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GB/T 20887.1-2017

Replacing GB/T 20887.1-2007

**Continuously Hot Rolled High Strength
Steel Sheet and Strip for Automobile –**

Part 1: High Yield Strength Steel for Cold Forming

汽车用高强度热连轧钢板及钢带 第1部分：冷成形用高屈服强度钢

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Foreword

GB/T 20887 *Continuously Hot Rolled High Strength Steel Sheet and Strip for Automobile* can be divided into 7 parts:

- Part 1: High Yield Strength Steel for Cold Forming;
- Part 2: High Hole Expansion Steel;
- Part 3: Dual Phase Steel;
- Part 4: Transformation Induced Plasticity Steel;
- Part 5: Martensitic Steel;
- Part 6: Complex Phase Steel;
- Part 7: Steels for Hydraulic Forming.

This Part belongs to Part 1 of GB/T 20887.

This Part was drafted as per the rules specified in GB/T 1.1-2009.

This Part Replaced GB/T 20887.1-2007 *Continuously Hot Rolled High Strength Steel Sheet and Strip for Automobile – Part 1: High Yield Strength Steel for Cold Forming*. Compared with GB/T 20887.1-2007, this Part has the major technical changes as follows:

- Increase two grades of HR900F, HR960F; and their corresponding technical requirements (see Table 1, Table 2 of this Edition);
- Delete the provisions of residual elements (see 6.1.1 of Edition 2007);
- Modify batch weight from 40t to 60t (see 8.2 of this Edition; 7.5 of Edition 2007);
- Add the provisions of inspection document type (see Clause 9 of this Edition);
- Add the informative Appendix B (see Appendix B of this Edition).

This Part was proposed by China Iron and Steel Industry Association.

This Part shall be under the jurisdiction of National Technical Committee for Standardization of Steel (SAC/TC 183).

Drafting organizations of this Part: Baoshan Iron & Steel Co., Ltd., Shougang Corporation, Bengang Group Co., Ltd., China Metallurgical Information and Standardization Institute, and Angang Steel Company Limited.

Continuously Hot Rolled High Strength Steel Sheet and Strip for Automobile – Part 1: High Yield Strength Steel for Cold Forming

1 Scope

This Part of GB/T 20887 specifies the classification and grade expression method, ordering contents, dimension, appearance, weight, technical requirements, test methods, inspection rules, package, mark and quality certificate of hot rolled high yield strength steel sheet and strip for cold forming.

This Part is applicable to continuously hot rolled high yield strength steel strip for cold forming, and transversely-cut steel sheet and longitudinally-cut steel strip (hereinafter referred to as “steel sheet and strip”) made by the above steel strip.

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 Permissible Tolerances for Chemical Composition of Steel Products

GB/T 223.5 Steel and Iron - Determination of Acid-Soluble Silicon and Total Silicon Content - Reduced Molybdosilicate Spectrophotometric Method

GB/T 223.9 Iron Steel and Alloy - Determination of Aluminum Content - Chrom Azurol S Photometric Method

GB/T 223.17 Methods for Chemical Analysis of Iron Steel and Alloy - The Diantipyrylmethane Photometric Method for the Determination of Titanium Content

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

GB/T 223.40 Iron, Steel and Alloy - Determination of Niobium Content by the Sulphochlorophenol S Spectrophotometric Method

GB/T 223.58 Methods for Chemical Analysis of Iron, Steel and Alloy - The Extraction-Absorption Catalytic Polarographic Method for the Determination of Manganese Content

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

GB/T 223.76 Methods for Chemical Analysis of Iron, Steel and Alloy - The Flame Atomic Absorption Spectrometric Method for the Determination of Vanadium Content

GB/T 223.78 Methods for Chemical Analysis of Iron, Steel and Alloy - Curcumin Spectrophotometric Method for the Determination of Boron Content

GB/T 223.86 Steel and Iron—Determination of Total Carbon Content—Infrared Absorption Method after Combustion in an Induction Furnace

GB/T 228.1-2010 Metallic Materials - Tensile Testing - Part 1: Method of Test at Room Temperature

GB/T 229 Metallic Materials - Charpy Notch Impact Test

GB/T 232 Metallic Materials – Bend Test

GB/T 247 General Rule of Package Mark and Certification for Steel Plates (Sheets) and Strips

GB/T 709 Dimensions, Shape, Weight and Tolerances for Hot Rolled Steel Sheets and Strips

GB/T 2975 Steel and Steel Products - Location and Preparation of Test Pieces for Mechanical Testing

GB/T 4336 Carbon and Low-Alloy Steel – Determination of Multi-Element Contents -Spark Discharge Atomic Emission Spectrometric Method (Routine Method)

GB/T 6394 Metal – Methods for Estimating the Average Grain Size

GB/T 8170 Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values

GB/T 10561 Steel - Determination of Content of Nonmetallic Inclusions -

4 Ordering Contents

4.1 The contract or purchasing list ordering products as per this Part shall include the following contents:

- a) Product name (steel sheet or strip);
- b) This Part number;
- c) Grade;
- d) Specification and dimension, roughness accuracy;
- e) Surface state (when it is pickled surface, expressed by Code "P");
- f) Surface quality level;
- g) Edge state;
- h) Packaging mode;
- i) Weight;
- j) Other special requirements.

4.2 If the ordering contact doesn't specify the surface state, thickness accuracy, etc.; then the products shall be supplied as per hot rolled surface, ordinary thickness accuracy. When it is the hot rolled pickled surface, if the surface quality level and oil use have not been specified, the products shall be delivered as per the oiled relative-high surface (FB).

5 Dimension, Appearance, Weight

The dimension, appearance, weight and permissible tolerance of steel sheet and strip shall conform to the provisions of GB/T 709.

6 Technical Requirements

6.1 Grade and chemical compositions

6.1.1 The grade and chemical compositions (smelting analysis) of steel shall conform to the provisions of Table 1. Approximate comparison between domestic and foreign standard grades can refer to Appendix A.

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