

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION R 340

FLAME RESISTANCE OF CONVEYOR BELTS
SPECIFICATIONS AND METHOD OF TEST

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 340, *Flame Resistance of Conveyor Belts—Specifications and Method of Test*, was drawn up by Technical Committee ISO/TC 41, *Pulleys and Belts (including Vee-Belts)*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1958 and led, in 1961, to the adoption of a Draft ISO Recommendation.

In December 1961, this Draft ISO Recommendation (No. 494) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

| | | |
|----------------|-------------|----------------|
| Argentina | France | New Zealand |
| Austria | Germany | Portugal |
| Belgium | Greece | Spain |
| Brazil | India | Sweden |
| Bulgaria | Ireland | Switzerland |
| Czechoslovakia | Israel | United Kingdom |
| Denmark | Italy | U.S.A. |
| Finland | Netherlands | U.S.S.R. |
| | | Yugoslavia |

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in September 1963, to accept it as an ISO RECOMMENDATION.

FLAME RESISTANCE OF CONVEYOR BELTS

SPECIFICATIONS AND METHOD OF TEST

1. SCOPE

The purpose of this ISO Recommendation is to specify conditions for a flame resistance test for conveyor belts, and the corresponding specifications.

NOTE. — To increase safety, it is important for tests to take account, to the greatest possible extent, of the circumstances which may create hazards. It is for this reason that, in the present ISO Recommendation, provision is made for performing the test on test pieces without covers, as covers of belts may be ripped off accidentally in service.

2. SPECIFICATIONS

2.1 Duration of flame (after removal of the burner)

Less than 45 seconds for each group of six tests, and no single value should be greater than 15 seconds.

(See clause 3.4 "Procedure").

2.2 Non-reappearance of flame* (after applying a current of air)

(See clause 3.4 "Procedure").

3. METHOD OF TEST

3.1 Principle

A test piece is placed in the flame of a burner, then the burner is removed and the combustion time of the test piece is noted (duration of flame). A current of air is applied to the test piece a certain time after the extinction of the flame.

3.2 Test pieces

3.2.1 Shape and dimensions

Rectangular test piece (cut out from the conveyor belt):

length: 200 mm (8 in),

width: 25 mm (1 in).

3.2.2 Number and distribution

(a) If the test is made with test pieces with and without covers:

12 test pieces distributed as follows:

with covers: 3 warp way and 3 weft way,

without covers: 3 warp way and 3 weft way.

(b) If the test is made with test pieces with covers only:

6 test pieces, 3 warp way and 3 weft way.

3.2.3 Preparation

Cut out the test pieces with a knife.

For the test pieces without covers, remove the covers by stripping or, if this is impossible, with a knife or by buffing. In the latter event, take care that the cover is not abnormally overheated, and cease buffing as soon as the threads of the carcass become visible.

* The possibility of a control of glow after extinction of the flame is under study.

3.3 Apparatus

Spirit burner, whose essential characteristics are given in Figure 1.

Tank and flexible supply tube of approximately 1.50 m (60 in) length.

Fuel, mixture of

- 95 per cent of ethanol (95%), and
- 5 per cent methanol.

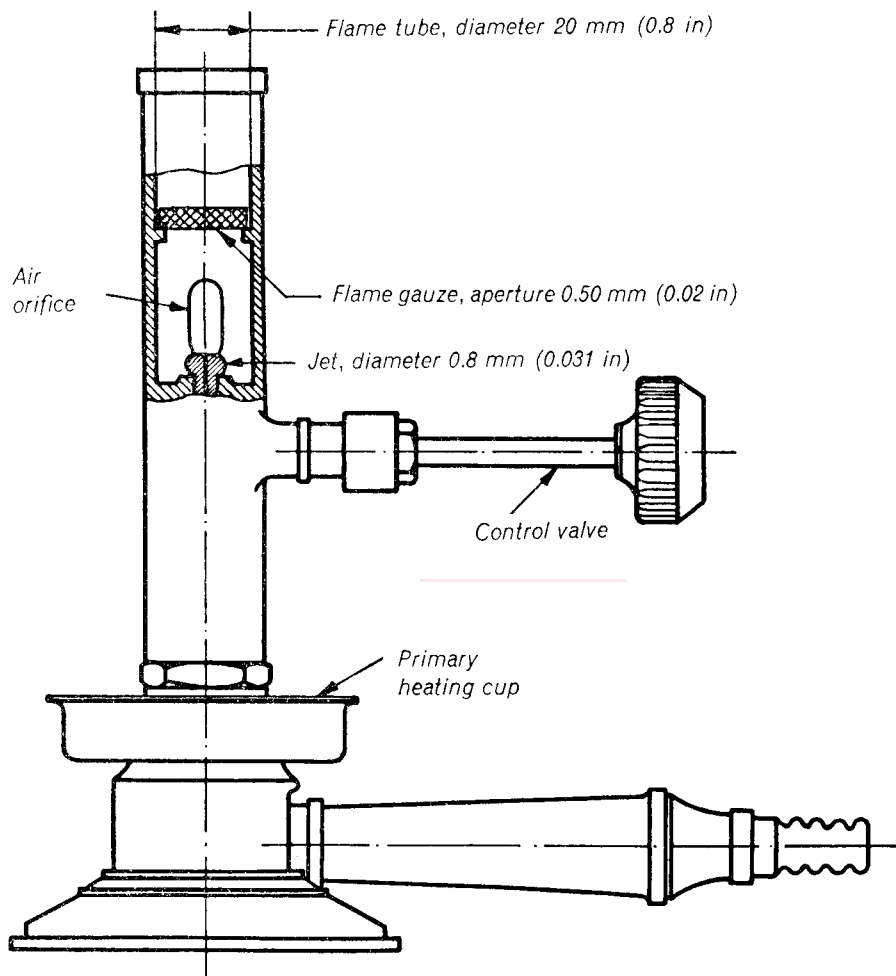


FIG. 1 — Spirit burner

3.4 Procedure

Operate in an open atmosphere, sheltered from draughts.

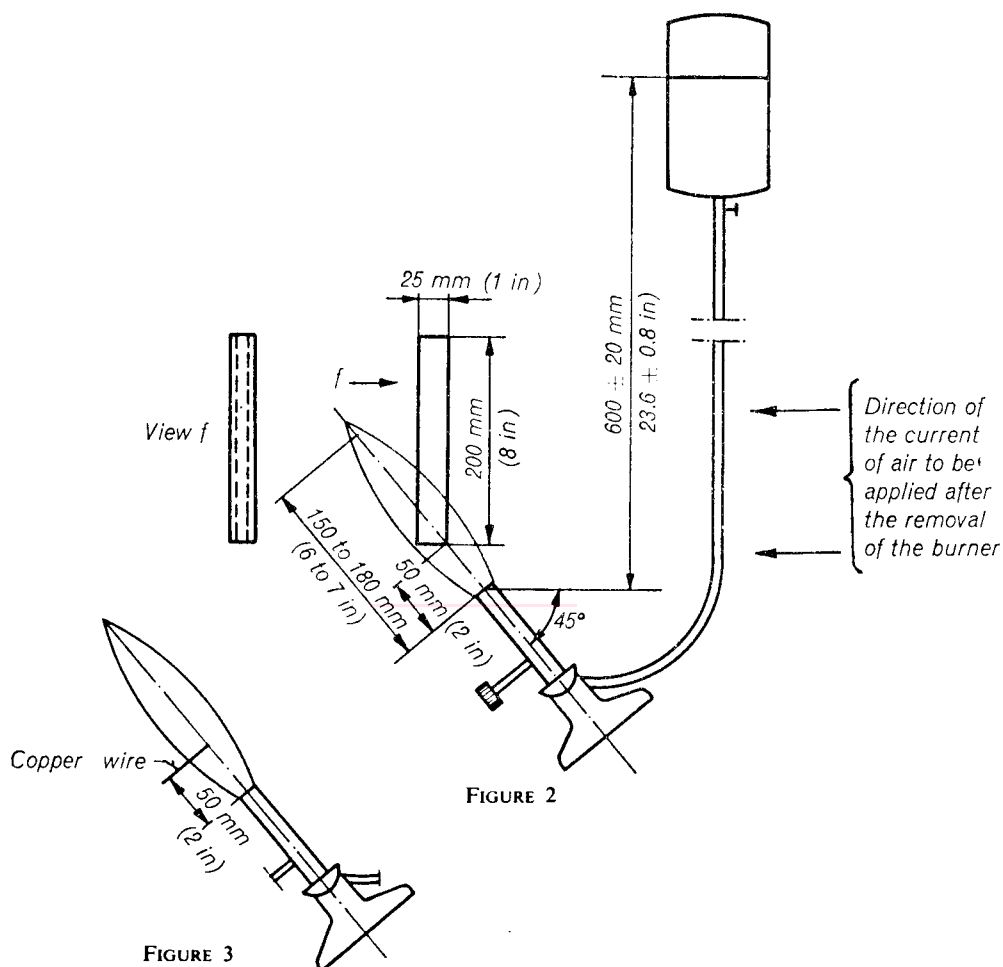
Arrange the test piece in a vertical plane (with its major axis vertical) so that its lower edge is 50 mm (2 in) away from the top of the burner. The burner should be inclined at an angle of 45° and the vertical plane through its axis should coincide with the mid plane of the test piece parallel to the covers (see Fig. 2).

The burner should have a flame length of 150 to 180 mm (6 to 7 in). Check that the burner is operating properly by means of a bare copper wire of 0.71 mm (0.028 in) diameter, having a free length of at least 100 mm (4 in), which should be inserted into the flame in the position occupied by the lower end of the test piece (see Fig. 3). If the wire does not melt within 6 seconds, the adjustment of the burner should be corrected.

Hold the test piece in the flame for 45 seconds and then remove the burner without extinguishing it. (Keep the burner sheltered from the current of air, if further tests are to be performed).

Note the duration of flame, starting from this moment.

One minute (with a tolerance of ± 10 seconds), after the removal of the burner, apply a current of air having a velocity of about 1.5 m/s (60 in/s) (see Fig. 2).



3.5 Expression of results

Duration of flame (after removal of the burner)

(1) Express the results by

(a) total of results of 6 tests with covers:

3 warp way, 3 weft way

(b) whenever relevant, total of results of 6 tests without covers:

3 warp way, 3 weft way.

(2) Note, in each of cases (a) and (b), the maximum value of the individual results obtained.

Non-reappearance of flame

Note if the flame reappeared or did not reappear.