SURFACE VEHICLE STANDARD	J3127™	OCT2019
	Issued 2019-10	

Welded, 304/304L Stainless Steel Tubing

RATIONALE

Users and manufacturing committees have requested an SAE document to standardize stainless steel bulk tubing. This document is created to support the SAE need for a stainless steel, bulk tubing standard, which provides users with information and requirements regarding tubing material, dimensions, performance, and recommended attachment methods.

1. SCOPE

This SAE Standard covers welded stainless steel pressure tubing intended for use as hydraulic lines and in other applications requiring corrosion resistance.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J533 Flares for Tubing

SAE J1453-1 Specification for O-Ring Face Seal Connectors: Part 1 - Tube Connection Details and Common Requirements for Performance and Tests

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A249/A249M Standard Specification for Welded Austenitic Boiler, Superheater, Heat-Exchanger, and Condenser Tubes

ASTM A1016/A1016M Standard Specification for General Requirements for Ferritic Alloy Steel, Ausrentic Alloy Steel, and Stainless Steel Tubes

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Full document details: SAE J3127_201910

2.2 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS5565 Steel, Corrosion Resistant, Welded Tubing, 19Cr - 9.5Ni (304), Solution Heat Treated

AMS5567 Steel, Corrosion Resistant, Seamless or Welded Hydraulic Tubing, 19Cr - 10Ni (304), Solution Heat Treated

3. MANUFACTURE

Tubing shall be annealed to produce a finished product and shall meet all requirements of ASTM A249M and this document.

Tubes shall be bright annealed and passivated. Oxide annealed, pickled, and passivated can be supplied by agreement between producer and purchaser.

Centerless grinding is not permitted; however, a light polish to improve surface appearance is permitted. Polished tubing shall be subsequently passivated.

Subsequent to welding and prior to final heat treatment the tubes shall be cold worked either in both weld and base metal or in weld metal only.

4. DIMENSIONS AND TOLERANCES

4.1 Outside Diameter Tolerance

The tolerances applicable to the tubing outside diameter are shown in Table 1.

Table 1 - Tubing outside diameter tolerance

Nominal Tubing OD [(1)(2)] mm	Tube OD Tolerance ±mm
Under 25	0.10
25 to 40, incl	0.15
Over 40 to 50, excl	0.20
50 to 65, excl	0.25
65 to 75, excl	0.30
75 to 100, incl	0.38
Over 100 to 200, incl	0.38

(1) OD measurements shall be taken at least 1.5 x outside diameter from the end of the tubing.

(2) Refer to SAE J1453 for nominal tubing OD to be used in conjunction with standard hydraulic tube fittings and SAE J533 for recommended maximum nominal wall thickness for double flaring.

Documents
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