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**Cermet casings of watches - Part 2: Carbide cermet casings
(English Translation)**

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Table of Contents

Foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and Definitions	6
4 Requirements	6
References and Original Chinese Documents	15

1 Scope

This Part specifies technical requirements, testing methods, rules for inspection, packing, marking, transport and storage of carbide cermet watchcases and watch-bands of watches (known as casings for short hereafter).

This Standard applies to watch-cases and watch-bands made by carbide cermet material with tungsten (WC) and titanium (TiC) as main composition. Watch-cases and watch-bands made by carbide cermet material with other composition can also refer to this Part.

2 Normative references

The following documents are necessary for the application of this Document. For dated reference, only dated edition applies to this Document. For undated references, the latest edition (including all amendments) applies.

GB/T 2828.1 Sampling procedures for inspection by attributes-Part1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection (GB/T 2828.1-2003, ISO 2859-1: 1991, IDT) GB/T 2829 Sampling procedures and tables for periodic inspection by attributes (Apply to inspection of process stability) GB/T 3489 Hard metals - Metallographic determination of porosity and uncombined carbon (GB/T 3489-1983, ISO 4505: 1978, EQV) GB/T 4028 Timekeeping instruments - Symbolization of control positions (GB/T 4028-1994, ISO 3158: 1976, IDT) GB/T 6569 Test method for flexural strength of monolithic ceramics (GB/T 6569-2006, ISO 14704: 2000, MOD) GB/T 7997 Hard metals - Vickers hardness test (GB/T 7997-1987, ISO 3878: 1983, EQV) GB/T 10700 Test methods for elastic moduli of fine ceramics - Bending method GB/T 19719 Jewelry - Determination of the release of nickel - Method of spectrometry (GB/T 19719-2005, EN 1811: 1998, MOD) GB/T 1898 Shock-resistant watches (QB/T 1898 -1993, ISO 1413: 1984, IDT) GB/T 1901.2-2006 Watch-cases and accessories - Gold alloy coverings - Part 2:

Determination of fineness thickness corrosion resistance and adhesion (QB/T 1901.2-2006, ISO 3160-2: 2003, MOD)

3 Terms and Definitions

The following terms and definitions applied to this Document.

Carbide cermet

The cermet with carbide as main composition.

Tungsten carbide cermet the cermet with tungsten carbide as main composition, the chemical formula is WC.

Titanium carbide cermet the cermet with titanium carbide as main composition, the chemical formula is TiC.

4.1 Impact resistance

After impact test and external force resistance test, the casings shall have no phenomenon of falling off and function-damaged; the surface of which shall have no cracks; the watch-cases and watch bands shall not have dents of which - diameter is bigger than 0.2mm at the frond-side, and diameter is bigger than 1mm at sides and back-side.

4.2 Corrosion resistance

After the corrosion test by specified time of Table 1, the casings shall have no difference in color between before-test and after-test; the front and side parts of casings shall have no pitting, pits and mottled traces of corrosion; and the back-side shall have no pitting and pits.

4.3 Porosity

Bending strength σ_f and modulus of elasticity E_b shall comply with the provisions of Table 3. The test of bending strength and modulus of elasticity shall be carried on the test samples; test samples shall use the same carbide cermet material of the casings; and the size of the test samples of bending strength shall meet the provisions of GB/T 6569; the size of the test samples of modulus of elasticity shall meet the provisions of GB/T 10700.

Table 3 Bending strength and modulus of elasticity

5.1 Test Environment

Ambient temperature of the test is between 18 °C and 25 °C; and relative humidity is less than 70%.

5.2.1.1 Sample Status

Test sample shall be a completed watch [Translation: production-watch or commercial watch] or simulated watch [Translation: prototype watch]. When testing, test clasp shall be closed so as to make the watch to be the close-circular shape and use a sponge or other soft objects to support it.

5.2.1.2 Impact

Test shall be carried out according to the test method specified by QB/T 1898; the impact position shall be at 9H-side and the side which parallels to the disk surface of the watch. The impact rate shall be 3.7m/s.

5.2.1.3 Resistance to External Performance

FASTERN clasp; APPLY the static tension F to the watch as shown in Figure 1 according to requirements in Table 4. REMAIN 1 minute when the tension reaches a predetermined value. CHECK the sample according to the predetermined methods in A) When the product is discontinued more than one production cycle and is resumed production.

B) When new product is launched for production or old product transfers production.

C) When the product design, structure, processes, materials have significant changes or when the product transfers production.

D) When National Quality Supervision and Inspection agency calls for the type inspection.

6.3 Inspection of Nickel release

Nickel release shall be tested according to the predetermined methods in GB/T9719.

7.1.1 Marking Requirements

If the exterior parts meet the requirements of Chapter 4, marking shall be conducted on a suitable location of the product or on the product certification, or on the product's instructions for use.

7.1.2 Marking Methods

Marking shall be composed of the code, the type of material and exterior parts of cermet material as follows:

X2 -- Cermet casing (Indicated by the first letter in English) X1 -- Cermet type (Represented by the chemical formula of the major component) C -- Cermet material code in which:

C: Cermet material code, cermet type of exterior parts shall be represented by C.

X1: Type of Cermet material shall be represented by the chemical formula of the major component. Commonly used chemical formula of metal carbide cermet materials are shown in 3.2, 3.3.

X2: Type of cermet casing, in which - "front circle" is represented by a "B" (bezel), "Watch Case (with front ring-structure containing pre-laps)" is represented by C (case), "Bracelet" is represented by L (link), and "strap" is represented by W (wristlet).

Example 1: The case and bracelet made of tungsten carbide cermet material is labeled as C-WC-CW.

Example 2: the strap section of the titanium carbide ceramic material is labeled as C-TiC-L.

7.2 Packaging

7.2.1

Casing shall be put into the packaging box with soft separated compartment to ensure that there is no collision and extrusion damage.

7.2.2

The packaging box shall have the moisture resistance and impact resistance, and the exterior packaging box shall have the sign of "Handle with Care".

7.3 Transportation and Storage

7.3.1 Casing, during transport and storage process, shall avoid extrusion, impact and vibration.

7.3.2 The storage environment shall be kept dry and ventilated to avoid objects which can produce corrosive gases.