AS 1682.1:2015

Australian STANDARD

Fire, smoke and air dampers

Part 1: Specification

STANDARDS Australia

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- Air Conditioning and Mechanical Contractors Association
- Australasian Fire and Emergency Service Authorities Council
- Australian Building Codes Board
- Australian Industry Group
- Australian Institute of Refrigeration, Air Conditioning and Heating
- Chartered Institution of Building Services Engineers
- Consumer Electronics Suppliers Association
- Department of Health and Human Services, Tas.
- Engineers Australia
- Facility Management Association of Australia
- NATSPEC
- The Insulation Contractors Association of Australia, NSW
- Victorian Building Authority

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Australian Standard®

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PREFACE

This Standard was prepared by the Standards Australia Committee ME-062, Ventilation and Airconditioning, to supersede AS 1682.1—1990, *Fire dampers*, Part 1: *Specification*.

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

This edition incorporates the following changes from AS 1682.1—1990:

(a) Added smoke dampers and air dampers.

(b) Performance criteria for fire dampers based upon high temperature leakage testing rather than by visual observation as required by AS 1530.4—1990.

(c) Performance requirements listed in tabular format with additional or optional requirements dictated by installation Standards or the conditions of the project—

  (i) FRL (insulation) required in certain cases by AS 1682.2 or AS/NZS 1668.1; or

  (ii) Ambient temperature leakage and/or maximum closure velocity if required by a particular project specification.

(d) Sponsor of tests shall provide installation details.

(e) Additional information re-labelling.

As indicated in the Foreword to this Standard, the terms ‘fire damper’ and ‘smoke damper’ apply to distinctly different devices.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard. Comments in tables are deemed to be informative.

This Standard includes a commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by ‘C’ preceding the clause number and is printed in italics in a box. The commentary is for information and guidance and does not form part of the Standard.

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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 penetrations in certain building elements which have been formed to permit the installation of air-handling systems. Thus, a fire damper is intended to restore partially the fire-resistance level (FRL) of a building element through which a penetration has been made to permit passage of ventilation air.

A fire and smoke damper provides an effective barrier to the passage of fire and products of combustion. A smoke damper provides an effective barrier to the passage of smoke only and must be initiated by the detection of smoke or other products of combustion. An air damper provides a means of automatically directing airflow for the purposes of smoke control.

Fire dampers and smoke 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.

This revision of AS 1682.1 requires testing to current edition of AS 1530.4 which includes a high temperature leakage test.

STANDARDS AUSTRALIA

Australian Standard
Fire, smoke and air dampers

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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, smoke and air dampers including mechanical dampers, intumescent dampers, ceiling dampers and actuated or motorized dampers.

NOTES:

1 Requirements for the installation of fire, smoke and air dampers are specified in AS 1682.2.

2 Requirements for the routine service of installed fire, smoke and air dampers are specified in AS 1851.

1.2 APPLICATION

Fire, smoke and air dampers shall comply with Clauses 1.7, 1.8 and the relevant requirements of the following Sections:

(a) Section 2—Design and manufacture.

(b) Section 3—Performance testing.

C1.2 *This Standard also contains requirements for air dampers (motorized air control dampers or volume control dampers) where they assist in a smoke control function as specified in AS 1668.1.*

Fire dampers that were tested to an earlier edition of AS 1682.1 may be installed in new or existing buildings. However, new installations of previously tested fire dampers shall be in accordance with the current edition of AS 1682.2.

1.3 OBJECTIVE

The objective of this Standard is to prescribe the requirements for the manufacture, documentation and testing of dampers that will protect openings for the passage of air through fire or smoke resistant elements whether used for general ventilation, air conditioning, smoke exhaust or other air movement systems.

1.4 NEW DESIGNS AND INNOVATIONS

Any alternative materials, design, methods of assembly, and procedures that do not comply with any specific requirements of this Standard, or are not mentioned in it, are not necessarily prohibited, provided that an independent testing authority confirms that they meet the performance requirements of this Standard.

C1.4 *This Clause is intended to address issues associated with the manufacture, installation and operation of fire dampers. It is not intended to support alternative solutions, as defined by the NCC, associated with the use of fire dampers.*