AS 2427—1983

Australian Standard®

SMOKE/HEAT RELEASE VENTS

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The following interests are represented on Committee BD/18/2:

Air-conditioning and Refrigeration Equipment Manufacturers Association of Australia

Australian Uniform Building Regulations Coordinating Council

Commonwealth Fire Board

Confederation of Australian Industry

Department of Defence (Commonwealth)

Experimental Building Station

Fire Fighting Authorities

Insurance Council of Australia

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PREFACE

This edition of this standard was prepared by the Association's Committee on Fire Venting, to supersede AS 2427—1981.

This edition is technically identical with the previous edition but some of the material has been rearranged to facilitate the application of this standard with the associated test methods (AS 2428) and the new standard for the design, installation and commissioning of smoke/heat venting systems, AS 2665.

The requirements of this standard are based on research conducted by the Experimental Building Station.

Maintenance of these vents is dealt with in AS 1851, Maintenance of Fire Protection Equipment, Part 5 — Automatic Smoke/Heat Venting Systems.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard for SMOKE/HEAT RELEASE VENTS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for vents that are intended to be mounted in roofs of buildings to release the products of combustion in the event of fire.

NOTE: Guidance on the information that should accompany an enquiry or order is given in Appendix A.

1.2 APPLICATION. Smoke/heat release vents shall comply with the requirements of Clause 1.5 and with the relevent requirements of the following Sections:

(a) Section 2—Materials of Construction.

(b) Section 3—Design and Manufacturing Requirements.

(c) Section 4—Performance Requirements.

Compliance with this standard shall be assessed in accordance with Section 5.

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1397 Hot-dipped Zinc-coated or Aluminium/ Zinc-coated Sheet Steel in Coil and Cut Lengths

AS 1444 Wrought Alloy Steels—AISI-SAE Standard, Hardenability (H) and Stainless Series

AS 1449 Wrought Alloy Steels—Stainless and Heat-resisting Steel Plate, Sheet and Strip

AS 1472 Carbon Steel Spring Wire for Mechanical Springs

AS 1562 Design and Installation of Metal Roofing

AS 1567 Wrought Copper and Copper Alloy Rods, Bars and Section for General Engineering Purposes

AS 1588 Filler Rods for Welding

AS 1650 Galvanized Coatings

AS 1734 Wrought Aluminium and Aluminium Alloy Flat Sheet, Coiled Sheet and Plate for General Engineering Purposes

AS 1790 Electroplated Coatings of Cadimium on Iron and Steel

AS 1865 Wrought Aluminium and Aluminium Alloy Drawn Wire, Rod, Bar and Strip for General Engineering Purposes

AS 1866 Wrought Aluminium and Aluminium Alloy Extruded Rod, Bar, Solid and Hollow Shapes for General Engineering Purposes

AS 1874 Aluminium Ingots and Aluminium Alloy Ingots and Castings

AS 1890 Thermally-released Links

AS 1897 Electroplated Coatings on Threaded Components (Metric Coarse Series)

AS 2428 Methods of Testing Smoke/Heat Release Vents
- 2428.1 Determination of Resistance to Leakage During Rain
- 2428.2 Determination of Ability to Operate Under Wind Loading
- 2428.3 Determination of Operating Characteristics
- 2428.4 Determination of Effect of Flame Contact
- 2428.5 Determination of Coefficient of Discharge and Effective Aerodynamic Area
- 2428.6 Determination of Ability to Operate Under Snow Loading

AS 2665 Smoke/Heat Venting Systems—Design, Installation and Commissioning.

1.4 DEFINITIONS. For the purpose of this standard, the following definitions apply:

1.4.1 Automatic smoke/heat release vent—a vent which is fitted in a building and whose automatic opening, after the outbreak of fire, allows the escape of smoke and hot gases.

NOTE: The term 'vent' when used in this standard is synonymous with 'automatic smoke/heat release vent'.

1.4.2 Dual-purpose vent—a smoke/heat release vent which has provision to permit its use for comfort ventilation.

1.4.3 Vent area—the minimum net area of the airway in a vent.

1.4.4 Effective aerodynamic area—the area of an equivalent aerodynamically perfect orifice.

NOTE: Effective aerodynamic area is calculated as the vent area multiplied by the discharge coefficient.

1.4.5 Discharge coefficient—the ratio of effective aerodynamic area to the vent area.

1.4.6 Rain leakage wind velocity (v_r)—the maximum wind speed at which a vent resists the penetration of wind-driven rain.

1.4.7 Maximum wind velocity for operation (v_o)—the maximum wind speed at which a vent operates, i.e. opens and remains fully open, satisfactorily.

1.5 MARKING. Smoke/heat release vents shall be permanently, legibly and indelibly marked with the following information:

(a) Manufacturer's name, trade name, or trademark.

(b) Year of manufacture.