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Rubber and plastics hoses and hose assemblies for automotive air conditioning — Specification —

Part 1: Refrigerant 12

*Tuyaux et flexibles en caoutchouc et en plastique pour climatisation des
automobiles — Spécifications —*

Partie 1: Frigorigène 12

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8066-1 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products*, Subcommittee SC 1, *Hoses (rubber and plastics)*.

ISO 8066 consists of the following parts, under the general title *Rubber and plastics hoses and hose assemblies for automotive air conditioning — Specification*:

- *Part 1: Refrigerant 12*
- *Part 2: Refrigerant 134a*

Annexes A to C form an integral part of this part of ISO 8066.

Rubber and plastics hoses and hose assemblies for automotive air conditioning — Specification —

Part 1: Refrigerant 12

1 Scope

This International Standard provides a specification for reinforced rubber or thermoplastic hoses and hose assemblies used for circulating liquid and gaseous refrigerant 12 (dichlorodifluoromethane) in the air-conditioning systems of automobiles, designed in such a way as to restrict losses of refrigerant and contamination of the system, in the operational temperature range -30 °C to +125 °C.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8066. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8066 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 471:1995, *Rubber — Temperatures, humidities and times for conditioning and testing.*

ISO 1402:1994, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing.*

ISO 1817:—¹⁾, *Rubber, vulcanized — Determination of the effect of liquids.*

ISO 6803:1994, *Rubber or plastics hoses and hose assemblies — Hydraulic-pressure impulse test without flexing.*

ISO 7326:1991, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions.*

3 Constructional requirements

Six types of hose are specified.

3.1 Types A1 and A2 — Rubber, textile-reinforced

The hose shall be built having a seamless oil-resistant synthetic-rubber tube. The reinforcement shall consist of textile yarn, cord or fabric adhered to the tube and cover. The outer cover shall be heat- and ozone-resistant synthetic rubber.

NOTE — Commercial products normally offered for type A1 hoses are a one-braid reinforcement of rayon textile yarn with a smaller outside diameter than type A2 hoses. Type A2 hose is a two-braid hose. Hose fittings for type A1 and A2 hoses are not normally interchangeable.

¹⁾ To be published. (Revision of ISO 1817:1985)

3.2 Types B1 and B2 — Rubber, wire-reinforced

The hose shall be built having a seamless oil-resistant synthetic-rubber tube. The reinforcement shall consist of steel wire adhered to the rubber tube. The cover shall consist of a heat-resistant textile yarn impregnated with a synthetic-rubber cement.

3.3 Type C — Thermoplastic, textile-reinforced

The hose shall have a thermoplastic tube. The reinforcement shall consist of suitable textile yarn. The outer cover shall be a heat- and ozone-resistant thermoplastic material. The cover may be pin-pricked.

3.4 Type D — Thermoplastic, textile-reinforced, rubber-covered

The hose shall be a thermoplastic tube. The reinforcement shall consist of textile yarn, cord or fabric adhered to the tube and cover. The cover shall be a heat- and ozone-resistant synthetic rubber. It may be pin-pricked.

4 Dimensions

4.1 Hose diameters shall conform with the requirements given in table 1.

4.2 The variation in wall thickness shall not exceed the values given in table 2.

NOTE — Fittings for thermoplastic hoses may not be interchangeable. It is recommended that such fittings be properly matched.

Table 1 — Hose diameters

Dimensions in millimetres

Nominal bore	Internal diameter						Outside diameter								
	Types A1, A2 and B1		Type C		Types B2 and D		Type A1		Type A2		Type B1		Type C	Types B2 and D	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	Min.
4,8	-	-	5,1	4,6	5,4 ¹⁾	4,8 ¹⁾	-	-	-	-	-	-	8,3	13,7 ¹⁾	12,7 ¹⁾
6,4	7,0	6,2	6,7	6,1	-	-	15,1	13,5	-	-	16,5	15,3	11,4	-	-
8	8,6	7,8	8,3	7,6	8,7	8,0	19,1	17,5	19,8	18,3	18,8	17,7	13,5	17,6	16,7
9,5	-	-	9,9	9,1	-	-	-	-	-	-	-	-	15,2	-	-
10	11,1	10,2	10,7	9,9	11,1	10,3	23,0	21,4	23,8	22,2	21,2	20,0	16,1	20,0	18,9
13	13,6	12,4	13,2	12,2	13,7	12,7	25,4	23,8	26,2	24,6	23,8	22,2	18,8	24,0	22,8
16	16,8	15,6	16,5	15,2	16,9	15,9	28,5	27,0	29,4	27,8	27,0	25,4	23,4	28,0	26,8
22	23,1	22,0	-	-	-	-	-	34,1	32,5	-	-	-	-	-	-
29	29,8	28,2	-	-	-	-	-	40,9	38,5	-	-	-	-	-	-

1) These values apply only to type B2.