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

GB/T 11253-2019

Replacing GB/T 11253-2007

Cold-rolled sheet and strip of carbon structural steels

碳素结构钢冷轧钢板及钢带

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard replaces GB/T 11253-2007, Cold-rolled sheets and strips of carbon structural steels and GB/T 716-1991, Cold-rolled carbon structural steel strips. This Standard combines GB/T 11253-2007, Cold-rolled sheets and strips of carbon structural steels and GB/T 716-1991, Cold-rolled carbon structural steel strips. Compared with GB/T 11253-2007 and GB/T 716-1991, the major technical changes of this Standard are as follows: -- Modify the thickness range of steel plates and strips and the width range of cold-rolled narrow steel plates and strips (see Chapter 1, Chapter 1 of GB/T 11253-2007); -- Modify the surface structure classification and code (see 3.2,

3.2 of GB/T 11253-2007); -- Modify the order content, and add the surface structure type and oiling regulations (see Chapter 4, Chapter 4 of GB/T 11253-2007); -- Modify the size, shape, weight and tolerance of cold-rolled narrow steel plates and steel strips (see Table 1, Table 1 of GB/T 716-1991); -- Add designation-Q325 and corresponding chemical composition, mechanical property and process property (see Table 2, Table 3, Table 4); -- Modify the technical requirements for cold-rolled narrow steel plates and steel strips (see Table 3, Table 3 of GB/T 716-1991); -- Add surface structure requirements (see Table 6); -- Add requirements of rounding off of numerical values (see 8.4); -- Delete the quality

certificate type regulations for steel plates and strips (see Chapter 9 of GB/T 11253-2007). This Standard was proposed by China Iron and Steel Industry Association. This Standard shall be under the jurisdiction of National Technical Committee 183 on Iron and Steel of Standardization Administration of China (SAC/TC 183). The drafting organizations of this Standard. Angang Steel Company Limited, China Metallurgical Information and Standardization Institute, Shougang Group Co., Ltd., Hunan Valin Lianyuan Iron and Steel Co., Ltd., Guangxi Liuzhou Iron and Steel Group Company Limited. The drafters of this Standard. Su Haolu, Huang Qiuju, Li Qian, Hou Jie, Tang Mu, Tian Fei, Jiang Cailing, Qi Bing, Guan Jichun, Zhang Weixu, Wang Haiquan, Yang Yuebiao, Wang Yue, Xin Lifeng. The previous versions of the standards which are replaced by this Standard are. -- GB/T 11253-1989, GB/T 11253-2007; -- GB/T716-1983, GB/T716-1991. Cold-rolled sheet and strip of carbon structural steels

1 Scope

China's national standard for cold-rolled sheet and strip of carbon structural steel - the ordinary flat steel from which brackets, enclosures, panels, furniture, appliance bodies and thousands of pressed and formed parts are made. It is not a glamorous material and it is one of the most widely used products in the national catalogue; a great deal of manufacturing sits on it. It specifies the content of the order, the dimensions, shape and weight, the technical requirements, the test methods, the inspection rules, and the packaging, marking and quality certificate for cold-rolled sheet and strip of carbon structural steels. What separates cold-rolled from hot-rolled material, and what the purchaser is paying for, is the surface and the dimensional accuracy: the strip is rolled cold to close tolerances with a clean, bright surface that can be painted, plated or left visible, where hot-rolled material carries scale and a much wider thickness tolerance. The requirements therefore give as much attention to the surface quality classes and the flatness and thickness tolerances as to the mechanical properties. The steel grades and their chemical composition and mechanical properties - the yield and tensile strength and the elongation - come next, and with them the property that decides whether the material is usable at all in a press: the formability. A sheet that meets its strength figures and cracks when drawn is of no use to the customer, so the grades are distinguished by forming ability rather than by strength alone. The clause on the content of the order is the practical one: thickness, width, grade, surface class, edge condition, coil weight and inner diameter all have to be stated, and an order that omits any of them cannot be filled. Issued on 17 October 2019 and in force since 1 September 2020, it replaces GB/T 11253-2007.

This Standard specifies the order content, size, shape, weight, technical requirements, test methods, inspection rules, packaging, marking and quality certificates of cold-rolled sheet and strip of carbon structural steels. This Standard applies to cold-rolled sheet and strip of carbon structural steels with a thickness of not more than 4 mm, including cold-rolled wide strip and shear steel strip, slit steel strip (referred to as wide steel plate and steel strip) with

a width of not less than 600 mm AND cold-rolled narrow steel strip and shear steel plate (referred to as narrow steel plate and steel strip) with a width range of 250mm ~ < 600mm. A single cold-rolled steel sheet of which the width is not less than 600 mm can also refer to it to perform.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 222, Permissible tolerances for chemical composition of steel products

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

GB/T 223.9, Iron, steel and alloy. Determination of aluminium content. Chrome azurol S photometric method

GB/T 223.11, Iron, steel and alloy. Determination of chromium content. Visual titration or potentiometric titration method

GB/T 223.18, Methods for chemical analysis of iron steel and alloy. The sodium thiosulfate separation iodimetric method for the determination of copper content

3 Classification and code

3.1 Steel plates and strips are divided according to surface quality.

3.2 Steel plates and strips are divided according to their surface structure.

4 Order content

4.1 The contract or order in accordance with this Standard shall include the following information.

4.2 If the size and unevenness accuracy, surface quality level, surface structure type, edge state and packaging method are not indicated in the order contract, the standard products are supplied to pitted-surface oil-coated cutting-edge plates or strips according to ordinary grade and unevenness accuracy, higher level surface quality and surface structure, and packaged according to the packaging that is provided by the supplier.

5 Size, shape, weight

5.1 The size, shape, weight and allowable deviation of wide steel plates and steel strips shall comply with the provisions of GB/T 708.

5.2 The size, shape, weight and allowable deviation of narrow steel plates and steel strips shall comply with the provisions of GB/T 15391, of which, the allowable deviation of width shall comply with the requirements of Table 1.

6.1 Designation and chemical composition

6.1.1 The steel designation and chemical composition (melting analysis) shall comply with the requirements of Table 2.

6.1.2 When aluminum is used to deoxidize, the content of acid-soluble aluminum (Als) in the steel shall not be less than 0.015%, or the total aluminum (Alt) content shall not be less than 0.020%.

6.1.3 The residual elements, such as chromium, nickel and copper contents, in the steel, which can be guaranteed by the supplier, can be free from analysis.

6.1.4 The nitrogen content in the steel, which is guaranteed by the supplier, can be free from analysis.

6.1.5 Under the condition that the mechanical properties of steel comply with the requirements of this Standard, the carbon, manganese and silicon contents Designation

6.1.6 The allowable deviation of chemical composition of the finished steel product shall comply with the provisions of GB/T 222.

6.2 Smelting method Steels are smelted by oxygen converter or electric furnace. Unless the buyer has special requirements and it is specified in the contract, the smelting method is generally determined by the supplier.

6.4 Mechanical property

6.4.1 The horizontal tensile test of steel plates and strips that are delivered in a flat state after annealing shall comply with the requirements of Table

3.If the horizontal sample cannot be taken on the narrow steel plate and steel strip due to the width, the vertical sample is taken for tensile test; the mechanical property qualification value is determined by the supplier and the buyer.

6.5 Surface quality

6.5.1 The surface of steel plates and steel strips shall be free of defects such as air bubbles, cracks, crusting, folding and inclusions that are harmful to the use. Steel plates and strips shall not be visually layered.

6.6 Surface structure

6.6.1 The surface structure of the steel strips is divided into three types. The characteristics