STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

METHODS OF TESTING SMOKE/HEAT RELEASE VENTS

AS 2428.2
DETERMINATION OF ABILITY TO OPERATE UNDER WIND LOADING

1 SCOPE. This standard sets out the method for determining the ability of a smoke/heat release vent to operate and remain free from visible damage when exposed to wind of specific velocity.

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

AS 2428.1 Methods of Testing Smoke/Heat Release Vents — Determination of Resistance to Leakage During Rain.

3 PRINCIPLE. The smoke/heat release vent is mounted in a section of roof and subjected to an air stream. The ability of the vent to withstand the effects of wind and to operate in wind is observed. The maximum wind velocity at which the vent is capable of opening and remaining open, i.e. the maximum wind velocity for operation v_o, is determined.

4 APPARATUS. The following apparatus is required:

(a) A wind machine having a propeller of a diameter not less than 3900 mm, for producing an airstream or wind. The wind velocity shall be measured 11 ± 1 m upstream from the nearest part of the test specimen.

(b) A roof panel of variable slope or pitch, capable of rotating horizontally so that the axis of tilting can be set either normal or parallel to the airstream (see Fig. 1).

The space between the roof panel and the ground or floor below shall be enclosed with solid construction that —

(i) is sealed to the ground or floor and to the underside of the roof panel so as to prevent the entry of water;

(ii) is sealed at any joint and at the corners to prevent the entry of water; and

(iii) has the leeward side open for access.

5 SIZE OF SPECIMEN. The test specimen shall be full size, except that where any dimension of the full-sized vent exceeds that which can be accommodated by the test equipment, a specimen of the largest practicable size agreed by the testing laboratory and, where applicable, the Certification Body, shall be tested.

6 MOUNTING. The vent shall be mounted in the roof panel in the same orientation with respect to the roof slope as is intended for its installation in a building, and shall be waterproofed and supported around the outside perimeter in the same manner and by the same fixings as are intended for its installation in the building structure.

7 PROCEDURE. The procedure shall be as follows:

NOTE: It may be convenient for the tests described in AS 2428.1 to be conducted concurrently with those described herein.

(a) With the vent at the windward side, set the roof panel —

(i) with its tilting axis at right angles to the airstream; and

(ii) at the maximum pitch nominated by the manufacturer.

(b) Start the wing machine with the vent open.

(c) Close the vent.

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