

SAMSON PRODUCT SPECIFICATION LEVELS FOR ANSI STANDARDS



Solutions for your industry

SMART IN FLOW CONTROL

ANSI SPSLS



Material specification and testing play an essential role in ensuring the final quality of any physical product. This is especially true for valves, where the final product can be used to contain high pressures, toxic or hazardous media, and where the overall quality of the product is vital to the safety of the personnel and environment in the vicinity in which it is operated. Therefore, numerous international standards for material manufacturing and testing have been established to ensure the quality of the material being used in such applications.

Material specification starts by defining the allowable chemical composition and necessary steps during manufacturing, such as heat treatment. Once the material is made, a host of different tests may be performed to ensure the quality of that material. Destructive tests, such as impact testing to verify material strength, are typically performed on sample coupons from a given material lot. Further non-destructive tests, such as dye penetrant, magnetic particle and radiographic inspections,

are performed on the final component (before or after final machining) to ensure that the material meets the necessary quality standards for the given application.

There are several organizations that have published ANSI recognized standards, most importantly ASTM, ASME and MSS. The standards published by these organizations dictate the methods and requirements for manufacturing and testing materials utilized in ANSI-based installations. In response, SAMSON has developed several SPSLs (SAMSON Product Specification Levels) to fulfill the requirements.

Material manufacturing and testing specifications vary not only by region, but also by industry. Due to differing customer preferences within these different industries, various different standards for testing and acceptance criteria may be required. Therefore, SAMSON has developed two fundamental SPSLs based on the two most commonly specified standards.



SPSL A is based on ASME B16.34. This is the leading standard for valve design in most process industries, including chemicals, petrochemicals and refining. Non-destructive testing is typically carried out according to ASTM standards and the applicable acceptance criteria are specified in the associated appendices to B16.34.

SPSL B is based on the ASME Boiler and Pressure Vessel Code (BPVC) as the leading standard. These requirements are more commonly seen in the various branches of the oil and gas industry. In this track of SPSLs, most non-destructive examination is carried out according to ASME BPVC Section V, with acceptance according to ASME BPVC Section VIII, Division 1. Some tests are still carried out according to ASTM and ASME B16.34 as well.

Within each track of SPSLs, there are three levels that specify the size of the material lot to be subjected to each test. The tables below show the different non-destructive testing methods, on which materials they are performed, the procedure and acceptance criteria standards as well as the lot size for each test.

SPSL A Based on ASME B16.34						
Test	Material	Procedure	Acceptance	SPSL A1	SPSL A2	SPSL A3
VT (Visual Examination)	All Materials	MSS SP-55	MSS SP-55	100%	100%	100%
MT (Magnetic Particle Test)	WCC (Casting)	ASTM E709	ASME B16.34, App. II	10%	100%	100%
	A105 (Forging/Bar)	ASTM A275	ASME B16.34, App. II	-	100%	100%
PT (Dye Penetrant Test)	CF8M (Casting)	ASTM E165	ASME B16.34, App. III	10%	100%	100%
	316(L) (Forging/Bar)	ASTM E165	ASME B16.34, App. III	-	100%	100%
RT (Radiographic Test)	All Cast Materials, All Critical Areas	ASTM E94	ASME B16.34, App. I	-	10%	100%
	All Cast Materials, Welding Areas	ASTM E94	ASME B16.34, App. I	100%	100%	100%
UT (Ultrasonic Test)	Forged/Bar Materials	ASTM A388	ASME B16.34, App. IV	-	-	100%

SPSL B Based on ASME BPVC						
Test	Material	Procedure	Acceptance	SPSL B1	SPSL B2	SPSL B3
VT (Visual Examination)	All Materials	ASME BPVC V, Art. 9	MSS SP-55	100%	100%	100%
MT (Magnetic Particle Test)	WCC (Casting)	ASME BPVC V, Art. 7	ASME BPVC VIII, Div. 1, App. 7	100%	100%	100%
	A105 (Forging/Bar)	ASME BPVC V, Art. 7	ASME BPVC VIII, Div. 1, App. 7	-	100%	100%
PT (Dye Penetrant Test)	CF8M (Casting)	ASME BPVC V, Art. 6	ASME BPVC VIII, Div. 1, App. 6	100%	100%	100%
	316(L) (Forging/Bar)	ASME BPVC V, Art. 6	ASME BPVC VIII, Div. 1, App. 6	-	100%	100%
RT (Radiographic Test)	All Cast Materials, All Critical Areas	ASTM E94	ASME B16.34, App. I	-	10%	100%
	All Cast Materials, Welding Areas	ASTM E94	ASME B16.34, App. I	100%	100%	100%
UT (Ultrasonic Test)	Forged/Bar Materials	ASTM A388	ASME B16.34, App. IV	-	-	100%

SAMSON AT A GLANCE



STAFF

- Worldwide 4,500
- Europe 3,600
- Asia 600
- Americas 200
- Frankfurt am Main, Germany 1,900

INDUSTRIES AND APPLICATIONS

- Chemicals and petrochemicals
- Food and beverages
- Pharmaceuticals and biotechnology
- Oil and gas
- Liquefied Natural Gas (LNG)
- Marine equipment
- Power and energy
- Industrial gases
- Cryogenic applications
- District energy and building automation
- Metallurgy and mining
- Pulp and paper
- Water technology
- Other industries

PRODUCTS

- Valves
- Self-operated regulators
- Actuators
- Positioners and valve accessories
- Signal converters
- Controllers and automation systems
- Sensors and thermostats
- Digital solutions

SALES SITES

- More than 60 subsidiaries
in over 40 countries
- More than 200 representatives

PRODUCTION SITES

- SAMSON Germany, Frankfurt, established in 1916
Total plot and production area: 150,000 m²
- SAMSON France, Lyon, established in 1962
Total plot and production area: 23,400 m²
- SAMSON Turkey, Istanbul established in 1984
Total plot and production area: 11,100 m²
- SAMSON USA, Baytown, TX, established in 1992
Total plot and production area: 20,000 m²
- SAMSON China, Beijing, established in 1998
Total plot and production area: 47,000 m²
- SAMSON India, Pune district, established in 1999
Total plot and production area: 28,000 m²
- SAMSON AIR TORQUE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON CERA SYSTEM, Hermsdorf, Germany
Total plot and production area: 14,700 m²
- SAMSON KT-ELEKTRONIK, Berlin, Germany
Total plot and production area: 1,100 m²
- SAMSON LEUSCH, Neuss, Germany
Total plot and production area: 18,400 m²
- SAMSON PFEIFFER, Kempen, Germany
Total plot and production area: 20,300 m²
- SAMSON RINGO, Zaragoza, Spain
Total plot and production area: 19,000 m²
- SAMSON SED, Bad Rappenau, Germany
Total plot and production area: 10,400 m²
- SAMSON STARLINE, Bergamo, Italy
Total plot and production area: 27,000 m²
- SAMSON VDH PRODUCTS, the Netherlands
Total plot and production area: 12,000 m²
- SAMSON VETEC, Speyer, Germany
Total plot and production area: 27,100 m²

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