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

GB/T 21952-2023

Replacing GB/T 21952-2008

Polycrystalline diamond inserts, tipped - Dimensions, types

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8.731 (see Table 1, Table 1 of the.2008 edition);

3.088 (see Table 5,.2008 version of Table 5);

3.088 (see Table 5), the value is wrong;

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document replaces GB/T 21952-2008 "Dimensions of polycrystalline diamond blades". Compared with GB/T 21952-2008, except for the structure

In addition to adjustments and editorial changes, the main technical changes are as follows.

- a) Change the blade shape "hexagon" to "convex triangle" (see 4.1, 3.1 of the.2008 version);
- b) Change "normal relief angle" to "normal relief angle" and delete the normal relief angle 25° (F) (see 4.2, 3.2 of the.2008 version);
- c) Delete the tool tip arc radius 2.0mm, 2.5mm, and 3.0mm (see 3.3 of the.2008 edition);
- d) The ϵ value of code TC.W110208F is changed from 0.3 to 0.8, and the m value of code TP.W110208F is changed from 9.322 to

8.731 (see Table 1, Table 1 of the.2008 edition);

- e) The l value of codes SP.N090302F, SP.N090304F, SP.N090308F is changed from 9.5 to

9.525 (see Table 4,

Table 4 of the 2008 edition);

f) The m1 value of code CP.W09T302F was changed from 2.426 to 2.534, and the m2 value was changed from 1.333 to 1.392; code name CP.

The m1 value of W120404F was changed from 3.088 to 3.308, and the m1 value of code CP.W120408F was changed from 3.308 to

3.088 (see Table 5, 2008 version of Table 5);

g) The code name SE.W1204EDR is changed to SP.W1204EDR, and the code name SE.W1204EDL is changed to SP.W1204EDL (see

Table 8, 2008 version of Table 8).

This document has been modified to adopt ISO 16463:2014 "Dimensions and Types of Inlaid Polycrystalline Diamond Blades".

A "Terms and Definitions" chapter has been added to this document.

The technical differences between this document and ISO 16463:2014 and their reasons are as follows.

---The normal relief angle is increased by 15° (D) (see 4.2), which is covered in Tables 8 and 9;

---The tool tip arc radius is increased by 0.1mm (see 4.3), which is covered in Table 10;

---Replaced ISO 1832 (see 4.4~4.6, 5.1) with the normatively quoted GB/T 2076 to adapt to my country's technical conditions;

---The material code DP05 is changed to DP (see 5.2 and 5.3) to facilitate the use of this document;

---Replaced ISO 513 (see 5.2, 5.3, Chapter 8 and Chapter 10) with the normatively quoted GB/T 2075 to adapt to my country's technology

technical conditions;

---Change the notes in 6.1~6.10 to requirement clauses to facilitate the use of this document;

---The m value of code TP.W110208F was changed from 9.322 to 8.731 (see Table 1), and the value is wrong;

---The l value of the codes SP.N090302F, SP.N090304F and SP.N090308F was changed from 9.5 to 9.525 (see Table 4).

The value is wrong;

---The m1 value of code CP.W09T302F is changed from 2.426 to 2.534, the m2 value is changed from 1.333 to 1.392, code CP.

The m1 value of W120404F was changed from 3.088 to 3.308, and the m1 value of code CP.W120408F was changed from 3.308 to

3.088 (see Table 5), the value is wrong;

---Replaced ISO 6987 and ISO 3365 (see Chapter 9) with normative references GB/T 2080 and GB/T 2081 respectively, to

Adapt to my country's technical conditions.

The following editorial changes have been made to this document.

---In order to coordinate with the existing standards, the name of the standard is changed to "Types and Dimensions of Inlaid Polycrystalline Diamond Blades";

---For ease of use, ISO 883 and ISO 6987 are replaced with the informative GB/T 2079 and GB/T 2080 (see Section 1

Chapter), replacing ISO 1832 with the informative reference GB/T 2076 (see 5.2 and 5.3);

---For ease of use, change the symbols "alpha and alpha'n" in Table A.1 to "alpha'n", and refer to the corresponding references in this document to "Figure 6, Figure 7, Table 6,

Table 7" is changed to "Figure 8, Figure 9, Table 8, Table 9";

---Added references.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the requirements for blades whose cutting parts are inlaid with polycrystalline diamond (DP) whose blade shape complies with GB/T 2079 and GB/T 2080.

Types and sizes.

This document applies to the manufacture of polycrystalline diamond inserts.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 2075 Classification and usage of hard cutting materials for cutting processing
Classification codes of large groups and usage groups (GB/T 2075-

2007,ISO 513.2004,IDT)

GB/T 2076 Rules for model representation of indexable inserts for cutting tools (GB/T
2076-2021, ISO 1832.2017, MOD)

GB/T 2080 Dimensions of indexable carbide inserts with rounded corners and countersunk
holes (GB/T 2080-2007, ISO 6987.1998,
IDT)

GB/T 2081 Dimensions of carbide indexable milling inserts with wiper edges and no fixed
holes (GB/T 2081-2018, ISO 3365.
2016,IDT)

3 Terms and definitions

There are no terms or definitions to be defined in this document.

4.1 Blade shape

The shapes of the blades are. triangle (T), square (S), rhombus 80° (C), rhombus 55° (D),
rhombus 35° (V), and convex triangle (W).

4.2 Normal relief angle alphan

The normal relief angles alphan are. 5° (B), 7° (C), 11° (P), 15° (D) and 20° (E).

4.3 Cutting edge tip

Turning inserts. with tip radius repilon. 0.1mm, 0.2mm, 0.4mm, 0.8mm, 1.2mm and
1.6mm.

Milling insert. with wiper edge.

Note. The tool tip structure that does not participate in cutting is optional.

4.4 Tolerance classes

The tolerance level should be in accordance with GB/T 2076.In Tables 1 to 10, the
tolerance grade codes are represented by black dots (.).