

Australian Standard™

Bonded abrasive products—General requirements



This Australian Standard was prepared by Committee ME-033, Abrasives. It was approved on behalf of the Council of Standards Australia on 20 January 2005. This Standard was published on 2 March 2005.

The following are represented on Committee ME-033:

Abrasives Institute of Australia
Australian Business
Australian Chamber of Commerce and Industry
Industrial Diamond Association
University of Melbourne
Victorian Employer's Chamber of Commerce

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Web Shop at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

Australian Standards™ and other products and services developed by Standards Australia are published and distributed under contract by SAI Global, which operates the Standards Web Shop.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to the Chief Executive, Standards Australia, GPO Box 5420, Sydney, NSW 2001.

This Standard was issued in draft form for comment as DR 04444.

Australian Standard™

Bonded abrasive products—General requirements

Originated as part of AS B172.1—1967 and AS B172.2—1968.
Previous edition AS/NZS 4523:1998.
Revised and designated as AS 4523—2005.

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia, GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 6492 4

PREFACE

This Standard was prepared by the Standards Australia Committee ME-033, Abrasives, to supersede, AS/NZS 4523:1998, *Bonded abrasive products—General—Designation, marking, range of outside diameters and tolerances*.

This Standard is identical with and has been reproduced from ISO 525:1999, *Bonded abrasive products—General requirements*.

The objective of this Standard is to provide manufacturers and users of bonded abrasive products with general requirements for these products.

The objective of this revision is to adopt the current edition of ISO 525.

As this Standard is reproduced from an international Standard, the following applies:

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source test, 'this International Standard' should read 'this Australian Standard'.
- (c) A full point substitutes for a comma when referring to a decimal marker.

References to international Standards should be replaced by equivalent Australian, New Zealand or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
ISO		AS/NZS	
603	Bonded abrasive products—Dimensions (series)	4524	Bonded abrasive products—Dimensions (series)
6103	Bonded abrasive products—Permissible unbalances of grinding wheels as delivered—Testing	4820	Bonded abrasive products—Permissible unbalances of grinding wheels as delivered—Testing
8486	Bonded abrasives—Determination and designation of grain size distribution	4518	Bonded abrasives—Determination and designation of grain size distribution
8486-1	Part 1: Macrogrits F4 to F220	4518.1	Part 1: Macrogrits F4 to F220
8486-2	Part 2: Microgrits F230 to F1200	4518.2	Part 2: Microgrits F230 to F1200
13942	Bonded abrasive products—Limit deviations and run-out tolerances	—	

CONTENTS

1 Scope	1
2 Normative references	1
3 Symbols	3
4 Types — Designation of shapes and dimensions.....	4
5 Requirements	14
6 Designation	18
7 Marking	19

NOTES

AUSTRALIAN STANDARD

Bonded abrasive products—General requirements

1 Scope

This International Standard covers bonded abrasive products in general (grinding wheels, segments, sticks and stones) excluding abrasive products with diamond or cubic boron nitride.

It gives:

- the designation;
- the main form and denomination of bonded abrasive products;
- the standard profile of straight wheels;
- the range of outside diameters;
- the range of thicknesses;
- the range of bore diameters;
- specifications;
- the marking.

This International Standard is general and is complemented by ISO 603-1 to ISO 603-16, ISO 6103 and ISO 13942.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 603-1, *Bonded abrasive products — Dimensions — Part 1: Grinding wheels for external cylindrical grinding between centres.*

ISO 603-2, *Bonded abrasive products — Dimensions — Part 2: Grinding wheels for centreless external cylindrical grinding.*

ISO 603-3, *Bonded abrasive products — Dimensions — Part 3: Grinding wheels for internal cylindrical grinding.*

ISO 603-4, *Bonded abrasive products — Dimensions — Part 4: Grinding wheels for surface grinding/peripheral grinding.*

ISO 603-5, *Bonded abrasive products — Dimensions — Part 5: Grinding wheels for surface grinding/face grinding.*

ISO 603-6, *Bonded abrasive products — Dimensions — Part 6: Grinding wheels for tool and tool room grinding.*

ISO 603-7, *Bonded abrasive products — Dimensions — Part 7: Grinding wheels for manually guided grinding.*

ISO 603-8, *Bonded abrasive products — Dimensions — Part 8: Grinding wheels for deburring and fettling/snagging.*

ISO 603-9, *Bonded abrasive products — Dimensions — Part 9: Grinding wheels for high-pressure grinding.*

ISO 603-10, *Bonded abrasive products — Dimensions — Part 10: Stones for honing and superfinishings.*

ISO 603-11, *Bonded abrasive products — Dimensions — Part 11: Hand finishing sticks.*

ISO 603-12, *Bonded abrasive products — Dimensions — Part 12: Grinding wheels for deburring and fettling on straight grinder.*

ISO 603-13, *Bonded abrasive products — Dimensions — Part 13: Grinding wheels for deburring and fettling on a vertical grinder.*

ISO 603-14, *Bonded abrasive products — Dimensions — Part 14: Grinding wheels for deburring and fettling/snagging on an angle grinder.*

ISO 603-15, *Bonded abrasive products — Dimensions — Part 15: Grinding wheels for cutting-off on stationary and mobile cutting-off machines.*

ISO 603-16, *Bonded abrasive products — Dimensions — Part 16: Grinding wheels for cutting-off on hand held power tools.*

ISO 6103, *Bonded abrasive products — Permissible unbalances of grinding wheels as delivered — Testing.*

ISO 8486-1, *Bonded abrasives — Determination and designation of grain size distribution — Part 1: Macrogrits F4 to F220.*

ISO 8486-2, *Bonded abrasives — Determination and designation of grain size distribution — Part 2: Microgrits F230 to F1200.*

ISO 13942, *Bonded abrasive products — Limit deviations and run-out tolerances.*

3 Symbols

See Table 1.

Table 1 — Symbols and their meaning

Symbol	Meaning
<i>A</i>	Smallest width of a trapezoidal segment
<i>B</i>	Width of a segment, stick or stone
<i>C</i>	Thickness of a segment, stick or stone
<i>D</i>	Outside diameter of abrasive products
<i>E</i>	Thickness at bore of cup, dish, recessed and relieved wheels
<i>F</i>	Depth of the 1st recess
<i>G</i>	Depth of the 2nd recess
<i>H</i>	Abrasive product bore diameter, thread diameter of wheels with threaded insert
<i>J</i>	Smallest diameter of tapered cup, dish, tapered and hubbed wheels
<i>K</i>	Internal diameter of recess of tapered cup and dish wheels
<i>L</i>	Length of segments, length of thread bore of wheels with threaded insert, sticks and stones
<i>L</i> ₀	Overhang length of mounted wheels and points
<i>L</i> ₁	Total length of mounted wheels and points
<i>L</i> ₂	Length of the spindle of mounted wheels and points
<i>L</i> ₃	Clamping length of the spindle of mounted wheels and points
<i>N</i>	Depth of the relief
<i>P</i>	Recessed diameter
<i>R</i>	Radius of recessed grinding wheels, grinding segments, cones and plugs and mounted wheels and points
<i>S</i>	Diameter of spindle of mounted wheels and points
<i>T</i>	Overall thickness
<i>U</i>	Smallest thickness of tapered, hubbed and depressed centre wheels, e.g. in Type 4 or Type 38
<i>W</i>	Rim width of cups, cylinders and dishes
<i>V</i>	profile angle ^a
<i>X</i>	other profile element ^a
↓	Symbolizes the grinding face of bonded abrasive products.
^a For wheel profiles, see 5.1.	