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

GB/T 14994-2008

Replacing GB/T 14994-1994

Superalloy cold drawn bars

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1 Scope

GB/T 14994-2008 is the Chinese national standard on superalloy cold drawn bars, in the field of metallurgy. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 13 May 2008 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 November 2008. Classification: ICS 77.140, CCS H57. 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 dimensions, shapes and allowable deviations, technical requirements, test methods, inspection rules, packaging, marks and quality certificate for superalloy cold drawn bars. This Standard is applicable to superalloy cold drawn bars. It can be used to manufacture industrial fasteners and other parts.

2 Normative references

The provisions in following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard, however, parties who reach an agreement based on this Standard are encouraged to study if the latest versions of these documents are applicable. For undated references, the latest edition of the referenced document applies.

GB/T 223.3, Methods for chemical analysis of iron, steel and alloy. The diantipyryl methane phosphomolybdate gravimetric method for the determination of phosphorus content

GB/T 223.4, Methods for chemical analysis of iron, steel and alloy - The volumetric method for determination of manganese content by ammonium nitrate oxidation

GB/T 223.8, Methods for chemical analysis of iron, steel and alloy - The sodium fluoride separation - EDTA volumetric method for the determination of aluminium content

GB/T 223.9, Methods for chemical analysis of iron, steel and alloy - The chrome azurol S photometric method for the determination of aluminium content

GB/T 223.10, Methods for chemical analysis of iron, steel and alloy - The cupferron separation-chrome azurol S photometric method for the determination of aluminium content

GB/T 223.11, Methods for chemical analysis of iron, steel and alloy - ammonium sulfate oxidation volumetric method for the determination of

GB/T 223.30, Methods for chemical analysis of iron, steel and alloy - The arsenazo III spectrophotometric method for the determination of zirconium content after separation by p-bromomandelic acid

GB/T 223.31, Methods for chemical analysis of iron, steel and alloy - The distillation-molybdenum blue spectrophotometric method for the determination of arsenic content

GB/T 223.33, Methods for chemical analysis of iron, steel and alloy. The chlorophosphonazo mA photometric method for the determination of cerium content after extraction separation

GB/T 223.36, Methods for chemical analysis of iron, steel and alloy. The neutral titration method for the determination of nitrogen content after distillation separation

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 223.38, Methods for chemical analysis of iron, steel and alloy. The distillation-molybdenum blue spectrophotometric method for the determination of arsenic content

GB/T 223.40, Methods for chemical analysis of iron, steel and alloy - The anion-exchange separation-sulphochlorophenol S photometric method for the determination of niobium content

3 Order content

The contract or order for ordering according to this Standard shall include the following:

a) Reference to this Standard;

- b) Alloy designation;
- c) Smelting method;
- d) Weight (or quantity);
- f) Delivery state and group;
- g) Size tolerance level;
- h) Fixed-ruler length and double length (specify when required);
- i) Other requirements.

4 Size, shape and allowable deviation

4.1 For round bars with a nominal diameter of 8mm~45mm and square bars with a nominal side length of 8mm~30mm, the allowable deviation of the size shall comply with the requirements for level h11 or h12 in GB/T 905-1994, which shall be indicated in the contract.

4.2 For hexagonal bars with an inscribed circle with a nominal diameter of 8mm~36mm, the allowable deviation of the size shall comply with the requirements for level h12 in GB/T 905-1994.

4.3 The length of the bar shall generally be greater than 2000mm. The number of bars with a length of 1000mm~2000mm in each batch is allowed not to exceed 20% of the total number. If the length is shorter than 1000mm, but not shorter than 500mm, there shall be no more than 5 pieces per batch.

4.4 When the order size exceeds the range, the allowable deviation is negotiated by the supplier and the purchaser.

4.5 The bar shape shall meet the requirements of GB/T 905-1994.

5.2.1 GH1040, GH2036, GH2132, GH3030, GH4033 and GH4169 alloy bars are delivered in solution treatment, solution treatment + pickling, solution treatment + polished or cold drawn state.

5.2.2 GH4080A and GH4090 alloy bars are delivered in cold drawn + polished or solid solution deoxidized state. The cold drawing deformation of the bar after the final intermediate annealing shall be 80%~12%.

5.2.3 GH2696 bars are delivered in one of the following groups: Group I: the bars are treated with 1100°C, 0.5h~2h, oil-cooled or water-cooled solution treatment, alkaline pickled and cold drawn. The recommended deformation is 15%~25%; Group II: the bars are treated with 1100°C, 0.5h~2h, oil-cooled or water-cooled solution treatment, alkaline pickled and cold drawn. The recommended deformation is 35%~45%; Group III: general cold drawn state; Group IV: cold drawn + solid solution state.

5.2.4 The delivery state and group of bars shall be indicated in the order contract. The supplier shall indicate the delivery state and group in the quality guarantee.

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