Process Valve Qualification Procedure

API RECOMMENDED PRACTICE 591
SIXTH EDITION, APRIL 2019

AMERICAN PETROLEUM INSTITUTE

Special Notes

API publications necessarily address problems of a general nature. With respect to particular circumstances, local, state, and federal laws and regulations should be reviewed.

Neither API nor any of API's employees, subcontractors, consultants, committees, or other assignees make any warranty or representation, either express or implied, with respect to the accuracy, completeness, or usefulness of the information contained herein, or assume any liability or responsibility for any use, or the results of such use, of any information or process disclosed in this publication. Neither API nor any of API's employees, subcontractors, consultants, or other assignees represent that use of this publication would not infringe upon privately owned rights

API publications may be used by anyone desiring to do so. Every effort has been made by the Institute to assure the accuracy and reliability of the data contained in them; however, the Institute makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any authorities having jurisdiction with which this publication may conflict.

API publications are published to facilitate the broad availability of proven, sound engineering and operating practices. These publications are not intended to obviate the need for applying sound engineering judgment regarding when and where these publications should be utilized. The formulation and publication of API publications is not intended in any way to inhibit anyone from using any other practices.

Any manufacturer marking equipment or materials in conformance with the marking requirements of an API standard is solely responsible for complying with all the applicable requirements of that standard. API does not represent, warrant, or guarantee that such products do in fact conform to the applicable API standard.

Classified areas may vary depending on the location, conditions, equipment, and substances involved in any given situation. Users of this Standard should consult with the appropriate authorities having jurisdiction.

Users of this Standard should not rely exclusively on the information contained in this document. Sound business, scientific, engineering, and safety judgment should be used in employing the information contained herein.

Foreword

Nothing contained in any API publication is to be construed as granting any right, by implication or otherwise, for the manufacture, sale, or use of any method, apparatus, or product covered by letters patent. Neither should anything contained in the publication be construed as insuring anyone against liability for infringement of letters patent.

The verbal forms used to express the provisions in this document are as follows.

Shall: As used in a standard, “shall” denotes a minimum requirement in order to conform to the standard.

Should: As used in a standard, “should” denotes a recommendation or that which is advised but not required in order to conform to the standard.

May: As used in a standard, “may” denotes a course of action permissible within the limits of a standard.

Can: As used in a standard, “can” denotes a statement of possibility or capability.

This document was produced under API standardization procedures that ensure appropriate notification and participation in the developmental process and is designated as an API standard. Questions concerning the interpretation of the content of this publication or comments and questions concerning the procedures under which this publication was developed should be directed in writing to the Director of Standards, American Petroleum Institute, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001. Requests for permission to reproduce or translate all or any part of the material published herein should also be addressed to the director.

Generally, API standards are reviewed and revised, reaffirmed, or withdrawn at least every five years. A one-time extension of up to two years may be added to this review cycle. Status of the publication can be ascertained from the API Standards Department, telephone (202) 682-8000. A catalog of API publications and materials is published annually by API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001.

Suggested revisions are invited and should be submitted to the Standards Department, API, 200 Massachusetts Avenue, NW, Suite 1100, Washington, DC 20001, standards@api.org.

Contents

Contents

Process Valve Qualification Procedure

1 Scope

This recommended practice (RP) provides recommendations for evaluation of a manufacturer's valve construction and quality management system for the purpose of determining a manufacturer's capability to provide new valves manufactured in accordance with the applicable standards listed in Section 2. Testing per this RP that does not have an established requirement in the applicable standard is for information only.

Qualification of valves under this RP is "manufacturing facility specific" and does not cover valves manufactured by other manufacturing facilities, whether owned by the same manufacturer or a third party.

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, except that new editions may be used on issue and shall become mandatory upon the effective date specified by the publisher or 12 months from the date of the revision (where no effective date is specified).

API RP 578, *Material Verification Program for New and Existing Alloy Piping Systems*

API 594, *Check Valves: Flanged, Lug, Wafer, and Butt-welding*

API 598, *Valve Inspection and Testing*

API 599, *Metal Plug Valves—Flanged, Threaded and Welding Ends*

API 600, *Bolted Bonnet Steel Gate Valves for Petroleum and Natural Gas Industries*

API 602, *Steel Gate, Globe and Check Valves for Sizes DN 100 and Smaller for the Petroleum and Natural Gas Industries*

API 603, *Corrosion-resistant, Bolted Bonnet Gate Valves—Flanged and Welding End*

API 607, *Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats*

API 608, *Metal Ball Valves—Flanged, Threaded, and Butt-welding Ends*

API 609, *Butterfly Valves: Double Flanged, Lug- and Wafer-type*

API 623, *Steel Globe Valves-Flanged and Butt-welding Ends, Bolted Bonnets*

API 624, *Type Testing of Rising Stem Valves Equipped with Flexible Graphite Packing for Fugitive Emissions*

API 641, *Type Testing of Quarter Turn Valves for Fugitive Emissions*

ASME B1.1 [1], *Unified Inch Screw Threads (UN & UNR Thread Form)*

ASME B16.5, *Pipe Flanges and Flanged Fittings NPS 1/2 through NPS 24 Metric/Inch Standard*

[1] ASME International, 3 Park Avenue, New York, New York 10016-5990, www.asme.org.