

Translated English of Chinese Standard: GB/T711-2017

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# GB

NATIONAL STANDARD OF THE  
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ICS 77.140.50

H 46

## GB/T 711-2017

Replacing GB/T 711-2008, GB/T 710-2008

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### Hot-Rolled Quality Carbon Structural Steel Plates Sheets and Strips

Issued on: February 28, 2017

Implemented on: November 01, 2017

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Issued by: General Administration of Quality Supervision, Inspection and  
Quarantine;

Standardization Administration of PRC.

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## Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative References.....	4
3 Ordering Contents.....	6
4 Dimension, Appearance, Weight.....	6
5 Technical Requirements.....	6
6 Test Methods.....	12
7 Inspection Rules.....	13
8 Package, Marking and Quality Certificate.....	14

## Foreword

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

This Standard combined and modified the following standards like GB/T 710-2008 *Hot-Rolled Quality Carbon Structural Steel Sheets and Strips*, GB/T 711-2008 *Hot-rolled Quality Carbon Structural Steel Plates, Sheets and Wide Strips*.

This Standard replaced GB/T 710-2008 *Hot-Rolled Quality Carbon Structural Steel Sheets and Strips*, GB/T 711-2008 *Hot-rolled Quality Carbon Structural Steel Plates, Sheets and Wide Strips*; compared with GB/T 710-2008 and GB/T 711-2008, this Standard has the major technical changes as follows:

- Cancel the relevant brand of boiling steel;
- Cancel the pull-edge level;
- Increase three brands of 35Mn, 55Mn, 70Mn (see Table 1, Table 2, Table 3);
- Tighten the control harmful elemental sulfur in steel (see Table 1);
- Adjust the delivery status of some brands (see Table 2).

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: Chongqing Iron & Steel Company Limited, Angang Steel Company Limited, China Metallurgical Information and Standardization Institute, Shougang Co., Ltd., Xinyu Iron & Steel Co., Ltd., and Hebei Iron and Steel Co., Ltd. Tangshan Branch.

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The historical editions replaced by this Standard are as follows:

- GB/T 710-1998, GB/T 710-1991, GB/T 710-2008;
- GB/T 711-1985, GB/T 711-1988, GB/T 711-2008.

# Hot-Rolled Quality Carbon Structural Steel Plates Sheets and Strips

## 1 Scope

This Standard specifies the dimension, appearance, weight, technical requirements, test methods, inspection rules, package, marking and quality certificate of the hot-rolled quality carbon structural steel plates sheets and strips.

This Standard is only applicable to the hot-rolled quality carbon structural steel plates sheets and strips with thickness no greater than 100mm, width no less than 600mm (hereinafter referred to as steel sheets and strips).

## 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 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 223.37 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 223.64 Iron, Steel and Alloy - Determination of Manganese Content - Flame Atomic Absorption Spectrometric Method

GB/T 223.68 Methods for Chemical Analysis of Iron Steel and Alloy - The Combustion Potassium Iodate Volumetric Method for the Determination of Sulfur Content

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

GB/T 224 Determination of Depth of Decarburization of Steels

GB/T 228.1 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 2970 Thicker Steel Plate - Method for Ultrasonic Inspection

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 13298 Inspection Methods of Microstructure for Metals

GB/T 13299 Steel – Determination of Microstructure

half thickness tolerance of steel plate and strip; the allowable minimum thickness of steel plate and strip must be guaranteed.

**5.10.3** The local defects on the surface of the steel plate and strip are allowed to be cleaned; while the clean-up area shall be smooth and edge-free; the allowable minimum thickness of steel plate and strip must be guaranteed.

**5.10.4** During the continuous production of steel strips, local surface defects are not easily found and removed; so, delivery with defects is allowed; however, the defective part shall not exceed 6% total length of each roll of steel strip.

**5.10.5** Steel plate with thickness greater than 30mm is allowed for flame trimming; however, the steel plate requires the heat treatment shall take flame trimming before heat treatment.

**5.10.6** The surface quality characteristics of each level of steel strip and shear steel plates shall conform to the provisions of Table 6.

**Table 6 -- Surface Quality Characteristics of Each Level of Steel Plate and Strip**

Levels and codes	Applicable surface treatment modes	Characteristics
Ordinary surface (FA)	Rolled surface Pickled surface	The surface is allowed to have pits, concaves, scratches, and other slight and local defects of which the thickness (or height) shall not exceed half thickness tolerance of the steel strip; however, the allowable minimum thickness of steel plate and strip must be guaranteed; the following local defects are also allowed to have such as serrated edges, partially uncut edges, lack of pickling, parking spots, etc.
Higher surface (FB)	Pickled surface	The surface is not allowed to have the local defects that may influence the formability, such as slight scratches, slight indentations, slight pits, slight roll marks, chromatic aberration, etc.; the surface is allowed to have slight parking spots after oiling; however, the surface is not allowed to have the lack of or over pickling defects.

## 6 Test Methods

**6.1** The analysis method for chemical compositions of steel shall be performed as per the provisions of GB/T 223.5, GB/T 223.12, GB/T 223.19, GB/T 223.23, GB/T 223.37, GB/T 223.59, GB/T 223.64, GB/T 223.68, GB/T 223.86, GB/T 4336, GB/T 20123, GB/T 20125, and general method; however, the arbitration shall be performed as per the provisions of GB/T 223.5, GB/T 223.12, GB/T 223.19, GB/T 223.23, GB/T 223.37, GB/T 223.59, GB/T 223.64, GB/T 223.68, GB/T 223.86.