

Gland Packing Standards & Regulations



Standard I.D.	Revision	Standard Title	Description	Type	Jurisdiction	Applicable Region(s)	Standard Status	Status & Comment
API 622d.	2d ed.	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	Under revision - in balloting	
API 624	1st ed.	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	Approved-Release scheduled Q1 2014	Harmonized with API 622
API 589		Fire Test for Evaluation of Valve Stem Packing (for Steel Gate Valves)		Industry	World wide	Primarily U.S. and petrochemical industries	Withdrawn	No TC activity in over 10 years
API 607	7th ed., June 1,2016	Fire Test for Soft-Seated Quarter-turn Valves		Industry	World wide	Primarily U.S. and petrochemical industries	Active	formerly harmonized with ISO 10497:2010
API 623	1st Edition	Steel Globe Valves-Flanged and Butt-welding Ends, Bolted Bonnets, First Edition		Industry	World wide	Primarily U.S. and petrochemical industries	Under Revision	
API 641	1st Edition	Type Testing of Quarter-turn Valves for Fugitive Emissions, First Edition	Valve Type Test, VOC Emissions	Industry	World wide	Primarily U.S. and petrochemical industries		
API 621	3rd Edition	Reconditioning of Metallic Gate, Globe, and Check Valves	Repair Standard	Industry	World wide	Primarily U.S. and petrochemical industries	Under Revision	
API 608	5th Edition	Metal Ball Valves-Flanged, Threaded and Welding Ends		Industry	World wide	Primarily U.S. and petrochemical industries		

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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		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)		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	U.S.			

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Standard I.D.	Revision	Standard Title	Description	Type	Jurisdiction	Applicable Region(s)	Standard Status	Status & Comment
ASTM F 2168-02		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). This standard has been approved for use by the Department of Defense to replace Standard MIL-P-70343.	Industry	U.S.			
ASTM F 2087-01(2007)		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(1050°F).	Industry	U.S.			

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Standard I.D.	Revision	Standard Title	Description	Type	Jurisdiction	Applicable Region(s)	Standard Status	Status & Comment
ASTM F 2191-02		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	U.S.			
BS 4371	jun.91	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.		Obsolete - Under revision with ESA PD 002	

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Standard I.D.	Revision	Standard Title	Description	Type	Jurisdiction	Applicable Region(s)	Standard Status	Status & Comment
ISA-SP-93		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.			
ANSI/FCI 91-1		Standard for Qualification of Control Valve Stem Seals to Meet EPA Emission Guidelines for Volatile Organic Compounds.	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.	Industry	U.S.			
ISO 15848-1		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				

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ISO 15848-2		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		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		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.			

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MSS SP-121		Qualification testing methods for stem packing for rising stem steel valves	This MSS Standard Practice provides nprocedures and guidelines for testing and evaluation of valve stem packing materials and material combinations.	Industry	U.S.			
VDI 2440		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		Currently being reviewed; new version before Oct 2017	

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BAM			German approval for articles to be used in oxygen applications					
EC 1935/2004	2004	Food safety — safe packaging	Covers materials and articles intended to come into contact with food		E.U.			
ACS			French Drinking Water Approval		France			A E.U. working group is working on alignment of all individual water approvals in the E.U.
WRAS			U.K. Drinking Water Approval		U.K.			
KTW			German Drinking Water Approval		Germany			A E.U. working group is working on alignment of all individual water approvals in the E.U.

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DVGW			German Approval for use of articles in Water and Gas applications		Germany			
KIWA			Netherlands Drinking Water Approval		Netherlands			A E.U. working group is working on alignment of all individual water approvals in the E.U.
FDA								