. Any other type valve designed to meet resilient seat leakage rates as specified in Table 5.

API Std 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.

1.1.2 The inspection requirements pertain to examinations and testing by the 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.

1.1.3 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. Visual examination of castings.
- f. High-pressure pneumatic shell test.

1.2 REFERENCED PUBLICATIONS

1.2.1 The most recent editions of the following standards, codes, and specifications are cited in this standard:

ASME¹

B16.11 *Forged Steel Fittings, Socket-Welding and Threaded*

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

MSS²

SP-45 *Bypass and Drain Connections*

¹ASME International, 3 Park Avenue, New York, New York 10016. www.asme.org

²Manufacturers Standardization Society of the Valve and Fittings Industry, Inc., 127 Park Street, N.E., Vienna, Virginia 22180. www.mss-hq.com

SP-55 *Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components—Visual Method*

SP-91 *Guidelines for Manual Operation of Valves*

1.2.2 This standard supplements the following API valve standards:

API

Std 594 *Check Valves: Wafer, Wafer Lug and Double Flanged Type*

Std 599 *Metal Plug Valves—Flanged, Threaded and Welding End*

Std 602 *Compact Steel Gate Valves—Flanged, Threaded, Welding and Extended Body Ends*

Std 603 *Corrosion-Resistant, Bolted Bonnet Gate Valves—Flanged and Butt-Welding Ends*

Std 608 *Metal Ball Valves—Flanged, Threaded, and Butt-Welding Ends*

Std 609 *Butterfly Valves: Double Flanged, Lug- and Wafer-Type*

2 Inspection, Examination, and Supplementary Examination

2.1 INSPECTION AT THE VALVE MANUFACTURER'S PLANT

The purchaser will specify in the purchase order his intention to inspect valves and witness tests and examinations at the valve manufacturer's plant. The purchaser's inspector shall have free access to any part of the plant concerned with manufacture of the valves whenever work on the order is under way.

2.2 INSPECTION OUTSIDE THE VALVE MANUFACTURER'S PLANT

When the purchaser specifies that the inspection will include shell components manufactured at locations other than the valve manufacturer's plant, these components shall be subject to the purchaser's inspection at the location where they are manufactured.

2.3 INSPECTION NOTICE

When inspection by the purchaser is specified, the valve manufacturer shall notify the purchaser 5 working days prior to the required valve testing and any specified supplementary inspections or examinations, addressing the notice as stated in the purchase order. The valve manufacturer shall also give the purchaser 5 working days' notice of where and when shell components manufactured outside the valve manufacturer's plant may be inspected, if such inspection is required.