

الهيئة السعودية للمواصفات والمقاييس والجودة
Saudi Standards, Metrology and Quality Org. (SASO)



SASO 166 :2023

**RUBBER HOSES FOR HOUSEHOLD APPLIANCES USING LIQUEFIED
PETROLEUM GASES**

ICS : 83.140

هذه الوثيقة مشروع لمواصفة قياسية سعودية تم توزيعها لإبداء الرأي والملاحظات عليها، ولا يجوز الاعتماد عليها كمواصفة قياسية سعودية إلا بعد اعتمادها من مجلس إدارة الهيئة، كما لا يجوز نشرها أو استخدامها إلا بعد الرجوع إلى الهيئة

RUBBER HOSES FOR HOUSEHOLD APPLIANCES USING LIQUEFIED PETROLEUM GASES

1- SCOPE AND FIELD OF APPLICATION

This standard is concerned with low pressure hoses made of rubber used in household appliances using liquefied petroleum gases (LPG).

2- COMPLEMENTARY REFERENCES

SASO 165 “Methods of Testing Rubber Hoses for Household Appliances Using Liquefied Petroleum Gases”.

3- DEFINITIONS

- 3.1 Low pressure hose: Elastic tubing through which gas passes from regulator outlet to gas inlet of the appliance.
- 3.2 Maximum working pressure: The maximum gas pressure acting on the hose.
- 3.3 Proof pressure: The maximum pressure which the hose can withstand for one minute without any leakage or change in dimensions more than permissible.
- 3.4 Burst pressure: The maximum pressure which the hose can withstand without bursting.

4- CHARACTERISTICS

The following shall be fulfilled in hoses:

- 4.1 The hoses shall be free from visual defects, such as cracks, holes and peels.
- 4.2 The maximum working pressure of the hose shall be 1.75 MPa (17.5 kgf/cm²).
- 4.3 The inside diameter of the hose shall be:
(6.3 ± 0.75) mm or (8 ± 0.75) mm
- 4.4 The hose shall withstand a hydraulic pressure (proof pressure) of 2.5 MPa at (23 ± 2)°C without any leakage. The change in diameter shall not exceed 10% of the internal diameter value, and the change in length shall not exceed 5.5%.
- 4.5 The burst pressure of the hose shall not be less than 5.2 MPa.
- 4.6 The hose shall be resistant to the liquefied petroleum gases. The swelling by volume when immersed for 72 hours at (23 ± 2)°C in pentane or commercial liquid butane shall not exceed 15%.

- 4.7 The burst pressure after ageing test shall not be less than 3.9 MPa.
- 4.8 The hose shall show no visual cracks during the cold flexing test and no sign of leakage during the proof pressure test carried thereafter.
- 4.9 Time of glowing shall not exceed 40 seconds for the flame resistance test of the hose material.

5- SAMPLING

- 5.1 The consignment shall be divided into homogeneous groups of the same length, diameter, quality, and batch.
- 5.2 Samples shall be taken at random for visual inspection and measuring of internal diameter according to Table 1.

Table 1
Number of samples withdrawn for visual inspection
and measurement of internal diameter

Number of hoses in one group	Number of hoses withdrawn for visual inspection and measuring of internal diameter
7 or less	all
From 8 to 15	7
From 16 to 40	10
From 41 to 110	15
From 111 to 300	25
From 301 to 560	35

- 5.3 A single hose shall be taken from each group visual inspected and tested for measurement of internal diameter. All other tests shall be carried out on a sample piece of (7-8 m) length from each hose, provided that each sample is taken from a different position in different hoses.

6- TESTING

- 6.1 Methods of test

Tests shall be carried out according to SASO 165 “Methods of Testing Rubber Hoses for Household Appliances Using Liquefied Petroleum Gases”.

- 6.2 Tests
- Test samples withdrawn according to item 5 shall be subjected to the following tests:
- 6.2.1 Visual inspection.
 - 6.2.2 Measurement of internal diameter.
 - 6.2.3 Hydraulic pressure test.
 - 6.2.4 Swelling test.
 - 6.2.5 Ageing test.
 - 6.2.6 Flame resistance test.
 - 6.2.7 Adhesion test.
 - 6.2.8 Strength and stretch test.
 - 6.2.9 Resistance to kinking test.
 - 6.2.10 Resistance to crushing test.
 - 6.2.11 Resistance to ozone test.

7- CRITERIA FOR TECHNICAL CONFORMITY

- 7.1 Each consignment shall be accompanied with a certificate indicating its compliance with all the requirements of this standard.
- 7.2 The group shall be considered conforming to the requirements of the visual inspection and internal diameter tests, if samples failing to pass these tests are less than 1% of the group and shall be considered non-complying if these samples exceed 1%.
- 7.3 The group shall be considered non-complying with this standard if any of the tested samples does not pass any of the following tests:
 - 7.3.1 Proof pressure test before and after ageing.
 - 7.3.2 Swelling test.
- 7.4 If any of the tested samples fails to pass any of the tests other than those mentioned in 7.3, tests shall be repeated on a number of samples equal to the number of tested samples from the same group. If all samples pass the repeated tests, the group shall be considered conforming to the requirements of this standard, otherwise it shall be considered non-conforming.

8- PACKAGING

Hoses shall be wrapped in suitable packages in lengths determined by agreement between producer and purchaser to protect them from damage and prevent ingress of moisture during transport or storage.

9- MARKING

On the surface of each hose, the following information shall be permanently indicated in Arabic or in both Arabic and English languages at intervals of not more than 1.5 meters each.

- 9.1 The manufacturer's name and/or trademark.
- 9.2 Country of origin.
- 9.3 The length of hose in meters.
- 9.4 The diameter of hose in millimeters.
- 9.5 Working pressure in MPa.
- 9.6 Month and year of production.
- 9.7 Liquefied petroleum gases (LPG).

DRAFT