Australian Standard®

Fire dampers

Part 1: Specification

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The following interests are represented on Committee ME/62:

Association of Consulting Engineers Australia

Australian Assembly of Fire Authorities

Australian Construction Services

Australian Institute of Health Surveyors

Australian Institute of Refrigeration Airconditioning and Heating

Australian Uniform Building Regulations Coordinating Council

Building Management Authority, W.A.

Building Owners and Managers Association of Australia

Council of the Air Conditioning and Mechanical Contractors Associations of Australia

Department of Health, New South Wales

Fire Protection Industry Association of Australia

Insurance Council of Australia

Metal Trades Industry Association of Australia

Additional interests participating in preparation of Standard:

National Building Technology Centre

The Council of the City of Sydney

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PREFACE

This Standard was prepared by the Standards Australia Committee on Mechanical Ventilation and Air Conditioning to supersede AS 1682–1979, *Fire dampers*.

The Standard sets out requirements for design, manufacture, performance, testing and marking of fire dampers whose purpose is to protect ventilation openings in fire–resistant elements of construction. Installation of fire dampers is covered in AS 1682.2, *Fire dampers*, Part 2: *Installation*.

This edition incorporates the following changes from AS 1682—1979:

(a) Design and manufacturing requirements (Clause 3.2), which have been introduced to replace Clause 4.3(c) (commonly referred to as 'the 40 mm rule') of AS 1668.1–1979, *SAA Mechanical Ventilation and Airconditioning Code*, Part 1: *Fire precautions in buildings with air–handling systems*.

(b) More definitive requirements on marking.

(c) Requirements on the provision of installation instructions. These requirements are aimed at more clearly defining the responsibilities of the fire damper manufacturer as distinct from those of the installer.

(d) Updated requirements for materials.

(e) Specification of clearances.

As indicated in the Foreword to this Standard, the term 'fire damper' includes 'smoke damper'.

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FOREWORD

Although fire rarely starts in the ducts of ventilation and air-conditioning systems, the ductwork provides a ready means by which fire and products of combustion in any part of a building can spread throughout the building. To impede this spread of fire and products of combustion, fire dampers are installed in certain wall and ceiling penetrations which have been formed to permit the installation of air-handling systems. Thus, a fire damper is intended to restore partially the fire-resistance of a wall or ceiling through which a penetration has been made to permit passage of ventilation air.

A fire damper provides an effective barrier to the passage of fire and products of combustion; however, where its operation is initiated by the detection of smoke or other products of combustion, it may be termed a 'smoke damper'. The difference between a fire damper and a smoke damper lies only in the method of initiating the operation.

Fire dampers should be designed and constructed so that minimal resistance to airflow is created when they are open. The blade assembly needs to be of adequate strength to minimize flutter at air velocities up to the maximum recommended by the manufacturer, to obviate noise and metal fatigue problems.

As fire dampers are required to operate in an emergency, an important feature of their design is that their eventual operation is not affected by corrosion. Protection against corrosion is, therefore, provided for in this Standard.

STANDARDS AUSTRALIA

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for the materials, design, manufacture, performance, testing, and marking of fire dampers which may be of rectangular or circular face, of single or multiblade construction and have hinged, pivoted, or curtain type action.

NOTES:

1 The term 'fire damper' includes 'smoke damper' (see Foreword).

2 Requirements for the installation of fire dampers are specified in AS 1682.2.

3 Requirements for the maintenance of installed fire dampers are specified in AS 1851.6.

1.2 APPLICATION All fire dampers shall comply with Clause 1.5 and with the relevant requirements of the following Sections:

(a) Section 2—Materials.
(b) Section 3—Design and manufacture.
(c) Section 4—Performance.

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

1.3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1397 Steel sheet and strip—Hot-dipped zinc-coated or aluminium/zinc-coated
1444 Wrought alloy steels—Standard and hardenability (H) series
1449 Wrought alloy steels—Stainless and heat-resisting steel plate, sheet and strip
1530 Methods for fire tests on building materials, components and structures
1530.1 Method 1:Combustibility test for materials
1530.4 Method 4:Fire-resistance tests of elements of construction
1562 Design and installation of metal roofing
1566 Copper and copper alloys—Rolled flat products
1567 Copper and copper alloys—Wrought rods, bars and sections
1682 Fire dampers
1682.2 Part 2:Installation
1851 Maintenance of fire protection equipment
1851.6 Part 6: Management procedures for maintaining the fire precaution features of air-handling systems
1890 Thermally-released links

BS
1042 Measurement of fluid flow in closed conduits
Part 1: Pressure differential devices
Section 1.1: Specification for square-edged orifice plates, nozzles and venturi tubes inserted in circular cross-section conduits running full

1.4 DEFINITIONS For the purpose of this Standard, the definitions below apply.

1.4.1 Shall—indicates that a statement is mandatory.

1.4.2 Should—indicates a recommendation.

1.4.3 May—indicates the existence of an option.

1.4.4 Fire damper—a movable closure in a duct or opening for the passage of air, which operates automatically to restrict the passage of fire or products of combustion past it.

1.4.5 Smoke damper—a fire damper whose closing action is initiated by the detection of smoke.