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## Rubber and plastics hoses for underground mining — Method of test for flammability

*Tuyaux en caoutchouc et en plastique pour les exploitations minières souterraines — Méthode d'essai d'inflammabilité*



Reference number
ISO 8030 : 1987 (E)

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.



International Standard ISO 8030 was prepared by Technical Committee ISO/TC 45, *Rubber and rubber products.*



Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.





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# Rubber and plastics hoses for underground mining — Method of test for flammability

## 1 Scope and field of application

This International Standard specifies a method for assessing the flammability of hoses for use in underground mining, particularly coal mining.

Refer to the applicable hose specification for flame/afterglow requirements.

## 2 References

ISO 340, *Flame retardation of conveyor belts — Specifications and method of test.*

ISO 471, *Rubber — Standard temperatures, humidities and times for the conditioning and testing of test pieces.*



## 3 General

The test specified in this International Standard is a small-scale laboratory test and it is therefore important to note that the results obtained can only be indicative and do not allow the prediction of behaviour in a fire. It is above all a screening or quality control test and has been used for many years to assess the suitability of hoses for underground use in coal mines.

Attention is drawn to the need for ensuring that the test specified in this International Standard is carried out under suitable environmental conditions and that personnel are adequately protected against risk of fire, and inhalation of smoke and/or toxic products of combustion.

## 4 Apparatus

**4.1 Draught-free cabinet,** with a dark interior, a hole at the top for the escape of fumes, a hand-hole and flap for handling the burner and a sliding door with a viewing panel of suitable transparent material. The arrangement and approximate dimensions of the cabinet are shown in figure 1.

**4.2 Spirit burner,** constructed, operated and checked in accordance with the annex to ISO 340.

**4.3 Stand,** for supporting the test piece in a horizontal position above the burner (see figure 2).

**4.4 Stop-watch** or **stop-clock.**

## 5 Test piece

The test piece shall be a 300 mm long sample of hose. Six test pieces shall be tested.

## 6 Conditioning of test piece

No test shall be carried out within 24 h of manufacture. Test pieces shall be conditioned at standard temperature and humidity (see ISO 471) for at least 3 h before testing. This may be part of the 24 h period after manufacture.

## 7 Procedure

In subdued lighting, adjust the burner as specified in ISO 340 with the burner standing vertically. The base of the burner shall be at an angle of 45° to the horizontal during the test. The top of the burner shall be 50 ± 2 mm from the test piece and the flame shall impinge on the test piece at an angle of 90° to the longitudinal axis and at the mid-point of the test piece.

Allow the flame to impinge on the test piece for 60 ± 1 s and then withdraw the burner. Record the duration of the persistence of flame and afterglow following withdrawal of the burner for each of the six test pieces and calculate the average duration.

## 8 Test report

The test report shall include the following information:

a) the statement:

"The test results relate only to the behaviour of the test pieces under the particular conditions of test; they shall not be used as a means of assessing the potential fire hazard of the hose in use."

b) the hose type nominal bore;

c) the date of manufacture and batch number or reference, if known;

d) the method of manufacture and details of reinforcement;

e) a reference to this International Standard;

f) the mean duration of flame and afterglow, the presence of burning droplets, if any, and the individual results from the six test pieces;

g) any tendency for the material to burn freely or to drip, or for the flame to propagate after the withdrawal of the burner.

Dimensions in millimetres
Tolerance ± 2 % unless otherwise stated

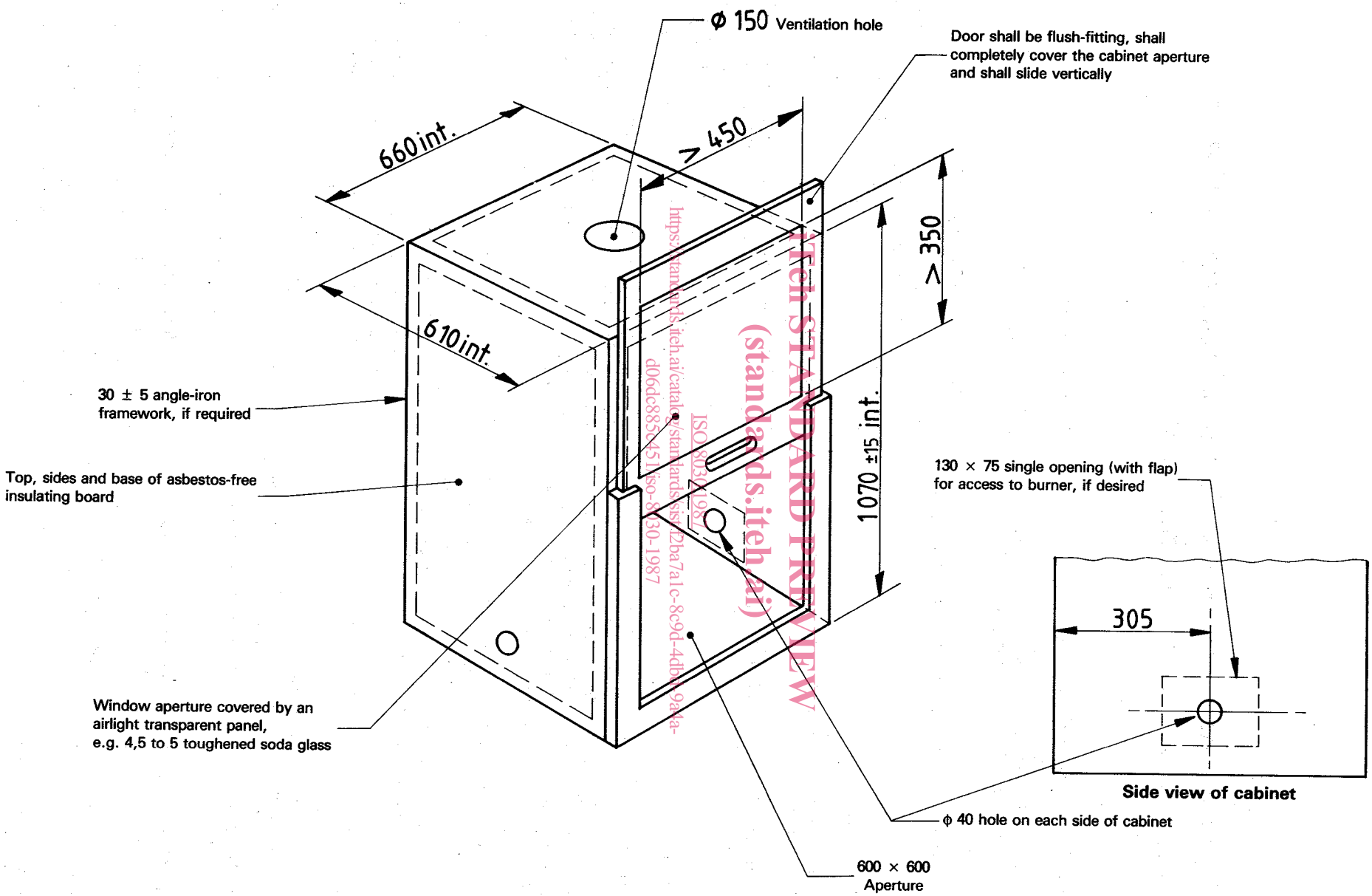




**Figure 1 — Cabinet for flammability test**

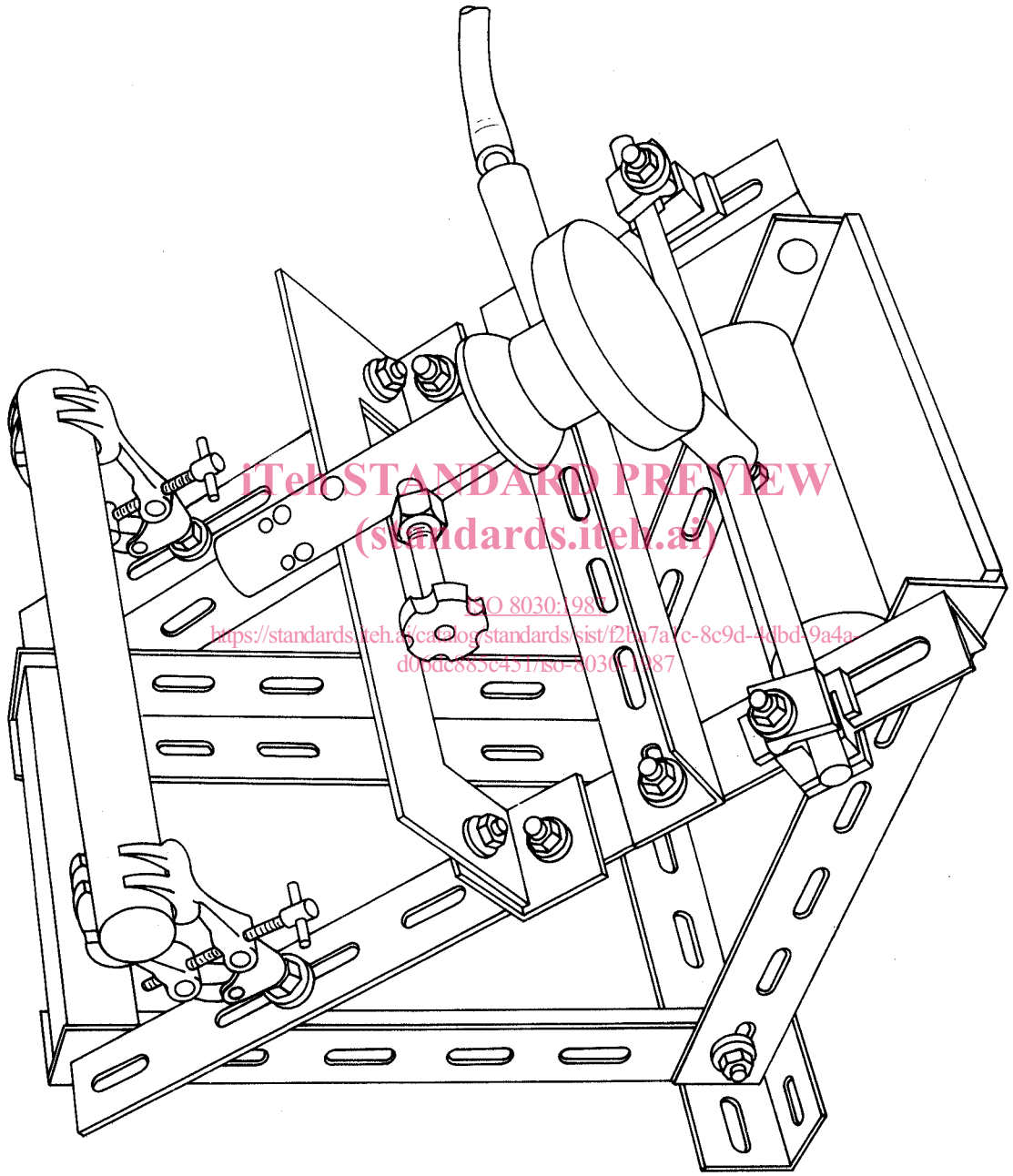



Figure 2 — Arrangement for flammability test

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