

ICS 77.140.60

CCS H44



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

GB/T 33967-2017

**Hot-rolled wire rod for wire drawing without intermediate heat
treatment**

免铅浴淬火钢丝用热轧盘条

Issued on: July 12, 2017

Implemented on: April 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

Foreword...	3
1 Scope...	4
2 Normative References...	4
3 Terms and Definitions...	6
4 Grade Expression Method...	7
5 Order Content...	7
6 Size, Shape, Weight and Allowable Deviation...	8
7 Technical Requirements...	8
8 Test Method...	12
9 Inspection Rules...	12
10 Rounding off for Values...	13
13 Appendix A (Informative) Grade Comparison of Wire Rod...	14

Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009. This Standard was proposed by China Iron and Steel Industry Association. This Standard shall be under the jurisdiction of National Technical Committee for Standardization of Steel (SAC/TC 183). Drafting organizations of this Standard. Angang Steel Company Limited, Jiangsu Shagang Group Co., Ltd., Jiangsu Yonggang Group International Trading Co., Ltd., and China Metallurgical Information and Standardization Institute. Chief drafting staffs of this Standard. Di Liping, Pu Zhimin, Ren Yuhui, Ren Cuiying, Wang Lingjun, Zhang Xiaobing, Zhang Ge, Che An, Gu Jie, Li Xiaobo, and Gao Hang. Wire Rods for Conversion to Wire without Intermediate Heat Treatment

1 Scope

China's national standard for hot-rolled wire rod that can be drawn to wire without being annealed part-way through. It specifies the terms and definitions, the method of expressing grades, the order content, the dimensions, shape, weight and permitted deviations, the technical requirements, the test methods, the inspection rules and the packaging, marking and quality certificate. Drawing hardens steel, and the traditional way to get from rod to fine wire is to draw, anneal to restore ductility, and draw again, several times over. Every annealing cycle costs a furnace, energy, floor space, handling and time. Rod that reaches final size in one drawing sequence removes all of that, and the saving is large enough to

reorganise a wire mill around. What makes it possible is the rod: a fine and uniform pearlitic structure produced by controlled cooling on the rolling line, free of the surface defects and central segregation that would otherwise force a break. That is what this standard specifies, and it is a steelmaking and rolling requirement rather than a compositional one.

This Standard specifies the terms and definitions, grade expression method, ordering content, dimension, shape, weight and allowable deviation, technical requirements, test methods, inspection rules, package, marking and quality certificate of wire rods for conversion to wire without intermediate heat treatment. This Standard is applicable to the hot-rolled wire rod for wire-making without intermediate heat treatment or final heat treatment during the wire-making process; namely, wire rods for conversion to wire without intermediate heat treatment (hereinafter referred to as wire rod).

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 222 Method of Sampling Steel for Determination of Chemical Composition and Permissible Variation for Product Analysis

GB/T 223.5 Methods for Chemical Analysis of Iron, Steel and Alloy - the Reduced Molybdosilicate Spectrophotometric Method for the Determination of Acid-Soluble Silicon Content

GB/T 223.12 Methods for Chemical Analysis of Iron, Steel and Alloy - The Sodium Carbonate Separation-Diphenyl Carbazide Photometric Method for the Determination of Chromium Content

GB/T 223.19 Methods for Chemical Analysis of Iron, Steel and Alloy - The Neocuproine-Chloroform Extraction Photometric Method for the Determination of Copper Content

GB/T 223.23 Methods for Chemical Analysis of Iron, Steel and Alloy - The Dimethylglyoxime Spectrophotometric Method for the Determination of Nickel Content

GB/T 223.26 Iron, Steel and Alloy - Determination of Molybdenum Content - The Thiocyanate Spectrophotometric Method

GB/T 223.37 Methods for Chemical Analysis of Iron, Steel and Alloy - the Indophenol Blue Photometric Method for the Determination of Nitrogen Content after Distillation Separation

GB/T 223.59 Iron, Steel and Alloy - Determination of Phosphorus Content - Bismuth Phosphomolybdate Blue Spectrophotometric Method and Antimony Phosphomolybdate

Blue Spectrophotometric Method

GB/T 223.62 Methods for Chemical Analysis of Iron, Steel and Alloy - The Butyl Acetate Extraction Photometric Method for the Determination of Phosphorus Content

GB/T 223.63 Methods for Chemical Analysis of Iron, Steel and Alloy - The Sodium (Potassium) Periodate Photometric Method for the Determination of Manganese Content

GB/T 223.67 Iron, Steel and Alloy - Determination of Sulfur Content - Methylene Blue Spectrophotometric Method

GB/T 223.69 Iron, Steel and Alloy - Determination of Carbon Contents - Gas- volumetric Method after Combustion in the Pipe Furnace

GB/T 223.72 Iron, Steel and Alloy - Determination of Sulfur Content - Gravimetric Method

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 Easy drawing cooling. EDC It is one easy drawing cooling process. After the wire rod spinning, it quickly enters into the water medium for cooling, and finish the organizational transition. Compared with the ordinary air-cooled process, the wire rod cooling in water medium is featured by high uniformity and fast cooling speed; it is conducive to increase the sorbite rate and expand the refine sheet spacing, and improve the processing performance of the wire rod.

3.2 Wire rods for conversion to wire without intermediate heat treatment For the wire rod produced by adopting the EDC process, the organizational performance of wire rod can reach or be close to the level of lead bath; so the steel wire can be directly pulled-out, which eliminates the intermediate and final lead bath, salt bath, and the like heat treatment process.

3.3 Total reduction of area

9.3 Sampling quantity The sampling quantity for each item inspection of wire rod shall conform to the provisions of Table 5.

9.4 Re-inspection and judgment The re-inspection and judgment of wire rod shall conform to the provisions of GB/T 17505.

10 Rounding off for Values

The rounding off for values of each item inspection results of wire rod shall conform to the provisions of GB/T 8170.