

## STANDARDS ASSOCIATION OF AUSTRALIA

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**Australian Standard**  
**METHODS OF TEST FOR**  
**HOSE MADE FROM ELASTOMERIC MATERIALS**

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**AS 1180.10B**  
**DETERMINATION OF COMBUSTION PROPAGATION**  
**CHARACTERISTICS OF A HORIZONTALLY**  
**ORIENTED SPECIMEN OF HOSE USING**  
**SURFACE IGNITION**

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**1 SCOPE.** This standard sets out a method for determining the combustion propagation characteristics of hose made from elastomeric materials.

NOTE: The method is derived from and closely resembles that contained in Draft British National Coal Board Specification No 182—1972, Air and Water Hose.

**2 PRINCIPLE.** Test specimens of the hose held in horizontal orientation are subjected to direct impingement of a flame for a fixed time under empirical draught-free conditions and observations are made of duration of flaming or glowing after flame removal and of flame propagation distance.

**3 APPARATUS AND REAGENTS.**

**3.1 Apparatus.**

(a) *Burner*, Analite No T 203 modified as shown in Fig. 1 with the incorporation of ceramic orifices.

NOTE: Information as to the availability of burner working drawings and a suitable manufacturer able to construct same may be obtained from CSIRO, Division of Building Research, Graham Road, Highett, Victoria 3190.

(b) *Draught-free cabinet* (see Fig. 2), constructed from sheet metal or other fire-resistant material, with a dark interior, approximately 650 mm in width by 600 mm in depth by 1050 mm in height with a 150 mm diameter hole at the top (to allow fumes to escape). One side is provided with a hand hole and flap and the front is provided with a viewing panel of suitable material.

(c) *Ventilating fan*.

(d) *Stand*, for supporting the test specimen or piece. This stand is placed inside the cabinet.

(e) *Timing device*. Stopwatch or other timer reading in seconds.

**3.2 Reagents.** Propane gas (at least 95 percent purity)\* and compressed air supply for burner.

**4 TEST SPECIMENS.** Prepare six test specimens, each 300 mm long, from samples of hose taken at random from a production run. Make three marks on each specimen, the middle one approximately midway along the hose with one on either side 50 mm from the middle mark.

**5 PROCEDURE.** The procedure shall be as follows:

(a) Place the test specimen so that it is supported in a horizontal position, using a 3 mm diameter steel rod.

(b) With the burner standing vertically, light and adjust the flame in subdued lighting conditions to a height of 150 mm above the top of the burner.

(c) Position the burner (see Fig. 3) so that

(i) its base is at an angle of 45 degrees to the horizontal;

(ii) its top is 50 mm from the test specimen;

(iii) the flame impinges on the centre of the test specimen at an angle of 90 degrees to the longitudinal axis.

(d) Allow the burner flame to impinge on the test specimen for 60 s and withdraw.

(e) Observe any flame or glowing.

(f) Determine the duration of flame or glowing.

(g) Measure the maximum charred length in the direction of the longitudinal axis (after removal of the surplus charred material).

(h) Repeat for the remaining test specimens.

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\* Available as Automotive Propane HD5.