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

GB/T 1231-2024

Replacing GB/T 1228-2006

**High strength bolts with large hexagon head assemblies for
steel structures**

钢结构用高强度大六角头螺栓连接副

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document replaces GB/T 1231-2006 "Technical requirements for high-strength large hexagon head bolts, large hexagon nuts and washers for steel structures". GB/T 1228-2006 "High-strength large hexagon head bolts for steel structures", GB/T 1229-2006 "High-strength large hexagon nuts for steel structures" and GB/T 1230-2006 "High Strength Washers for Steel Structures". This document is based on GB/T 1231-2006 and integrates GB/T 1228- 2006, GB/T 1229-2006, GB/T 1230-2006. Compared with GB/T 1231-2006 and other documents, in addition to structural adjustments and In addition to editorial changes, the main technical changes are as follows:

- a) Added bolt connection type diagram (see Chapter 4);
- b) Added the specifications of M33 and M36 for large hexagon head bolts, large hexagon nuts and washers in bolted connection pairs (see Chapter 5);
- c) The theoretical mass of large hexagon head bolts, large hexagon nuts and washers in bolted joints has been changed (see Chapter 5, GB/T 1228- 2006~Chapter 3 of GB/T 1230-2006);
- d) Added gasket type (see 5.3);
- e) Added materials used (see 6.1);
- f) The requirements for tensile strength, cross-sectional shrinkage and absorbed energy in the mechanical properties of bolt specimens have been changed (see 6.2.1.1, GB/T 1231-

2006, 3.2.1.1);

g) Changed the upper limit of tensile load and core hardness of 10.9S bolt wedge load test (see 6.2.1.2, GB/T 1231-2006 3.2.1.2);

h) Added the provisions for the carburized layer of bolts (see 6.2.1.3);

i) The hardness requirements for 10H nuts have been changed (see 6.2.2.2, 3.2.2.2 of GB/T 1231-2006);

j) The standard deviation of the torque coefficient is changed to the requirement for the coefficient of variation (see 6.3.1,

3.3.1 of GB/T 1231-2006);

1 Scope

GB/T 1231-2024 is the Chinese national standard on high strength bolts with large hexagon head assemblies for steel structures, in the field of mechanical systems and components. 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 29 September 2024 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 April 2025. Classification: ICS 21.060.10, CCS J13. 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 document specifies the types, dimensions, and technical requirements of high-strength large hexagonal bolt connections (hereinafter referred to as "bolt connections") for steel structures. Requirements, test methods, inspection rules and marking, logo, label, packaging and quality inspection report. This document is applicable to railway and highway bridges, tower mast structures, boiler steel structures, industrial and civil buildings, lifting machinery and other steel structures. Wiping type high strength bolt connection pair.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document. document. GB/T