AS 4254—2002
(Incorporating Amendment Nos 1 and 2)

AS 4254—2002

Australian Standard™

Ductwork for air-handling systems in buildings

STANDARDS AUSTRALIA

This Australian Standard was prepared by Committee ME-062, Ventilation and Airconditioning. It was approved on behalf of the Council of Standards Australia on 1 March 2002.
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The following are represented on Committee ME-062:

Air-conditioning and Refrigeration Equipment Manufacturers Association of Australia
Australasian Fire Authorities Council
Australian Building Codes Board
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Institute of Building Surveyors
Australian Institute of Refrigeration Air-conditioning and Heating
Chartered Institution of Building Services Engineers
Department of Contract and Management Services, W.A.
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Ductwork for air-handling systems in buildings

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-062, Mechanical Ventilation and Airconditioning.

This Standard incorporates Amendment No. 1 (September 2002) and No. 2 (October 2004). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

In the preparation of this Standard, consideration was given to a number of publications and relevant Standards. This Standard follows a number of requirements set out in the Sheet Metal and Air Conditioning Contractors National Association's (SMACNA) HVAC Duct Construction Standards for metal and flexible ducts (2nd edition), but with the requirements adapted to the products of local Australian industries.

The objective of this Standard is to provide standardized requirements for the manufacture and installation of ducts and associated equipment for the use of designers, manufacturers and installers of air-handling systems for buildings.

The approach to using SMACNA as the basis for an Australian Standard was strongly influenced by—

(a) the extensive long-term background of SMACNA, which led this document to be regarded as well developed; and

(b) the use of SMACNA in Australia over a considerable period as the basis for duct construction.

Assistance gained from SMACNA is hereby acknowledged.

The main changes from the 1995 edition are summarized as follows:

(i) Amendments Nos 1 and 2 are incorporated.

(ii) Clause 1.8 has been changed from base metal thickness to total coated thickness.

(iii) Leakage testing has been clarified in Clause 2.2.5.

(iv) Tables 2.4(c) and 2.4(d) have been expanded to include 1000 Pa.

(v) Clause 2.7.2 on insulation for rigid ducts has been modified to provide for both internal and external insulation, to allow (a) and (b) tests to be combined and to require UL 181 tests are carried out on a 300 × 300 mm duct.

(vi) New requirements for subfloor flexible subducts are added in Clause 2.8.5(g).

(vii) New requirements for radius bends for flexible ducts are added in Clause 2.8.5(h).

(viii) Typical connection details for ceiling diffusers, grilles, registers and diffuser plenums are added as Figures 3.4, 3.5 and 3.6.

(ix) A pro forma flexible duct report summary has been included.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

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

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies the performance, materials, construction and installation of ductwork for air-handling systems in buildings.

1.2 NEW DESIGNS AND INNOVATIONS

Any alternative materials, designs, methods of assembly, and procedures that do not comply with specific requirements of this Standard, or are not mentioned in it, but give equivalent results to those specified, are not necessarily prohibited.

NOTE: For methods of assessing that alternative materials and construction methods comply with the requirements imposed by the functional criteria, see Appendix A.

1.3 APPLICATION

A1, A2

1.3.1 General

This Standard applies to ductwork for air-handling systems designed in accordance with the requirements of AS/NZS 1668.1 and AS 1668.2.

1.3.2 ‘Not applicable’

1.4 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
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	Part 1: Combustibility test for materials
1530.2	Part 2: Test for flammability of materials
1530.3	Part 3: Simultaneous determination of ignitability, flame propagation, heat release and smoke release
1530.4	Part 4: Fire-resistance tests of elements of building construction
1682	Fire dampers
1682.1	Part 1: Specification
1682.2	Part 2: Installation
2338	Preferred dimensions of wrought metal products
3679	Structural steel
3679.1	Part 1: Hot-rolled bars and sections
4508	Thermal resistance of insulation for ductwork used in building airconditioning

