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JIS

JAPANESE INDUSTRIAL STANDARD

Wire Reinforced Rubber Hoses for Gaseous Fuels

JIS K 6351 – 1982

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Wire Reinforced Rubber Hoses for Gaseous Fuels

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1. Scope

This Japanese Industrial Standard specifies the reinforced rubber hoses, hereinafter referred to as the "hoses", connecting the gas cocks and gas combustion appliances for town gas (1) and liquefied petroleum gas (2) of 330 mmH_2O {3.24 kPa} or under in pressure.

Notes (1) The town gas is defined as that of gas group mentioned in the Ministerial Ordinance relevant to Approval of Gas Appliances (Ordinance No. 27 of Ministry of International Trade and Industry, 1971) laid down by Gas Enterprises Law (Law No. 51, 1954).

(2) The liquefied petroleum gas is defined as that mentioned in the standard of the liquefied petroleum gas set in Enforcement Regulation (Ordinance No. 14 of Ministry of International Trade and Industry, 1968) laid down by Law concerning Security of Safety for Liquefied Petroleum Gas (Law No. 149, 1967).

Remark: The units and numerical values given in { } in this standard are in accordance with the International System of Units (SI), and are appended for reference.

Applicable Standards and Reference Standard: See page 17.

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2. Quality

2.1 Appearance The appearance of the hose shall meet the following requirements:

(1) The inside diameter, outside diameter and wall thickness shall be uniform. The inside surface shall be smooth, and shall be rich in flexibility.

(2) The hoses shall be free from flaws, bubbles and deformations, and they shall not contain foreign substances, without other any defects harmful to use.

2.2 Minimum Bending Radius The hoses shall be capable of being bent to the minimum bending radius given in Table 1.

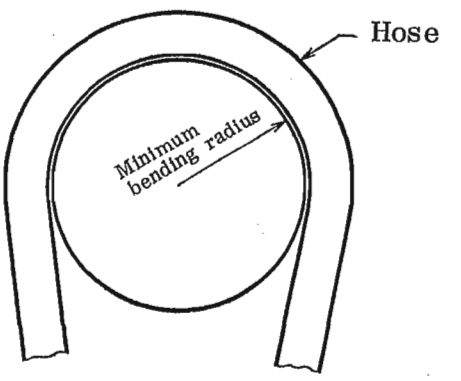
In this case, the minimum bending radius means the radius of hose inside, as shown in Fig. 1.

Table 1. Minimum Bending Radius

Designation (3)	Minimum bending radius mm
9.5	70
13	90

Note (3) The designation mentioned here is that defined in 4.

Fig. 1. Minimum Bending Radius



2.3 Performance The hoses shall be tested by the test methods specified in 5.2 to 5.16, and the results shall meet the requirements specified in Table 2.

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Table 2. Performance

Test item			Performance	Principal test conditions	Clause to be applied
Hose	Air tightness test	—	Such abnormalities as leakage and others shall not be found	1 kgf/cm^2 {98 kPa}, 1 min	5.2
	Peeling test	Peeling load kgf/25 mm {kN/m}	3 {1.18} min.	Peeling speed, 25 ± 1.5 mm/min	5.3
	Ozone deterioration test	—	Such abnormalities as cracks, fissures and others shall not be found	50 ± 5 pphm, 40 ± 2 °C Wind around a cylinder having diameter of 4 times the outside diameter. For outer face layer, 120 h Insert to a gas cock, For outer face layer, 120 h For inner face rubber, 96 h	5.4
	Heat resistance test	—	Such abnormalities as cracks, fissures and others shall not be found	120 ± 2 °C, 48 h Minimum bending radius	5.5
	Combustion test	Flame sustaining time s	5 max.	5 sec. in a flame of about 800 °C	5.6
	Flow rate test	Decrease of flow rate %	10 max.	Specified bending width, air pressure 100 mmH_2O {0.98 kPa}, flow rate is 1 m^3/h for designation 9.5, and 2 m^3/h for designation 13	5.7

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Table 2 (Continued)

Test item				Performance	Principal test conditions	Clause to be applied
Hose	Withstand load test	Decrease of flow rate %		50 max.	Air pressure 100 mmH_2O {0.98 kPa}, flow rate 1 m^3/h for designation 9.5 and 2 m^3/h for designation 13, longitudinal direction 100 mm, static load of 60 kgf {0.589 kN} for 1 min	5.8
	Tension test	Breaking strength kgf {kN}		160 {1.570} min.	Tension speed 500 ± 25 mm/min	5.9
	Cutting endurance test	—		Such abnormalities as leakage and others shall not be found	Static load 6 kgf {59 N}, air tightness test after 5 min	5.10
	Gas permeation test	Quantity of gas permeation ml/h	9.5 in designation	5 max.	Propane gas 35.0 ± 0.2 °C, 450 ± 5 mmHg {59.99 ± 0.66 kPa}, for 6 h after a lapse of 24 h	5.11
			13 in designation	7 max.		

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