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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TESTING CONVEYOR AND ELEVATOR BELTING

AS 1334.6
DETERMINATION OF RESISTANCE OF COVERS TO AGEING

1 SCOPE. This standard sets out a method of determining the resistance of belt covers to ageing.

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

AS 1334 Methods of Testing Conveyor and Elevator Belting
1334.5 Determination of Tensile Strength and Elongation of Covers of Conveyor Belting

3 PRINCIPLE. Test pieces taken from the covers of belting are exposed to hot air in an air circulating oven or cell type ageing block and the effect on the tensile strength and elongation of the test pieces is observed.

4 APPARATUS. The apparatus shall consist of an air circulating oven as described in (a) below or a cylindrical vertical ageing cell as described in (b). It shall be capable of maintaining a temperature of 70 ± 1 °C.

(a) The air circulating oven shall be capable of controlling the air circulation to three changes per hour and shall have internal dimensions not exceeding 1 m × 1 m × 1.5 m. Provision shall be made for suspending test pieces so that they do not come within 10 mm of each other. Glass or aluminium supports are recommended.

The air shall be heated before coming in contact with the test pieces and the temperature shall be measured by placing a thermometer among them.

(b) The cylindrical vertical ageing cells shall consist of one or more cylindrical vertical cells having a minimum height of 300 mm. The cells shall be surrounded by a thermostatically controlled good heat-transfer medium (aluminium block, liquid bath, saturated vapour).

The design of the apparatus shall be such that heated air will enter the bottom of the cell and be exhausted out of the top of it without being recirculated. Air passing through one cell shall not enter other cells. Provision shall be made for a slow circulation of air through the cells of not less than three changes per hour. The incoming air shall be within 1 °C of the specified temperature at the point of entry into the cell.

The temperature of the test cells shall be uniform in time and space within 1.0 °C of the specified ageing temperature. Suitable means shall be provided for controlling and measuring the temperature.

5 TEST PIECES. Ten test pieces shall be prepared for each cover tested, five for determining the original tensile properties of the cover and five for determining the tensile properties after ageing.

The test pieces shall be prepared as set out in AS 1334.5.

6 CONDITIONING OF TEST PIECES. The five test pieces for determining the original properties of the rubber covers shall be conditioned in accordance with the procedures set out in AS 1334.5, or as required for the property being examined.

The five test pieces for determining the aged properties of the covers need not be conditioned prior to ageing, but the ageing period must not commence less than 16 h after manufacture.

7 PROCEDURE. The tensile properties of the test pieces, before and after ageing, shall be determined as set out in AS 1334.5. Tests shall not be carried out where the rubber cover is insufficiently thick to give a test piece 1.0 mm thick. The ageing properties shall be determined as follows:

(a) Five of the test pieces shall be tested for tensile properties before ageing not more than 4 days before or 11 days after commencement of the ageing tests.

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