



SURFACE VEHICLE STANDARD

J1527™

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Marine Fuel Hoses

RATIONALE

Document open for periodic review including added notes of clarity to scope and tolerances and units.

1. SCOPE

This SAE Standard specifies requirements for two types, three classes, and four styles of reinforced hose and non-reinforced tubing for conveying gasoline or diesel fuel aboard small craft including pleasure craft whose fuel systems are regulated under 33 CFR 183 Subpart J. SAE J1527 contains requirements for a Type A fire test of 2.5 minutes and defines a type B hose that is not fire resistant.

Refer to SAE J1942 for commercial marine non-metallic flexible hose or hose assemblies used in systems on board commercial vessels inspected and certified by the U.S. Coast Guard. SAE J1942 defines a type A fire resistance test of 2.5 minutes and a type B test of 30 minutes.

Refer to SAE J2046 for fuel hose used on personal watercraft.

1.1 Hose Types

Two types of hose meeting 33 CFR 183 Subpart J requirements with respect to fire resistance are covered by this document.

1.1.1 USCG Type A

This hose must provide a minimum 2-1/2 minutes of fire resistivity with no evidence of leakage when subjected to the fire test in Section 5.

1.1.2 USCG Type B

This hose need not be subjected to the 2-1/2 minute fire test.

1.2 Hose Classifications

Fuel resistance and rate of permeation.

1.2.1 Hose intended for applications such as fuel feed lines where liquid fuel is normally continuously in the hose.

1.2.1.1 Class 1

1.2.1.2 Class 1-15

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Documents

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1.2.2 Hose intended for applications such as fuel tank vent and fill hoses, where liquid fuel is not normally continuously in contact with the hose.

1.2.2.1 Class 2

1.3 Hose or Tubing Construction Styles

1.3.1 Style R1

The construction of this hose embodies a smooth bore fuel and oil-resistant tube, reinforced with one or more plies of textile fiber yarn, cord, or fabric, and finished with a suitable oil, ozone, and heat-resistant cover. For Class 1 and Class 1-15 service, covers or sleeves having a lower permeation rate than the tube shall be pinpricked.

1.3.2 Style R2

The construction of this hose embodies a smooth bore fuel and oil-resistant tube, a helical wire imbedded in the hose, and finished with a suitable oil, ozone, and heat-resistant cover. Plies of fabric or cord may be applied between the tube or cover and the helical wire. The helical wire must not be exposed after the cover is subjected to the abrasion test in Section 6.

1.3.3 Style R3

The construction of this hose embodies a smooth bore fuel and oil-resistant tube, reinforced with one or more braids of wire, and finished with a suitable oil, ozone, and heat-resistant cover. These hoses shall be used with end fittings complying with SAE specification SAE J516-100R5.

1.3.4 Style R4

The construction of this non-reinforced multi-laminate hose/tubing embodies a smooth bore fuel and oil-resistant tube and finished with a suitable oil, ozone, and heat-resistant cover.

1.4 For identification and ordering purposes, the following should be listed in order:

USCG Type, Fuel Resistance/Permeation, Construction Style.

Example of Hose Identification: USCG Type A1-15 Style R2 means the hose meets USCG Type A requirements for fire resistance, Class 1-15 requirements for fuel resistance/permeation, and Style R2 for a helical wire embedded hose.

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 J516	Hydraulic Hose Fittings
SAE J517	Hydraulic Hose
SAE J1942	Hose and Hose Assemblies for Marine Applications
SAE J2046	Personal Watercraft Fuel Systems

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 D380	Test Methods for Rubber Hose
ASTM D413	Test Methods for Rubber Property - Adhesion to Flexible Substrate
ASTM D471	Test Method for Rubber Property - Effect of Liquids
ASTM D573	Test Method for Rubber - Deterioration in an Air Oven
ASTM D1149	Test Method for Rubber Deterioration - Cracking in an Ozone Controlled Environment
ASTM D4806-06a	Standard Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel

2.1.3 Code of Federal Regulations (CFR) Publications

Available from the United States Government Printing Office, 732 North Capitol Street, NW, Washington, DC 20401, Tel: 202-512-1800, www.gpo.gov.

33 CFR 183	Code of Federal Regulations: Navigation and Navigable Waters
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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.

SAE J2006	Marine Exhaust Hose
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2.2.2 ISO Publications

Available from International Organization for Standardization, ISO Central Secretariat, 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland, Tel: +41 22 749 01 11, www.iso.org.

ISO 7840	Fire Resistant Fuel Hoses
ISO 8469	Non-Fire Resistant Fuel Hoses

3. DIMENSIONS AND TOLERANCES

The applicable dimensions and tolerances for style R1, R2, and R4 are shown in Table 1. The dimensions and tolerances for style R3 shall comply with the SAE J517-100R5 specification.