Type Testing of Process Valve Packing for Fugitive Emissions

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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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Introduction

The purpose of this API standard is to establish a uniform procedure for evaluation of process valve stem packing. The testing approaches defined within this standard provide a method for evaluating packing systems. This testing program shall provide a basis for the comparison of the emissions and life cycle performance of packing.

Use of this standard assumes the execution of its provisions is entrusted to appropriately qualified and experienced personnel because it calls for procedures that can be injurious to health if adequate precautions are not taken. This standard refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage of the procedure.

Type Testing of Process Valve Packing for Fugitive Emissions

1 Scope

This standard specifies the requirements for comparative testing of valve stem packing for process applications where fugitive emissions are a consideration. Packing(s) shall be suitable for use at service temperatures –29 °C to 538 °C (–20 °F to 1000 °F). Factors affecting fugitive emissions performance that are considered by this standard include temperature, pressure, thermal and mechanical cycling, and corrosion.

This standard is not intended to replace type testing of valve assemblies or valve production testing.

This standard establishes requirements and parameters for the following tests:

a) fugitive emissions;

b) corrosion; and

c) packing material composition and properties.

Test methods apply to packing for use in on-off valves with the following stem motion(s):

a) rising stem;

b) rotating stem; or

c) rising and rotating stem.

2 Normative References

The following standards contain provisions that, through reference in this text, constitute provisions of this API standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ASME B16.5[1], *Pipe Flanges and Flanged Fittings*

ASME B16.20, *Metallic Gaskets for Pipe Flanges—Ring Joint, Spiral-wound, and Jacketed*

ASTM D512, *Standard Test Methods for Chloride Ion in Water*

ASTM D1179, *Standard Test Methods for Fluoride Ion in Water*

ASTM D4327, *Standard Test Method for Anions in Water by Suppressed Ion Chromatography*

MSS[2] SP-120, *Flexible Graphite Packing System for Rising Stem Steel Valves*

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[1] ASME International, 2 Park Avenue, New York, New York 10016-5990, www.asme.org.
[2] Manufacturers Standardization Society, 127 Park St. NE, Vienna, VA 22180-4602, www.msshq.org