

AS 1788.1—1987

Australian Standard[®]

Abrasive wheels

**Part 1: Design, construction, and
safeguarding**

This Australian standard was prepared by Committee SF/12, Abrasive Wheel Safety. It was approved on behalf of the Council of the Standards Association of Australia on 10 December 1986 and published on 2 February 1987.

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**Part 1: Design, construction, and
safeguarding**

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PREFACE

This standard was prepared by the Association's Committee on Abrasive Wheel Safety, to supersede (in part) AS 1788—1975, SAA Abrasive Wheels Safety Code.

This standard specifies safety requirements for the design and construction of abrasive wheels and the manufacture and installation of abrasive wheels and ancillary equipment. Particular requirements are given for the construction of guards for all equipment fitted with abrasive wheels and for the construction of flanges for use with abrasive wheels.

The selection, care, and use of abrasive wheels is dealt with in AS 1788.2, Abrasive Wheels, Part 2—Selection, Care, and Use.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

ABRASIVE WHEELS

PART 1—DESIGN, CONSTRUCTION, AND SAFEGUARDING

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard sets out requirements for the design and construction of abrasive wheels (excluding natural sandstones) and includes requirements for safety guards, flanges, chucks, and revolving cups. Requirements for the proper storage, handling, and identification of abrasive wheels are also included.

Application and operating requirements are included in AS 1788.2.

1.2 APPLICATION. The design, manufacture, and construction of abrasive wheels and ancillary equipment shall comply with the requirements of the following Sections of this standard:

[Section 2 Wheel shapes and speeds](#)

[Section 3 Materials](#)

[Section 4 Design and construction](#)

[Section 5 Specific requirements for construction of guards](#)

[Section 6 Specific requirements for construction of flanges](#)

[Section 7 Mounted wheels](#)

[Section 8 Handling and storage](#)

[Section 9 Marking of abrasive wheels](#)

1.3 RELATIONSHIP WITH REGULATIONS. The requirements of this standard do not take precedence over the regulations of a Regulatory Authority that may apply in any area.

1.4 NEW DESIGN AND INNOVATIONS. Any novel materials, designs, methods of assembly, procedures, etc which do not comply with a specific requirement of this standard, or are not mentioned in it, but which give equivalent results to those specified, are not necessarily prohibited. The SAA Committee on Abrasive Wheel Safety can act in an advisory capacity concerning equivalent suitability, but specific approval remains the prerogative of the Authority.

1.5 INTERPRETATIONS. Questions concerning the meaning, application, or effect of any part of this standard may be referred to the SAA Committee on Abrasive Wheel Safety for explanation. The authority of the committee is limited to matters of interpretation and will not adjudicate in disputes.

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

AS 1204 Structural Steels—Ordinary Weldable Grades

AS 1594 Hot-rolled Low Carbon Steel Plate, Sheet and Strip

AS 1668 SAA Mechanical Ventilation and Air-conditioning Code
Part 2—Ventilation Requirements

AS 1788.2 Abrasive Wheels, Part 2—Selection, Care, and Use

AS 1830 Iron Castings—Grey Cast Iron

AS 1831 Iron Castings—Spheroidal or Nodular Graphite Cast Iron

AS 1832 Iron Castings—Malleable Cast Iron

AS 1833 Iron Castings—Austenitic Cast Iron

AS 2074 Steel Castings

AS B172 Bonded Abrasive Products
Part I—Designation and Marking
Part IV—Shapes, Sizes and Identification of Mounted Wheels (Inch Series)

ISO 933 Bonded Abrasive Products—Grinding Wheel Dimensions (Part III)

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

1.7.1 Abrasive wheel—a revolving cutting tool consisting of abrasive grains held together by organic, inorganic, or vitrified bonding materials.

1.7.2 Accompanying documents—documents accompanying the equipment and containing all important information for the user, in particular that relevant to safety.

1.7.3 Blotters—compressible material generally used between an abrasive wheel and its flanges. The purpose of blotters is to distribute the clamping pressure of the flanges evenly on the wheel.

1.7.4 Bonded wheel.

1.7.4.1 Organic bonded wheel—a wheel which is bonded by means of an organic material (e.g. resinoid, rubber, shellac, or similar bonding agent).

1.7.4.2 Inorganic bonded wheel—a wheel which is bonded by means of inorganic material (e.g. sodium silicate, magnesium oxychloride, or metal).

1.7.4.3 Vitrified bonded wheel—a wheel which is bonded by means of vitrified material (e.g. clay, glass, porcelain or other related materials).

1.7.5 Chuck—a device to hold abrasive segments or certain types of wheels, and mounted on the machine spindle or machine face plate.