

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TESTING CONVEYOR AND ELEVATOR BELTING

AS 1334.10

DETERMINATION OF IGNITABILITY AND FLAME PROPAGATION CHARACTERISTICS OF CONVEYOR BELTING

1 SCOPE. This standard sets out a method for determining the ignitability and flame propagation characteristics of a horizontally oriented specimen of conveyor belting.

2 REFERENCES. This standard was derived from Department of Mines, N.S.W., Testing Memorandum No 2, Test and Approval of Fire Resistant Conveyor Belting for Use in Coal and Shale Mines.

3 PRINCIPLE. The end of a horizontally oriented specimen of belting is subjected to a flame from a specified gas burner for a given period and the duration of flame after removal of the burner is measured. After the disappearance of flame, a current of air is passed over the specimen and the duration of the afterglow is measured.

4 APPARATUS AND REAGENTS.

4.1 Apparatus. A test gallery of approximately 500 mm × 500 mm × 500 mm (see Fig. 1) having a glass inspection window on one side and containing the following items of equipment:

- (a) A support stand, ring clamp, wire gauze 125 mm square of 0.56 mm dia. wire and 0.71 mm openings.
- (b) A bunsen burner having an 11 mm ID burner tube or equivalent and capable of being adjusted, using propane gas fuel, to produce an outer flame 75 mm to 100 mm in total length and an inner flame about 25 mm long. The flame temperature shall be maintained at $1000 \pm 100^\circ\text{C}$.
- (c) An electric fan or nozzle capable of producing an air velocity of 1.5 ± 0.15 m/s.
- (d) A suitable timing device to measure the duration of flame and afterglow.
- (e) A mirror mounted inside the test gallery to permit the specimen to be observed from the back through the inspection glass.

4.2 Reagents. Propane gas (at least 95 percent purity)* supply for burner.

5 TEST PIECES.

5.1 Acceptance Testing. Four test pieces shall be prepared 150 mm long by 13 mm wide by the full thickness of the belting. Two test pieces shall be cut parallel to the longitudinal direction of the belting and two parallel to the transverse direction of the belting.

5.2 Type Approval. For type approval, ten test pieces shall be prepared 150 mm long by 13 mm wide by the full thickness of the belting. Five test pieces shall be cut parallel to the longitudinal direction of the belting and five parallel to the transverse direction of the belting.

6 PROCEDURE. The test shall be carried out in the absence of outside wind currents. The test procedure shall be as follows:

- (a) Thoroughly clean the inspection glass and mirror before each test.
- (b) Arrange the test piece, pulley side down, in the clamp with its longitudinal axis in a horizontal position and its transverse axis inclined at an angle of 45 degrees. So arrange the test piece that it will be 25 mm above the top of the burner when the burner is placed under it. Clamp the wire gauze horizontally 6 mm below the test piece so that 12 mm of the test piece is extended beyond the end of the gauze.

*Available as Automotive Propane HD5.

