GM WORLDWIDE ENGINEERING STANDARDS	General Specification	GMW16997

Unreinforced, Non-Conductive 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 Purpose. This specification covers one (1) construction of hose, 12.7 mm diameter and larger, coupled and uncoupled, for use with gasoline, oil or diesel fuel in automotive fuel systems. This hose is not compatible with biodiesel fuel. The hose is not reinforced, non-conductive, and is intended for use at 100 °C or lower.

1.2 Applicability. This specification describes one construction of fuel filler hose, as detailed in 1.3.1.

1.2.1 This hose has no reinforcement.

1.3 Remarks.

1.3.1 Construction. This hose shall consist of a smoothbore tube of butadiene/acrylonitrile (i.e., Nitrile Butadiene Rubber (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 hose has no reinforcement layer.

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

- Nominal inside diameter expressed as fraction of an inch (e.g., 1 ¼)
- GM Worldwide Engineering Standard GMW16997
- Date code, hose manufacturer's code identification as designated by Rubber Manufacturers Association
- 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

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

1.3.2.2 Parts conforming to this specification that are too short for the marking required in 1.3.2 shall be marked as specified by the purchaser's engineering department.

1.3.3 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.

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

1.3.3.2 Wall gage for sizes 31.75 mm through 44.45 mm shall be between 4.3 mm and 5.6 mm and for sizes 50.80 mm through 63.5 mm between 4.3 mm and 6.4 mm.

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Table 1: Dimensions and Tolerances

Metric (SI) Units					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	½	.523	.477	.812	.750
15.88	16.67	15.09	24.6	23.02	⅝	.656	.594	.969	.907
19.05	19.84	18.26	29.37	27.79	¾	.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 ⅛	1.18	1.07	Not Specified	
31.75	32.51	30.99	Not Specified		1 ¼	1.28	1.22	Not Specified	
34.93	34.29	35.81	Not Specified		1 ⅜	1.35	1.41	Not Specified	
38.10	38.86	37.34	Not Specified		1 ½	1.53	1.47	Not Specified	
44.45	45.21	43.69	Not Specified		1 ¾	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 ¼	2.28	2.22	Not Specified	
63.5	64.26	62.74	Not Specified		2 ½	2.53	2.47	Not Specified	

Note: SI = International System of Units

2 References

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

2.1 External Standards/Specifications.

ASTM D380 ASTM D4678 SAE 30R7 SAE J30
ASTM D413 ISO 1431-1

2.2 GM Standards/Specifications.

GMW3059 GMW14914 GMW15423 GMW16955
GMW14680

2.3 Additional References.

- ASTM Reference Fuel C

3 Test Preparation and Evaluation

3.1 Resources.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.1.3 Facilities. Conforming to the relevant test procedures.

3.1.4 Equipment. Conforming to the relevant test procedures.

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