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

GB/T 28300-2025

**Surface quality classes for hot-rolled bars and wire rod
(English Translation)**

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1 Scope

This document specifies the ordering, marking, requirements, testing, finishing of surface quality class for hot-rolled bars and wire rods.

This document applies to the surface quality class of hot-rolled bars and wire rods (hereinafter referred to as steel), which have nominal dimensions of 5 mm ~ 200 mm.

Hot-rolled bars and wire rods of other nominal dimensions shall make reference to this document.

This document applies to steel for engineering and structural applications; products for other applications shall refer to this document.

When product standards for hot-rolled bars and wire rods have requirements for surface quality, the product standards shall apply.

2 Normative references

The following documents, through normative references herein, constitute essential provisions of this document. For dated references, only the edition cited applies; for undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 239.1 Wire rods of metallic materials - Part 1. Test method for unidirectional torsion (GB/T 239.1-2023, ISO 7800.2012, IDT)

GB/T 239.2 Wire rods of metallic materials - Part 2. Test methods for bidirectional torsion (GB/T 239.2-2023, ISO 9649.2016, MOD)

YB/T 5293 Test methods for upsetting metal materials

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Delivery lot

A surface discontinuity (3.10) with a depth or height exceeding the specified limit.

3.13

Portion (z)

The maximum acceptable weight percentage of defective material in a delivery lot (3.1).

4.1 Ordering

If not explicitly specified in the product standard, the following shall be specified when ordering.

- a) Surface quality class (see Table 1), which is class A if not specified;
- b) Portion (z) (default value see Table 1, other requirements negotiable);
- c) Inspection and testing methods, determined by the supplier if not specified.

Note: See Appendix D for guidelines on surface quality class application.

4.2 Marking

Surface quality requirements shall be marked according to Table 1.

Example 1.

The supplier and buyer agree on a surface quality class of B and a portion (z) of 1% (default value), surface quality GB/T 28300-B.

Example 2.

The supplier and buyer agree that the surface quality class is C and the portion (z) for the delivery lot is 0.5%, surface quality GB/T 28300-C-z0.5.

5 Requirements

5.1

The surface quality class of the steel shall conform to the provisions of Table 1 and Figure 1, as specified in 4.1 and 4.2, or as agreed upon by the supplier and buyer.

5.2

The handling of defective materials shall be negotiated at the time of ordering, such as return to the manufacturer or scrapping. The handling of defective materials in delivery lot that have all passed acceptance shall also be negotiated at the time of ordering.

Figure 1 -- Surface quality class of steel

6.1 General

6.1.1

Based on the steel surface quality requirements, the manufacturer shall, according to its own responsibility and judgment, take appropriate measures to supervise its production.

Note: The manufacturer typically checks the surface quality requirements of the coiled ends after rolling.

6.1.2

The purchaser has the right to choose an appropriate method to inspect the surface quality of the delivered materials.

6.2.1.1 The measurement methods used to detect surface discontinuities and the depth

or height of surface discontinuities shall be sufficiently accurate; the measurement results shall be reproducible.

6.2.1.2 Non-destructive testing methods (see 6.2.2 and 6.2.3.1) and process testing

methods (see 6.2.2) may be used.

Note: Considering that continuous inspection equipment for wire rods is not easy to meet the accuracy requirements for measuring the depth or height of defects, it is usually only possible to inspect the ends of the coil. Therefore, it cannot be proven that there is no depth or height greater than the specified value throughout the entire coil.

6.2.2 Testing methods for surface discontinuities

The following methods or other suitable methods are applicable to the testing of surface discontinuities.

a) Non-destructive testing methods.

- Visual inspection;
- Magnetic flux methods, e.g., magnetic particle testing or magnetic probe testing;

- Inductive method (eddy current);
- Dye penetration test.
- b) Process testing methods.
 - Hot upsetting test (according to YB/T 5293);
 - Cold upsetting test (according to YB/T 5293);
 - Torsion test (according to GB/T 239.1, GB/T 239.2).

6.2.3 Measurement methods for surface discontinuity depth or height

6.2.3.1

Non-destructive testing methods.

- Magnetic flux measurement method, using a rotating or fixed probe;
- Inductive method;

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