



**SLOVENSKI STANDARD**  
**SIST EN 20340:1999**  
**01-april-1999**

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Conveyor belts - Flame retardation - Specifications and test method (ISO 340:1988)

Schwerentflammbare Fördergurte - Anforderungen und Prüfverfahren (ISO 340:1988)

Courroies transporteuses - Résistances a la flamme - Spécifications et méthode d'essai  
(ISO 340:1988)

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Ta slovenski standard je istoveten z: <sup>SIST EN 20340:1999</sup> EN 20340:1993  
<https://standards.iteh.ai/catalog/standards/sist/1d98a5cf-6c3a-48fd-bd95-d30a0c251fd9/sist-en-20340-1999>

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**ICS:**

53.040.20      Deli za transporterje      Components for conveyors

**SIST EN 20340:1999**      en

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EUROPEAN STANDARD

EN 20340:1993

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1993

UDC 621.867.21:620.1:536.468

Descriptors: Belts, conveyor belts, fire tests, flammability testing, fire resistance

English version

**Conveyor belts - Flame retardation - Specifications  
and test method (ISO 340:1988)**

Courroies transporteuses - Résistances à la  
flamme - Spécifications et méthode d'essai  
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This European Standard was approved by CEN on 1993-02-26. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Foreword

This European Standard was submitted to the Unique Acceptance Procedure in accordance with Resolution BTS2 69/1991 (document BTS2 N 180) taken by the BTS2 "Engineering".

Following the positive result of the Unique Acceptance Procedure, ISO 340:1988 "Conveyor belts - Flame retardation - Specifications and tests method" was accepted as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical test or by endorsement, at the latest by September 1993, and conflicting national standards shall be withdrawn at the latest by September 1993.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

## Endorsement notice

The text of the International Standard ISO 340:1988 was approved by CEN as a European Standard without any modification.

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# INTERNATIONAL STANDARD

ISO  
340

Second edition  
1988-06-15



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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION  
ORGANISATION INTERNATIONALE DE NORMALISATION  
МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

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## Conveyor belts — Flame retardation — Specifications and test method

*Courroies transporteuses — Résistance à la flamme — Spécifications et méthode d'essai*

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## ISO 340 : 1988 (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. 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 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 340 was prepared by Technical Committee ISO/TC 41, *Pulleys and belts (including veebelts)*.

[SIST EN 20340:1999](#)

<https://standards.iteh.ai/catalog/standards/sist/1d98a5cf-6e3a-48fd-bd95->

This second edition cancels and replaces the first edition (ISO 340 : 1942), clauses 0, 1, 4 and 5 of which have been technically revised.

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.

# Conveyor belts — Flame retardation — Specifications and test method

## 0 Introduction

In many countries, specifications of flame retardation of conveyor belts and the corresponding methods of test are the subject of legislation. However, it has been thought necessary to prepare an International Standard in order to give a reference if there is no particular legislation.

It is stressed that for small-scale laboratory tests of the type covered in this International Standard, the correlation of test results with the flammability under other conditions is not in any case implied. For this reason, the relevant conditions of belt use shall be taken into account in order not to obtain a false sense of security by uncritical application of this International Standard.

## 1 Scope and field of application

This International Standard specifies conditions for a flame retardation test for conveyor belts, and the corresponding requirements.

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

## 2 References

ISO 235, *Parallel shank twist jobber and stub series drills and Morse taper shank drills.*

ISO 426-2, *Wrought copper-zinc alloys — Chemical composition and forms of wrought products — Part 2 : Leaded copper-zinc alloys.*

ISO 565, *Test sieves — Woven metal wire cloth, perforated plate and electroformed sheet — Nominal sizes of openings.*

ISO 835, *Laboratory glassware — Graduated pipettes.*

ISO 2194, *Wire screens and plate screens for industrial purposes — Nominal sizes of apertures.*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1 : Test sieves of metal wire cloth.*

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2 : Test sieves of metal perforated plate.*

## 3 Specifications

### 3.1 Duration of flame (after removal of the burner)

The duration of flame shall be less than 45 s for each group of six tests, and no individual value shall be greater than 15 s (see 4.7.1).

### 3.2 Non-reappearance of flame (after applying a current of air)

The flame shall not reappear (see 4.7.2).

## 4 Test method

### 4.1 Principle

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

### 4.2 Test pieces

#### 4.2.1 Shape and dimensions

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

- length : 200 mm
- width : 25 mm

#### 4.2.2 Number and distribution

4.2.2.1 If the test is made on test pieces with and without covers, prepare 12 test pieces distributed as follows :

- with covers : 3 warp way and 3 weft way;
- without covers : 3 warp way and 3 weft way.

4.2.2.2 If the test is made on test pieces with covers only, prepare 6 test pieces, 3 warp way and 3 weft way.

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**4.2.3 Preparation**

Cut out the test pieces with a knife.

For 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.

**4.3 Burners****4.3.1 Operation**

On agreement between the parties concerned one of the burners specified in 4.3.2 and 4.3.3 shall be used.

**4.3.2 Spirit burner**

The spirit burner, its characteristics and operating conditions, the fuel, and the tank and flexible supply tube of approximately 1,5 m length are specified in figure 1 and the annex.

During the test the fuel consumption of the burner shall be  $2,55 \pm 0,15$  ml/min giving a flame length of approximately 150 to 180 mm.

Check that the burner is operating properly by measuring the fuel flow according the method described in A.3.3.

**4.3.3 Gas burner**

The gas burner (Bunsen burner) with burner tube of diameter between 10 and 12 mm shall be operated with town gas or liquid petroleum gas.

During the test the burner shall have a flame of a total length of approximately 150 to 180 mm with an inner flame of about 50 mm long. The inner flame temperature shall be  $900 \pm 100$  °C. A thermocouple device may be used to measure the inner flame temperature.

**4.4 Ambient conditions**

Operate in an open atmosphere, sheltered from draughts.

**4.5 Arrangement of test pieces**

On agreement between the parties concerned the test pieces shall be arranged vertically (see 4.5.1) or inclined at 45° (see 4.5.2).

**4.5.1** Arrange the test piece vertically (with its major axis vertical) so that its lower edge is 50 mm away from the top of the burner.

The burner shall be inclined at 45° and the vertical plane through its axis shall coincide with the midplane of the test piece parallel to the covers (see figure 2).

**4.5.2** Arrange the burner vertically and the test piece inclined at 45°. The relative position between test piece and burner shall be as described in 4.5.1 (see figure 3).

**4.6 Procedure**

Hold the test piece in the flame for 45 s 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  $\pm 5$  s) after the removal of the burner, apply a current of air with a velocity of about 1,5 m/s (see figures 2 and 3).

**4.7 Expression of results****4.7.1 Duration of flame** (after removal of the burner)**4.7.1.1** Express the results by :

a) total of results of 6 tests with covers, i.e. :

3 warp way, 3 weft way;

b) whenever relevant, total of results of 6 tests without covers, i.e. :

3 warp way, 3 weft way.

**4.7.1.2** Note, in each of cases 4.7.1.1 a) and b), the maximum value of the individual results obtained.

**4.7.2 Non-reappearance of flame**

Note whether or not the flame reappears.

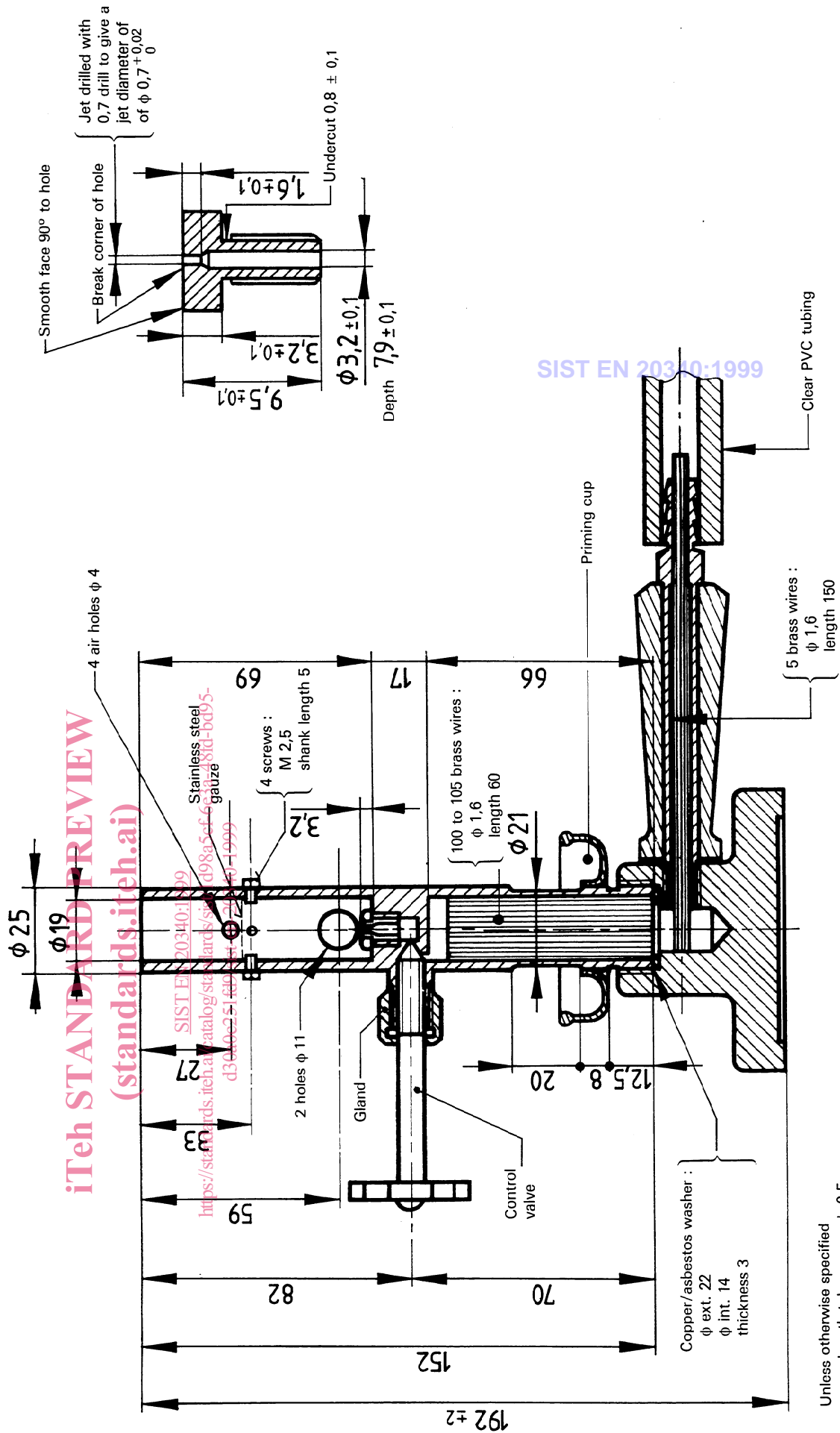
**5 Test report**

The test report shall refer to this International Standard and shall contain the following information :

- identification of the belt tested;
- description of the burner used;
- description of the test piece arrangement;
- results of the test, as described in 4.7;
- date of the test.



Dimensions in millimetres



Unless otherwise specified  
 — length tolerances :  $\pm 0,5$   
 — diameter tolerances :  $\pm 0,1$

Figure 1 — Spirit burner