Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components

Liquid Penetrant Examination Method
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This MSS Standard Practice, SP-93, *Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components – Liquid Penetrant Examination Method*, was originally adopted in 1982 for the purpose of providing a uniform method of Liquid Penetrant Examination. It was specifically developed for the valve/piping industry but may be used in any application where this type of examination is suitable.

This Standard Practice was reaffirmed in 1987 with essentially no changes.

The Third edition was reaffirmed in 1992 with essentially no changes.

The 1999 edition included minor revisions and was re-formatted to conform to MSS publication practices.

The 2008 edition included minor revisions and was re-formatted to conform to MSS publication practices.

This 2014 edition includes editorial corrections, a clarification to Scope in Section 1, update of Section 7 and Table 1, and an update of Annex A references. It was also re-formatted to conform to current MSS publication practices.
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SP-6-2012 Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings
SP-9-2013 Spot Facing for Bronze, Iron, and Steel Flanges
SP-25-2013 Standard Marking System for Valves, Fittings, Flanges, and Unions
SP-42-2013 Corrosion-Resistant Gate, Globe, Angle, and Check Valves with Flanged and Butt Weld Ends (Classes 150, 300 & 600)
SP-43-2013 Wrought and Fabricated Butt-Welding Fittings for Low Pressure, Corrosion Resistant Applications
SP-44-2010 Steel Pipeline Flanges (incl. 2011 Errata Sheet)
SP-45-2003 (R 2008) Bypass and Drain Connections
SP-51-2012 Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings
SP-53-2012 Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components – Magnetic Particle Examination Method
SP-54-2013 Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components – Radiographic Examination Method
SP-60-2012 Connecting Flange Joints between Tapping Sleeves and Tapping Valves
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SP-68-2011 High Pressure Butterfly Valves with Offset Design
SP-70-2011 Gray Iron Gate Valves, Flanged and Threaded Ends
SP-71-2011 Gray Iron Swing Check Valves, Flanged and Threaded Ends (incl. 2013 Errata Sheet)
SP-72-2010a Ball Valves with Flanged or Butt-Welding Ends for General Service
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SP-78-2011 Gray Iron Plug Valves, Flanged and Threaded Ends
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SP-81-2013 Stainless-Steel or Stainless-Steel-Lined, Bonnetless, Knife Gate Valves with Flanged Ends
SP-83-2006 Class 3000 Steel Pipe Unions Socket Welding and Threaded
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SP-88-2010 Diaphragm Valves
SP-91-2009 Guidelines for Manual Operation of Valves
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SP-95-2014 Swage(d) Nipples and Bull Plugs
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SP-97-2012 Integrally Reinforced Forged Branch Outlet Fittings – Socket Welding, Threaded, and Buttwelding Ends
SP-98-2012 Protective Coatings for the Interior of Valves, Hydrants, and Fittings
SP-99-2010 Instrument Valves
SP-100-2009 Qualification Requirements for Elastomer Diaphragms for Nuclear Service Diaphragm Valves
SP-101-2014 Part-Turn Valve Actuator Attachment – FA Flange and Driving Component Dimensions and Performance Characteristics
SP-102-1989 (R 2001) Multi-Turn Valve Actuator Attachment – Flange and Driving Component Dimensions and Performance Characteristics
SP-104-2012 Wrought Copper Solder-Joint Pressure Fittings
SP-105-2010 Instrument Valves for Code Applications
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SP-111-2012 Gray-Iron and Ductile-Iron Tapping Sleeves
SP-112-2010 Quality Standard for Evaluation of Cast Surface Finishes – Visual and Tactile Method. This SP must be used with a 10-surface, three dimensional Cast Surface Comparator, which is a necessary part of the standard. Additional Comparators available separately.
SP-113-2012 Connecting Joints between Tapping and Tapping Valves
SP-114-2007 Corrosion Resistant Pipe Fittings Threaded and Socket Welding Class 150 and 1000 (ANSI-approved American National Standard)
SP-115-2010 Excess Flow Valves, ½ NPS and Smaller, for Fuel Gas Service
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SP-134-2012 Valves for Cryogenic service, including Requirements for Body/Bonnet Extensions
SP-135-2010 High Pressure Knife Gate Valves
SP-136-2014 Ductile Iron Swing Check Valves
SP-137-2013 Quality Standard for Positive Material Identification of Metal Valves, Flanges, Fittings, and Other Piping Components
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