



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

中华人民共和国国家标准

GB/T 17107-1997

**Structural steel grades and mechanical property for
forgings**

锻件用结构钢牌号和力学性能

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Foreword

This standard is carried out normalization and standardized management for carbon structural steel forging and alloy structural steel forging according to the regulations of GB 221-1979 *Notations for designations of iron and steel*, and added several designations of carbon structural steel and alloy structural steel forging on the base of GB 700, GB 699, GB 3077, JB 1265, JB 1271 and YB 475, etc. It should be avoided the coincidence with International designation. And refer to domestic and foreign standards, on the base of extensive experiments, then stipulates the deviation of chemical composition and chemical properties as per the characteristic of forging. It made the detailed regulations for position of sampling refers to ASTM A 668, and it is reasonable. So as to be unified the designation, chemical composition and its deviation of chemical composition, mechanical properties, sampling position of specimen for structural steel forgings, and compatibility with International Standard in some extent. Others standards can be based on the regulations of this standard, and put forward technical regulations which combined with industrial characteristics and special cases.

The annex A of this standard is normative

This standard is proposed by Ministry of Metallurgical Industry of the People's Republic of China
This standard is under the jurisdiction of Beijing Central Research & Design Institute of Metallurgical Equipment, MCC Group of Ministry of Metallurgical Industry
Main draft units of this standard are Beiman Special Steel Co., Ltd, China First Heavy Industries and Beijing Central Research & Design Institute of Metallurgical Equipment
Main drafters of this standard are Li Xinghua, Wang Mingjia and Li Yajun.

Structural steel grades and mechanical property for forgings

1. Scope

This standard specifies the structural steel grades and mechanical property for forgings, chemical composition, deviation of chemical composition of finish product as well as mechanical property and sampling position, etc.

This standard is applicable to normal forgings which mechanical property by integrated heat treatment in the equipments of metallurgical, mine, ship and construction machinery, etc.

This standard is not applicable to the forgings such as spindle, rotor, impeller and pressure vessel, etc with high speed rotate under the high temperature in power station equipment.

2. Normative References

The clauses in the following documents have been quoted and become that of this standard. For any cited documents with dates, all the subsequent modifications or revised versions do not apply to this standard. For cited documents without a date, their latest versions apply to this standard.

GB 223 Method of chemical analysis on steel and alloy (See Annex A)

GB 228-87 Metallic Materials - Tensile Testing

GB/T 229-94 Metallic materials—Charpy pendulum impact test method

GB 231-84 Metallic Materials - Brinell Hardness

GB 6397-86 Metallic materials--Test pieces for tensile testing

3. Grades and Mechanical Composition

- 3.1 The grades and mechanical composition of carbon structural steel (melting analysis) shall conform to the regulations of Table 1.
- 3.2 The grades and mechanical composition of alloy structural steel (melting analysis) shall conform to the regulations of Table 2. The contents of sulfur, phosphorus, residual copper, chromium and nickel in steel shall conform to the regulations of Table 3



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