



Standards & Regulations List

Note: standards and regulations are subject to change at any time. FSA will update this list as needed, but please refer to the appropriate standards group to confirm the most current version of the standard you are interested in.

Standard ID	Revision	Standard Title	Description	Type	Jurisdiction	Applicable Region(s)	Standard Status	Status & Comment
API 622	3rd. Ed. - October, 2018	Type Testing of process Valve Packing for Fugitive Emissions	Packing Type Test, VOC Emissions, High Temperature Block Valves	Industry	World wide	Primarily U.S. and petrochemical industries	Active	Major changes: Fugitive Emission test - Leakage limit 100 PPMv - no adjustment allowed, 1/8" packing test added.
API 624	1st ed. February, 2014	Type Testing of Rising Stem Valves Equipped with Flexible Graphite Packing for Fugitive Emissions	Valve Type Test, VOC Emissions	Industry	World wide	Primarily U.S. and petrochemical industries	2nd, ed. in revision - ballot phase	
API 589	2nd Edition - July 1998 (OBSOLETE)	Fire Test for Evaluation of Valve Stem Packing (for Steel Gate Valves)	Packing fire test qualification. Packing is installed in a gate valve used as the testing jig. (standard has been obsolete)	Industry	World wide	Primarily U.S. and petrochemical industries	Withdrawn	Obsolated after Second Edition - July 1998. Seen as irrelevant as API-607 can be used to evaluate packing fire resistant as well.
API 607	7th ed., June 1, 2016	Fire Test for Soft-Seated Quarter-turn Valves	Valve Type Test, fire resistance,	Industry	World wide	Primarily U.S. and petrochemical industries	Active	formerly harmonized with ISO 10497:2010
API641	1st ed. October, 2016	Quarter Turn Valves Type Testing for Fugitive Emissions	Valve Type Test, VOC Emissions	Industry	World wide	Primarily U.S. and petrochemical industries	Active	
API594	8th ed., July 2017	Check Valves: Flanged, Lug, Wafer and Butt-welding	Covers design, material, face-to-face dimensions, pressure-temperature ratings, and examination, inspection, and test requirements for two types of check valves.	Industry	World wide	Primarily U.S. and petrochemical industries	Active	
API600	13th ed. Jan., 2015	Steel Gate Valves—Flanged and Butt-welding Ends, Bolted Bonnets	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	14th Ed - pre-ballot phase	
API602	10th ed. May 2015	Gate, Globe, and Check Valves for Sizes DN 100 (NPS 4) and Smaller	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	11th Ed - pre-ballot phase	
API603	9th. Ed. October 2018	Corrosion-resistant, Bolted Bonnet Gate Valves	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	Active	
API RP621	4th Ed. October 2018	Reconditioning of Metallic Gate, Globe, and Check Valves	Recommended practice providing guidelines for reconditioning heavy wall carbon steel, ferritic alloy, stainless steel, and nickel alloy gate, globe, and check valves for ASME pressure classes up to 2500. The guidelines apply to flanged and butt weld cast or forged valves.	Industry	World wide	Primarily U.S. and petrochemical industries	Active	Revision covering requirements for Low E performance and integrating a qualification test
API623	1st. Ed. - September 2013	Steel Globe Valves—Flanged and Butt-welding Ends, Bolted Bonnets	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	2nd. Ed. in revision / ballot phase	Requirement of API-624.
API598	10th, ed. Oct. 2016	Valve Inspection And Testing	Valve production test	Industry	World wide	Primarily U.S. and petrochemical industries	Active	
API599	7th, ed. January 2013	Metal Plug Valves—Flanged, Threaded, and Welding Ends	Valve standard covering design, materials, face-to-face dimensions, pressure-temperature ratings, and examination, inspection, and test requirements for metallic plug valves	Industry	World wide	Primarily U.S. and petrochemical industries	8th, ed. - in revision / ballot phase	
API608	5th, ed. November 2012	Metal Ball Valves - Flanged, Threaded and Welding Ends	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	6th, ed. in revision / ballot phase	Set of requirements beyond those mentioned in the ASME B16.34 standard. Requirement of API-641 for Low E service.
API609	8 th, ed. Feb. 2016	Butterfly Valves: Double-flanged, Lug-and Wafer-type	Valve standard Covering design, material, dimensions, ratings, examination and inspection, and test requirements.	Industry	World wide	Primarily U.S. and petrochemical industries	Active	
DIN EN 16752	Nov-15	Specification for a Test Procedure for Packings for Rotary Applications	Test procedure for pump packing	Industry	Europe and North America		Active	FSA/ ESA developed test procedure
ASME B73.1 and ASME B73.2	B73.1 - 2012, B73.2 - 2016	Pump Dimensional Requirements and Design Features	ASME B73.1 for horizontal end suction pumps and ASME B73.2 for vertical in line centrifugal pumps both for chemical process include dimensional interchangeability requirements	Industry	U.S.	U.S and Chemical processing industry		
ASTM F 2087-01(2007)	Superseded with ASTM F2087 - 13	Standard Specification for Packing, Fiberglass, Braided, Rope, and Wick	This specification covers the general requirements and test procedures for braided, rope, and wick fiberglass packing used for boiler, furnace, and other high temperature sealing services up to 538°C (1000°F).	Industry	World wide		Superseded	
ASTM F2087 - 13	2013	Standard Specification for Packing, Fiberglass, Braided, Rope, and Wick	This specification covers the general requirements and tests for braided, rope, and wick fiberglass packing used for boiler, furnace, and other high-temperature equipment seals for service temperatures up to 1000°F (538°C).	Industry	World wide			
ASTM F 2168-02 (2008)	Supeseded with ASTM F2168 - 13	Standard Specification for Packing Material, Graphitic, Corrugated Ribbon or Textured Tape, and Die-Formed Ring	This specification covers various types, classes, and grades of flexible graphite material in which valve media temperatures are limited to a maximum of 1050°F (966°C).	Industry	World wide		Superseded	
ASTM F2168 - 13	2013	Standard Specification for Packing Material, Graphitic, Corrugated Ribbon or Textured Tape, and Die-Formed Ring	This specification covers various types, classes, and grades of flexible graphite material in which valve media temperatures are limited to a maximum of 966°C.	Industry	World wide			

ASTM F2191 / F2191M - 13	2013	Standard Specification for Packing Material, Graphitic or Carbon Braided Yarn	This specification covers staple or continuous filament carbon/graphite yarn valve stem compression packing, suitable for use as end-rings on packing systems for valves. Intended services include steam, hydrocarbons, water and non-oxidizing chemicals.	Industry	World wide		
ASTM F 2191-02	Superseded with ASTM F2191 / F2191M - 13	Standard Specification for Packing Material, Graphitic, or Carbon Braided Yarn	This specification covers staple or continuous filament carbon/graphite yarn valve stem compression packing, suitable for use as end-rings on packing systems for valves. Intended services include steam, hydrocarbons, water, and non-oxidizing chemicals	Industry	World wide	Superseded	
BS 4371	June 1991	Specification for fibrous gland packings	This British Standard details all sorts of gland packings for use in pumps, valves, etc and gives details of yarns and lubricants, dimensions and tolerances, and tests to be applied for lubricant content, impurities etc.	Industry	U.K.		
ISA-SP-93	1993	Standard Method for the Evaluation of External Leakage of Manual and Automated On-Off Valves	The standard specifies a list of requirements for the method of testing fugitive emission from valves and seals.	Industry	U.S.		Unofficially superseded by other standards like API-622 and ISO 15848-1
ANSI/FCI 91-1	2010	Standard for Qualification of Control Valve Stem Seals to Meet EPA Emission Guidelines for Volatile Organic Compounds.	This standard classifies control valve stem seals by their ability to withstand mechanical and thermal cycles at a specified set of temperature and pressure conditions. Bellows, diaphragms, and tubular seals are not covered by this standard.	Industry	U.S.		Similar in scope and extent to ISA-SP-93, but with variations on allowable stem seal adjustments, mechanical and thermal cycles, and allowable leakage rates classes.
ISO 15848-1	June 2015	Classification system and qualification procedures for type testing of valves	This standard gives testing procedures that classify the performance of fully assembled valves as dependent on the varying valve designs in sealing fugitive emissions.	International		Amended 03-2017: ISO 15848-1:2015/Amd 1:2017	
ISO 15848-2	June 2015	Production acceptance test of valves	The aim of this standard is to establish standard practice for the evaluation of production valves whose design has been successfully type-tested according to ISO 15848-1	International			
ISO 3069	November 2000	Dimensions of cavities	ISO 3069 relates to end suction pumps, including those conforming to ISO 2858; it establishes dimensions of cavities for packing.	Industry	Europe		
MSS SP-120	MSS SP-120 June, 2017	Flexible graphite packing system for rising stem steel valves (design requirements)	This Standard provides packing material and dimensional requirements for valve packing, packing chamber, packing gland, packing washer, bonnet, and stem as they relate to the total packing assembly.	Industry	U.S.	Superseds MSS-SP-120-2011	MSS is now an American National Standards Institute (ANSI)-accredited standards developer.
MSS SP-121	MSS SP-121 January, 2006	Qualification testing methods for stem packing for rising stem steel valves	This MSS Standard Practice provides procedures and guidelines for testing and evaluation of valve stem packing materials and material combinations. This testing provides qualification by verifying the adequacy of specific packing material combinations for service within defined limits of size, pressure, temperature, and cyclic duty.	Industry	U.S.	WITHDRAWN from active Standards effective January 1, 2018.	MSS is now an American National Standards Institute (ANSI)-accredited standards developer.
VDI 2440	2000	Emission Control- Mineral Oil Refineries	VDI 2440 is a German guideline created by experts from industry, universities and public bodies for emission control in mineral oil refineries. The sources of gaseous emissions are stated and the relevant best available technologies (BAT) for emission reduction are described. Also specific leakage rates for the emissions from valves and flanges are defined as well as the specific testing methods. These leakage rates have been implemented into the German emission directive "TA-Luft"	National	Germany	Re-affirmed Sept. 2016	
BAM			German approval for articles to be used in oxygen applications	National	Germany		
EC 1935/2004	2004	Food safety — safe packaging	Covers materials and articles intended to come into contact with food		E.U.		
ACS		Attestation de Confirmité Sanitaire	French Drinking Water Approval		France		An E.U. working group is working on alignment of all individual water approvals in the E.U.
WRAS		Water Source Advisory Scheme	U.K. Drinking Water Approval		U.K.		
KTW		Kontakt mit Trinkwasser	German Quality standard for rubber and plastic components in contact with drinking water		Germany		An E.U. working group is working on alignment of all individual water approvals in the E.U.
DVGW		Deutscher Verein des Gas und Wasserfaches/ German Gas and Waterworks Association	German Approval for use of articles in Water and Gas applications		Germany		
KIWA			Netherlands Drinking Water Approval		Netherlands		An E.U. working group is working on alignment of all individual water approvals in the E.U.

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