STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

TEXTILE FABRICS—BURNING BEHAVIOUR

AS 2755.1
DETERMINATION OF EASE OF IGNITION OF VERTICALLY ORIENTED SPECIMENS

1 SCOPE AND APPLICATION. This standard sets out a method for the measurement of ease of ignition of vertically oriented textile fabrics intended for apparel, curtains and draperies in the form of single or multi-component (coated, quilted, multi-layered, sandwich construction and similar combinations) fabrics.

NOTE: This standard takes into account the development of ISO 6940 and is technically identical with that standard. The Explanatory Report of the development of ISO 6940 is given in the annex to this standard.

2 REFERENCED DOCUMENT. The following standard is referred to in this standard:

AS 2001.1 Methods of Test for Textiles—Conditioning Procedures

3 DEFINITION. For the purpose of this standard, the following definition applies:

Minimum ignition time—minimum time of exposure of a material to an ignition source to obtain sustained combustion under specified test conditions.

4 PRINCIPLE. A defined ignition flame from a specified burner is applied to textile specimens which are vertically oriented. The time necessary to achieve ignition is determined as the mean of the measured times for ignition of the fabric.

NOTE: Attention is drawn to Appendix C regarding quality of experimental techniques.

5 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 should be cleared of smoke and fumes by suitable means.

6 APPARATUS AND MATERIALS.

6.1 Construction of Testing Equipment. Some products of combustion are corrosive. The equipment should be constructed of material which will not be adversely affected by the fumes.

6.2 Location of Test. A location in which the air movement is less than 0.2 m/s at the commencement of the test and is not further influenced by mechanical devices operating during the test. The volume of air surrounding the test location shall be such that the test is not affected by any reduction of oxygen concentration. Where an open fronted cabinet is used for the test, provision shall be made to permit the specimen to be mounted at least 300 mm from any wall.

6.3 Templates. Flat rigid templates made of suitable material and of a size corresponding to the size of the specimens shall be used. Holes approximately 2 mm diameter are drilled in each corner of the template and positioned so that the distances between the centres of the holes correspond to the distances between the pins on the frame (see Fig. 1). The holes shall be located equidistant about the vertical centrelines of the template (see Note to Clause 7.2).

6.4 Specimen Holder

6.4.1 Two specimen holders, each consisting of a metal frame on which is mounted 4 pins to support the test specimen (see Fig. 1) shall be used. One specimen holder (No. 1) is for specimens 80 mm × 80 mm, the other specimen holder (No. 2) is for specimens 80 mm × 200 mm. The pins for supporting the specimen have a maximum diameter of 2 mm and a minimum length of 27 mm for locating the specimen in a plane at least 20 mm away from the frame.

NOTE: To locate the specimen in a plane away from the frame, spacer stubs of 2 mm diameter may be provided adjacent to the pins.

6.4.2 If provision is made for testing of multiple specimens on the one specimen holder, the location of the pins shall be such that a space of 10 mm is provided between adjacent mounted specimens.

6.5 Gas Burner. A gas burner as described in Appendix A.

NOTE: 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.

6.6 Gas. Commercial grade propane or butane gas.

6.7 Timing Device. A timing device to control and measure the application time of the flame accurate to 0.2 s or better shall be used. The device shall have provision for setting time intervals of 1.0 s or less.

7 TEST SPECIMENS.

7.1 Size. The size of each specimen shall be the following dimensions (see Clause 8.6):

(a) For Frame 1: 80 mm × 80 mm, tolerance +5, – 0 mm
(Fig. 1, dimension X = 70).

(b) For Frame 2: 200 mm × 80 mm, tolerance + 5, – 0 mm
(Fig. 1, dimension X = 190).

7.2 Pin Location Marks. Place the template (see Clause 6.3) for the appropriate specimen size centrally

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