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Steel Plates and Sheets for Truck Carriage

载重汽车车厢厢体用钢板和钢带

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard was proposed by China Iron and Steel Association.

This Standard shall be under the jurisdiction of the National Standardization Technical Committee on Steels (SAC/TC 183).

The drafting organizations of this Standard: Wuhan Iron and Steel Co., Ltd., China Metallurgical Information and Standardization Institute, Xinyu Iron and Steel Co. Ltd., Shougang Group, Angang Steel Co., Ltd., HBIS Co., Ltd. Tangshan Branch.

The main drafters of this Standard: Tao Wenzhe, Liang Wen, Zhang Weixu, Yang Honglai, Wu Zhaohui, Guan Jichun, Deng Cuiqing, Liu Meihong, Yu Jianlin, Pan Hui, Liu Zhiyong, Chen Jiqing, Chen Xiaohong, Huang Dawei.

Steel Plates and Sheets for Truck Carriage

1 Application Scope

This Standard specifies the designation, ordering content, dimensions, shape, weight, technical requirements, test methods, inspection rules and packaging, marking and quality certification of steel plates and sheets for truck carriage.

This Standard applies to hot-rolled steel plates (including hot continuous rolling shear steel plates) and sheets (including longitudinal cutting steel sheets) of thickness 1.2 mm ~ 12.0 mm for the cold forming and wear-resistant parts of truck carriage.

2 Normative References

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

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 223.12, *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 223.14, *Methods for Chemical Analysis of Iron, Steel and Alloy – the N-enzo-N-phenylhydroxylamine Extraction Photometric Method for the Determination of Vanadium Content*

GB/T 223.16, *Methods for Chemical Analysis of Iron, Steel and Alloy – the Chromotropic Acid Photometric Method for the Determination of Titanium 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, *Iron, Steel and Alloy – Determination of Nickel Content – The Dimethylglyoxime Spectrophotometric Method*

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

GB/T 223.31, *Iron Steel and Alloy – Determination of Arsenic Content – Distillation-Molybdenum Blue 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 223.40, *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 Sodium Arsenite-Sodium Nitrite Titrimetric 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 223.68, *Methods for Chemical Analysis of Iron, Steel and Alloy – the Potassium Iodate Titration Method after Combustion in the Pipe Furnace for the Determination of Sulfur Content*

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

GB/T 223.75, *Iron Steel and Alloy – Determination of Boron Content – Methanol Distillation-Curcumin Photometric Method*

GB/T 228.1, *Metallic Materials – Tensile Testing – Part 1: Method of Test at Room Temperature*

GB/T 229, *Metallic Materials – Charpy Pendulum Impact Test Method*

GB/T 231.1, *Metallic Materials – Brinell Hardness Test – Part 1: Test Method*

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 8170, *Rules of Rounding off for Numerical Values and Expression and*

Table 6 – Mechanical Properties and Processing Properties of Steel Plates and Sheets for Wear-resistant Parts

Designation	Yield strength R_{eL} ^a /MPa	Tensile strength R_m /MPa	Percentage elongation after fracture $A_{50\text{ mm}}$ /%	90° bend test ^b	Surface Brinell hardness HBW
NM250XT	≥650	750~1 000	≥16	$D=2.5a$	240~300
NM300XT	≥800	1 000~1 250	≥14	$D=3.0a$	270~330
NM360XT	≥900	1 100~1 400	≥12	$D=3.5a$	330~390
NM400XT	≥1 000	1 200~1 500	≥10	$D=4.0a$	370~430

^a If the yield is not obvious, $R_{p0.2}$ may be measured instead of R_{eL} .
^b D is the diameter of bending pressure head; a is the thickness of sample; the width of bending sample $b = 35\text{ mm}$.

6.4.2 The Charpy (V-notch) impact absorbed energy is calculated as the arithmetic mean value of three samples; it is allowed that a single value of one of the three samples is lower than that specified in Table 5, but not lower than 70% of the value specified.

6.4.3 For Charpy (V-notch) impact test of steel plates and sheets of thickness less than 12 mm, samples of small dimensions shall be used. The dimensions of the samples of steel plates and sheets of $8\text{ mm} < \text{thickness} < 12\text{ mm}$ are $10\text{ mm} \times 7.5\text{ mm} \times 55\text{ mm}$, and the test result shall not be less than 75% of the value specified in Table 5; the dimensions of the samples of steel plates and sheets of thickness $6\text{ mm} \sim 8\text{ mm}$ are $10\text{ mm} \times 5\text{ mm} \times 55\text{ mm}$, and the test result shall not be less than 50% of the value specified in Table 5; impact test is omitted for steel plates and sheets of thickness less than 6 mm.

6.5 Surface quality

6.5.1 The surface of steel plates and sheets shall be free from the defects adverse to use, including bubbles, scars, cracks, inclusions and folds. In case of any defect above mentioned, it is allowed to be removed; the depth of removal shall not be greater than half of the tolerance for the thickness of steel. The removing spots shall be smooth without angle and ensure the minimum allowable thickness of steel plates.

6.5.2 The surface of steel plates and sheets is allowed to have thin oxidized scale, rust and slight pits, scratches and other local defects; the convex-concave degree shall not be greater than half of the tolerance for the thickness of steel plates and sheets and ensure the minimum allowable thickness of steel plates and sheets.

6.5.3 There is no chance to cut off the parts with defects for steel sheets, and therefore, it is allowed to deliver steel sheets with several abnormal parts, but the parts with defects shall not be greater than 6% of the total length of each roll.

6.6 Special requirements

Other special requirements for steel plates and sheets can be made as required by the purchaser, which shall be agreed on by the supplier and the purchaser, and stated in the contract.

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