

ICS 25.100.70

CCS J43



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 2494-2014

Replacing GB 2494-2003

Bonded abrasive products-Safety requirements

固结磨具 安全要求

Issued on: March 27, 2014

Implemented on: January 1, 2015

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;
Standardization Administration of China**

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Foreword

The standard Chapter 7 and

6.3.3 are recommended, the rest are mandatory. This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB 2494-2003 "ordinary abrasive safety rules," compared with GB 2494-2003 The main technical changes are as follows:

- Modify the normative references (see Chapter 2, Chapter 2, 2003 edition);
- Increased terms and definitions (see Chapter 3);

- Adds symbols and abbreviations (see Chapter 4);
- Adds significant risk list (see Chapter 5);
- Modify the maximum operating speed of grinding tools (see 6.1 and 64, 2003, edition Chapter 3.);
- Increasing the general requirements (see 6.2);
- Rotary abrasive increased strength requirements (see 6.3.1);
- Increased Petiole grinding safety factor (see 6.3.2);
- Increased lateral load requirements (see 6.3.3);
- Increasing the abrasive permitted unbalance requirements (see 6.5);
- Increasing the abrasive marking requirements (see 6.6);

1 Scope

GB 2494-2014 is the Chinese national standard on bonded abrasive products-safety requirements, in the field of manufacturing engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 27 March 2014 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 January 2015. Classification: ICS 25.100.70, CCS J43. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the safety requirements for abrasive terms and definitions, symbols and abbreviations, a list of major hazards, safety technical requirements, test methods, inspection rules, inspection and storage, installation and use. This standard applies to abrasive.

1.73 Handheld devices grinding and cutting wheels ≤ 100 3.0 1.73

6.3.2 Petiole grinding of the safety factor Petiole grinding the maximum operating speed should be having S_{br} = safety factor of

3.0 in order to prevent breakage caused by the centrifugal force. Petiole grinding Shank should have safety factor S_{ab} =

1.3 to prevent deflection, see Appendix A.

6.3.3 Lateral load capacity Handheld fiber reinforced cymbals grinding wheels (type 27, type 28), a fiber-reinforced flat shaped cutting wheels (type 41) and fiber-reinforced cymbals Cut Wheel (Type 42), the lateral load capacity should meet the requirements of Table 5. Table

5 Lateral load Abrasives Maximum operating speed vs m/s The outer diameter D mm
Lateral load Lateral load test three single point load test side impact test A single point of lateral load FS

1 Three lateral load FS3 A force of impact N · m Type 27 and Type 28 ≤ 80 $115 \leq D < 150$
290 - - $150 \leq D < 180$ 290 - 4.5 $180 \leq D < 230$ 290 -

2 Normative references

The following documents for the application of this document is essential. For cited documents with dates, only the dated edition applies to this document. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 2484 General requirements for bonded abrasive

GB/T 2485 abrasive technical conditions

GB/T 2492 ordinary abrasive grinding wheel allows the delivery of unbalance measurement
Rotation test GB/T 2493 wheel

GB 4674 grinding machine safety regulations

GB/T 16458 Abrasives term

GB/T 17588 Basic terms grinding wheel

JB/T 4175 fiber-reinforced resin bonded abrasive cutting wheel

JB/T 7992 ordinary abrasive appearance, dimensions and geometric tolerances Test
Method

JB/T 10450 ordinary abrasive inspection rules

3 Terms and Definitions

GB/T 16458 and GB/T 17588 and defined by the following terms and definitions apply to this document.

3.1 Grinding Equipment

3.1.1 Stationary equipment stationary machines It is fixed at a certain position of the machine during operation, including the use of swing is firmly fixed machine and mobile machine.

3.1.2 Mobile devices mobile machines Operation is not fixed, in the course of manipulation by hand, but not handheld machines.

3.1.3 Handheld device hand-held machines Grinding jobs held in the hands of the grinding machine.

3.1.4 Fully enclosed equipment machines with totally enclosed working area Fixture with so personnel from rupture caused by abrasive hazards shield, processing (including loading and unloading of the workpiece) are Inside the machine conducted.

3.2 Grinding method

3.2.1 Cutting cutting-off With a cutting wheel cutting or notching the outer periphery.

3.2.2 Heavy Duty Grinding high pressure grinding The contact pressure is greater than 1500N under grinding conditions.

3.3 Application Type Table 1. Table

1 Application Type Grinding Equipment Type Application Type abrasive workpiece
Stationary equipment operated by mechanical grinding Fixed mechanically operated
Mechanically operated fixed Mechanically operated mechanically operated Fixed and
mobile devices Manually operated grinding Manually operated fixed Manually operated
fixed Handheld devices handheld grinding Manually operated fixed

3.3.1 Mechanically operated grinding mechanically guided grinding Abrasive and/or workpiece feed movement manipulated by mechanical means.

3.3.2 Manually operated grinding manually guided grinding Abrasive and/or workpiece feed motion manipulated manually by the operator.

3.3.3 Handheld grinding hand-held grinding Entire grinding machine operated by an operator hand.

4 Symbols and Abbreviations

GB/T 2484 and symbols given in Table 2 and abbreviations apply to this document. Table 2 speed, line speed and safety factor symbol Abbreviated name defined unit nab grinding deflection speed centrifugal force grinding spindle deflection speed r/min nmax maximum speed abrasive work at the highest speed in revolutions per minute r/min vs maximum operating speed of abrasive maximum allowable line speed m/s TABLE 2 (cont.) Abbreviated name defined unit vpr safety testing by the manufacturer of the test speed line speed m/s Fpr safety factor ratio test speed test speed and maximum safe operating speed of. fpr = vpr/vs - fbr rupture velocity coefficient minimum burst speed and maximum operating speed ratio. fbr = vbrmin/vs - vbr rupture velocity abrasive broken line speed at the time of rotating centrifugal force m/s vbrmin minimum burst speed of abrasive should be