



Fuel Filler Hose

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Scope. This specification covers three (3) types of hose, and two (2) constructions of hose, 12.7 mm diameter, and larger, coupled and uncoupled, for use with gasoline, oil, or diesel fuel in automotive fuel systems. Drawing callouts not referencing a hose construction are assumed to be referencing Construction 1. This hose is not compatible with biodiesel fuel. Type A hose is intended for higher stress applications.

1.1.1 Classification/Material Description. The hoses described in this specification are differentiated based on the reinforcement and the composition of the different layers into the following types and construction numbers.

1.1.2 Reinforcement to the tube may be applied by braiding, knitting or circular weaving.

- **Type A:** Reinforced with aramid fiber.
- **Type B:** Reinforced with rayon fiber.
- **Type C:** Reinforced with polyester and nylon in a knit wrap construction with alternating loops of polyester and nylon. Nylon must be looped through polyester.

1.1.3 Constructions 1: This hose shall consist of a smoothbore tube of butadiene/acrylonitrile (NBR) copolymer compound. The cover shall consist of chlorosulfonated polyethylene (CSM) or chlorinated polyethylene (CPE) compound. The cover may be perforated to facilitate degassing during manufacturing operations. Hose shall be black. The tube shall be reinforced with a yarn or cord applied by braiding, knitting, or circular weaving or of 2 ply counter directional helical winding.

1.1.4 Construction 2: This hose shall consist of an inner smoothbore tube of butadiene/acrylonitrile (NBR) copolymer compound. The reinforcement shall be an aramid fiber yarn or cord applied by braiding, knitting, or circular weaving or of 2 ply counter directional helical winding, centered between two (2) layers of NBR. The cover shall consist of butadiene/acrylonitrile (NBR) copolymer compound, the exact material as the inner tube. Construction 2 hose may only be used within an enclosed tank system.

1.1.5 Hose Marking. The hose shall be legibly marked with the following information in the sequence stated:

- Nominal inside diameter expressed as fraction of an inch (e.g., 1 in to $\frac{1}{4}$ in).
- GM specification number GMW16833 followed by type and construction (e.g., GMW16833 A1).
- Date code, hose manufacturer's code identification as designated by Rubber Manufacturers Association, and the manufacturing plant location code.

Such marking shall be printed parallel to the axis in vivid white or light blue block letters not less than 3 mm high and the open space between the specified markings shall not exceed 25 mm.

1.1.6 The date code shall consist of six (6) digits: The first two (2) digits shall represent the month (01 thru 12) of the year, the next two (2) shall represent the day of the month (01 thru 31), and the last two (2) shall be the last two (2) digits of the year.

1.1.7 Additionally, one or more colored tracers shall be incorporated into the wall of the hose identifying the hose manufacturer. The color(s) shall be as designated by the Rubber Manufacturers Association.

1.1.8 Parts conforming to this specification that are too short for the marking required in 1.1.5 shall be marked as specified by the purchaser's engineering department.

1.1.9 Dimensions and Tolerances. Hose furnished to this specification shall conform to the dimensions and tolerances shown in Table 1 for the size (nominal inside diameter) specified by the purchaser conforms to SAE J30 (SAE 30R7). Hose cover wall thickness shall be between 25% and 40% of total wall thickness.

Concentricity based on total indicator reading between inside bore of hose and outer surface of hose shall not exceed 1.3 mm.

Wall gage for sizes 31.75 thru 44.45 mm shall be between 4.3 mm and 5.6 mm and for sizes 50.80 thru 63.5 mm between 4.3 mm and 6.4 mm. Construction 2 hose shall have a hose wall tolerance of ± 1.2 mm.

Table 1: Dimensions and Tolerances

Table 1A – Metric (SI) Units					Table 1B – Customary Units				
Size (mm)	Inside Diameter (mm)		Outside Diameter (mm)		Size (in)	Inside Diameter (in)		Outside Diameter (in)	
	Maximum	Minimum	Maximum	Minimum		Maximum	Minimum	Maximum	Minimum
12.70	13.28	12.12	20.63	19.05	1/2	523	477	812	750
15.88	16.67	15.09	24.6	23.02	5/8	656	594	969	907
19.05	19.84	18.26	29.37	27.79	3/4	781	719	1.156	1.094
25.4	26.99	23.81	36.52	33.34	1	1.062	930	1.437	1.310
28.6	29.4	27.8	Not Specified		1-1/8	1.18	1.07	Not Specified	
31.75	32.51	30.99	Not Specified		1-1/4	1.28	1.22	Not Specified	
34.93	34.29	35.81	Not Specified		1-3/8	1.35	1.41	Not Specified	
38.10	38.86	37.34	Not Specified		1-1/2	1.53	1.47	Not Specified	
44.45	45.21	43.69	Not Specified		1-3/4	1.78	1.72	Not Specified	
50.80	51.56	50.04	Not Specified		2	2.03	1.97	Not Specified	
57.15	58.11	56.59	Not Specified		2-1/4	2.28	2.22	Not Specified	
63.5	64.26	62.74	Not Specified		2-1/2	2.53	2.47	Not Specified	

1.2 Mission/Theme. Not applicable.

1.3 Classification. See 1.1.1.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D380	ASTM D4678	ISO 1431-1
ASTM D413	IRM 903	SAE J30

2.2 GM Standards/Specifications.

GME L0004	GMW14680	GMW15423
GMW3059	GMW14914	

2.3 Additional References.

Rubber Manufacturers Association

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