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## **Textiles — Determination of surface burning time of fabrics**

*Textiles — Détermination de la durée de brûlage en surface des tissus*



Reference number  
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## **Foreword**

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10047 was prepared by Technical Committee ISO/TC 38, *Textiles*, Sub-Committee SC 19, *Burning behaviour of textiles and textile products*.

Annexes A and B form an integral part of this International Standard.

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# Textiles — Determination of surface burning time of fabrics

## 1 Scope

This International Standard specifies a method for the measurement of surface burning time of textile fabrics which have a raised fibre surface, i.e. a napped, pile, tufted, flocked or similar surface.

## 2 Definitions

For the purposes of this International Standard, the following definitions apply.

**2.1 surface burn:** Combustion limited to the surface of a material.

**2.2 surface burning time:** Time required for the pile or nap of a fabric to burn a defined distance when tested by the method described herein.

## 3 Principle

A dry specimen of the fabric is supported on a vertical plate and its raised surface is ignited near the top in a specified manner. The spread of flame downwards on the surface of the fabric to a reference line is timed.

**NOTE 1** The flame of a pile surface travels more reproducibly downwards or sideways than upwards. It is considered that the blanketing effect of the combustion products may not allow the surface pile above the flame front to burn, whereas the surface pile below the flame front is not affected in this way.

## 4 Health and safety of test operators

Burning of textiles may produce smoke and toxic gases which can affect the health of operators. The

testing area shall be cleared of smoke and fumes by suitable means of forced ventilation after each test, then restored to the required testing conditions (see clause 6 and 8.1).

## 5 Apparatus and materials

### 5.1 Construction of testing equipment

The equipment shall be constructed of material which will not be adversely affected by the gas fumes.

Some products of combustion are corrosive, and the equipment shall be made of materials which will facilitate cleaning.

**5.2 Specimen holder,** consisting of a stainless steel plate approximately 150 mm long, 75 mm wide and 3 mm thick (see figure 1). The specimen shall be framed by stainless steel 3 mm thick so that an area of 125 mm × 50 mm of fabric surface is exposed for testing. The frame shall have a reference mark which shall be 75 mm below the ignition point of the test specimen.

**5.3 Gas burner,** as described in annex A.

**NOTE 2** Small differences in the design and dimensions of the burner can influence the configuration of the burner flame and so affect the results of the tests.

**5.4 Bottled gas,** commercial grade propane or butane or mixtures thereof.

**5.5 Timing device for burner,** to control and measure the application time of the flame for a period of  $1,0 \text{ s} \pm 0,1 \text{ s}$ . Alternatively, flame application time may be manually controlled.