
**Bonded abrasive products — General
requirements**

Produits abrasifs agglomérés — Exigences générales

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ISO 525:2013

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 5, *Grinding wheels and abrasives*.

This fourth edition cancels and replaces the third edition (ISO 525:1999).

Significant changes against the previous edition are as follows:

- a) clarification has been included in the Scope to explicitly exclude coated abrasive products;
- b) a note has been included in [Clause 4](#) on the relationship with the ISO 603 series and the dimensional requirements given there;
- c) in [Clause 4](#), [Table 2](#), the description of some existing types of bonded abrasives products has been changed and type numbers 17, 17R, 19R, 29 and 40 have been included;
- d) all specific requirements on dimensions (outside diameter, thickness and bore diameter) have been removed from [Clause 5](#) and reference is now made to the ISO 603 series;
- e) in [Clause 5](#), requirements for maximum operating speeds have been deleted;
- f) [Clause 6](#) on designation has been reworded and included in [Clause 5](#);
- g) additional marking requirements have been included.

Bonded abrasive products — General requirements

1 Scope

This International Standard is applicable to bonded abrasive products (e.g. grinding wheels, segments, sticks and stones) in general, excluding superabrasive products and coated abrasive products.

This International Standard specifies:

- a) the ISO type number and shape;
- b) dimensional symbols;
- c) standard profiles;
- d) requirements for dimensions, limit deviations and tolerances as well as permissible unbalance;
- e) the specification mark;
- f) the marking requirements.

NOTE This International Standard is general and is complemented by the ISO 603 series, ISO 6103 and ISO 13942.

2 Normative references (standards.iteh.ai)

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6103, *Bonded abrasive products — Permissible unbalances of grinding wheels as delivered — Static 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 F2000*

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 first recess
<i>G</i>	Depth of the second recess
<i>H</i>	Abrasive product bore diameter, thread diameter of wheels, plugs and cones 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> ₂	Length of the spindle of spindle mounted wheels and points
<i>N</i>	Depth of the relief
<i>P</i>	Recessed diameter
<i>R</i>	Radius of recessed grinding wheels, cones and plugs, spindle mounted wheels and points, and outer radius segments
<i>R</i> ₁	Inside radius of segments
<i>S</i> _d	Diameter of spindle of spindle 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>V</i>	profile angle ^a
<i>W</i>	Rim width of cups, cylinders and dishes
➔	Symbolizes the grinding face of bonded abrasive products.
^a For wheel profiles, see 4.2.	

4 Types — Designation of shapes and symbols

4.1 Designation of basic shapes and dimensions

The designation of shapes and dimensions shall be in accordance with [Table 2](#).

Table 2 — Designation of shapes and dimensions

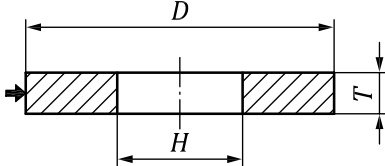
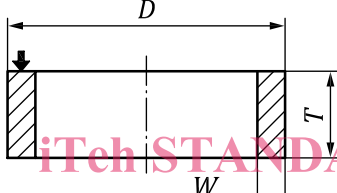
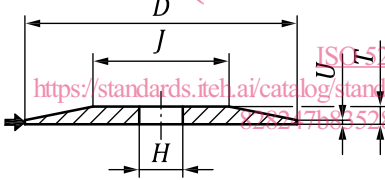
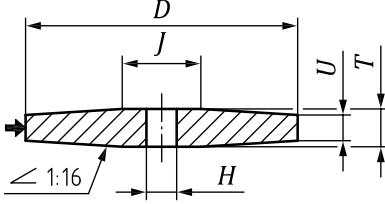
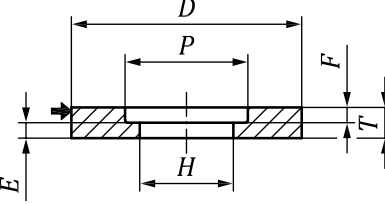
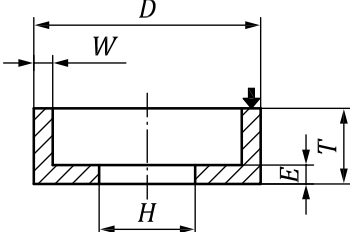
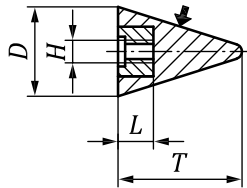
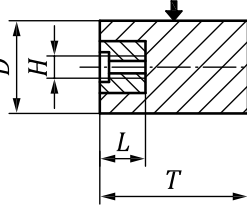
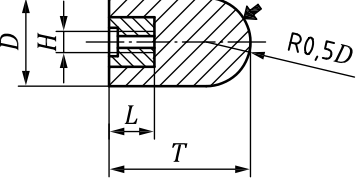
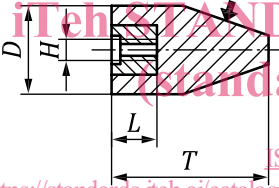
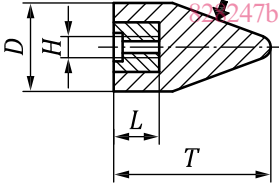
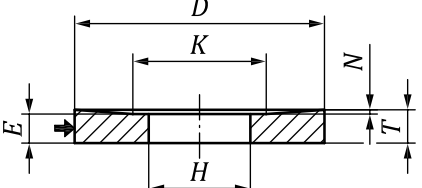
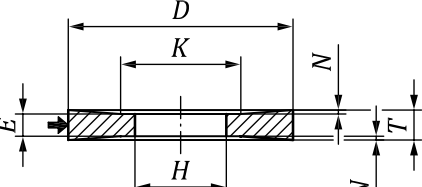
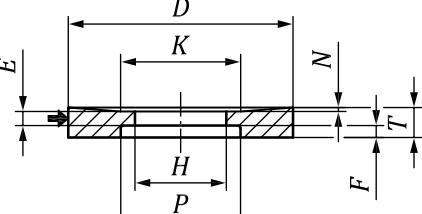
Type number	Illustration	Designation of shapes and dimensions	International Standard reference number	
			NOTE Information on dimensions can be found in the International Standards listed in this column. It is not compulsory to follow the dimensions given there in order to fulfil the requirements of this International Standard.	
1		Straight grinding wheel Type 1 profile ^a $D \times T \times H$	ISO 603-1 603-2 603-3 603-4 603-6	ISO 603-7 603-8 603-9 603-12 603-18
2		Cylinder wheel, cemented or clamped Type 2 $D \times T \times W$	ISO 603-5	
3		Wheel tapered on one side Type 3 $D/J \times T \times H$	ISO 603-6	
4		Wheel tapered on both sides Type 4 $D \times T \times H$	ISO 603-12	
5		Wheel, recessed on one side Type 5 profile ^a $D \times T \times H - P \times F$	ISO 603-1 603-2 603-3	ISO 603-4 603-6 603-7
6		Straight cup wheel Type 6 $D \times T \times H - W \times E$	ISO 603-5 603-6 603-7	ISO 603-13 603-14 603-18

Table 2 (continued)

Type number	Illustration	Designation of shapes and dimensions	International Standard reference number
7		Wheel recessed on both sides Type 7 profile ^a $D \times T \times H - P \times F/G$	ISO 603-1 ISO 603-2 ISO 603-4 ISO 603-6
9		Double cup wheel Type 9 $D \times T \times H - W \times E$	-
11		Taper cup wheel Type 11 $D/J \times T \times H - W \times E$	ISO 603-6 ISO 603-14
12		Dish wheel Type 12 $D/J \times T \times H$	ISO 603-6
13		Saucer Type 13 $D/J \times T/U \times H - K$	-
16		Tapered cone, curved sides Type 16 $D \times T - H \times L$	ISO 603-12
17		Tapered cone, straight sides, square tip Type 17 $D \times T - H \times L$	ISO 603-12

Table 2 (continued)

Type number	Illustration	Designation of shapes and dimensions	International Standard reference number
17R		Tapered cone, straight sides, rounded tip Type 17R $D \times T - H \times L$	ISO 603-12
18		Cylindrical plug, flat tip Type 18 $D \times T - H \times L$	ISO 603-12
18R		Cylindrical plug, round tip Type 18R $D \times T - H \times L$	ISO 603-12
19		Plug, conical end, square tip Type 19 $D \times T - H \times L$	ISO 603-12
19R		Plug, conical end, rounded tip Type 19R $D \times T - H \times L$	ISO 603-12
20		Wheel relieved on one side Type 20 $D/K \times T/N \times H$	ISO 603-1 ISO 603-4
21		Wheel relieved on both sides Type 21 $D/K \times T/N \times H$	ISO 603-1 ISO 603-4
22		Wheel relieved on one side, recessed on the other side Type 22 $D/K \times T/N \times H - P \times F$	ISO 603-1 ISO 603-4