

ICS 77.140.35

CCS H 40



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

GB/T 34565.1-2017

Hot work mould steel - Part 1: Steels for casting moulds

热作模具钢 第1部分：压铸模具用钢

Issued on: October 14, 2017

Implemented on: May 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references

Foreword

GB/T 34565 "hot die steel" to be divided into several parts. This section GB/T 34565 Part 1. This part of the standard drafted in accordance with GB/T 1.1-2009 given rules. This part is proposed by China Iron and Steel Association. This part of the National Standardization Technical Committee Steel (SAC/TC183) centralized. This part of the drafting unit. Fushun Special Steel Co., Ltd., Institute of Iron and Steel Research Institute of Metallurgical Industry Information Standards, Ning Ning Ning Special Steel Group Co., Ltd., Shanghai Institute of Materials, River Metallurgical Technology Co., Ltd., Sichuan Liuhe Forging Co., Ltd., Dalian Sitai Bo Die Technology Co., Ltd., Daye Special Steel Co., Ltd., Jiangsu Yonggang Group Co., Ltd., Tangshan Zhiwei Technology Co., Ltd., Hubei River Metallurgical Technology Co., Ltd., Yongkang Lean Vacuum Heat Treatment Co., Ltd., Zhejiang Wei Sheng Holdings Ltd., Jiangsu Tiangong Tools Co., Ltd., a Die Casting Co., Ltd. Mold Factory. The main drafters of this section. Kang Aijun, Ma Dangshen, Gu Qiang, Zhao Aijun, Xue Chun, Dai Qiang, Zhang Zhanpu, Luan Yan, He Menghua, Zou Chunlei, Xu Min, Yao Hongkang, Wan Chunyan, Dong Xinhui, Zhang Yongqiang, Mei Jianmeng, Xu Wenying, Fang Jianru, Zhou Jian, Liu Zhentian, Wang Wentong, Wang Wenzheng, Huang Zhiyong, Jinyu Feng, Tang Jianjun, Miao Zhigang, Yan Yun, Mou Feng, Yu Hang. Hot work die steel Part 1. Die cast steel

1 Scope

Part 1 of China's national standard for hot work die steel, covering the grades used for die casting moulds. It specifies the order content, the classification, the dimensions, shape and weight, the technical requirements, the test methods, the inspection rules and the packaging, marking and quality certificate. A die casting mould has the hardest duty of any tool steel application. Molten aluminium at around 700 degrees C is injected into it at high velocity, held while it solidifies, ejected, and the cycle repeats every minute or so for hundreds of thousands of shots. The surface therefore swings through a large temperature range twice a minute, and the resulting thermal fatigue cracks the surface into the fine network the trade calls heat checking, which prints onto every casting made afterwards. The steel is also being washed by liquid aluminium, which dissolves iron. So the grade has to resist tempering at working temperature, resist thermal fatigue, and resist soldering, and it has to do all three while tough enough not to crack under the clamping loads.

GB/T 34565 provisions of this section die-casting mold with hot die steel order content, classification, size, shape, weight, technical requirements Demand, test methods, inspection rules, packaging, marking and quality certificates. This section applies to the nominal diameter or side length 80mm ~ 650mm forged round bar, square steel and thickness 80mm ~ 650mm, width 400mm ~ 1200mm forged flat steel.

2 Normative references

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

GB/T 223.11 steel and alloy chromium content - Visual titration or potentiometric titration

GB/T 223.13 Methods for chemical analysis of iron, steel and alloy - The ferrous ammonium sulfate titration method for the determination of vanadium content

GB/T 223.19 Methods for chemical analysis of iron, steel and alloy The neocuproine-chloroform extraction spectrophotometric method for the determination of copper content

GB/T 223.28 Methods for chemical analysis of iron, steel and alloy alpha-benzoin oxime gravimetric method for the determination of molybdenum content

GB/T 223.29 steel and alloy - Determination of lead content carrier precipitation - xylene orange spectrophotometry Steel and alloy - Determination of arsenic content - Distillation separation - Molybdenum blue spectrophotometric method

GB/T 223.37 Methods for chemical analysis of iron, steel and alloy - The distillation separation - indophenol blue photometric method for the determination of nitrogen content

GB/T 223.47 Methods for chemical analysis of iron, steel and alloy - The molybdenum blue photometric method for the determination of the amount of antimony

GB/T 223.48 Methods for chemical analysis of iron, steel and alloy - The photometric method for the determination of bismuth content

GB/T 223.50 Methods for chemical analysis of iron, steel and alloy The determination of phenylfluorone-cetyltrimethylammonium bromide by spectrophotometry Tin content

GB/T 223.54 Methods for chemical analysis of iron, steel and alloy - The flame atomic absorption spectrophotometric method for the determination of nickel content

GB/T 223.60 Methods for chemical analysis of iron, steel and alloy - The perchloric acid dehydration gravimetric method for the determination of silicon content

GB/T 223.62 Methods for chemical analysis of iron, steel and alloy - The butyl acetate extraction spectrophotometric method for the determination of phosphorus content Iron and

steel - Determination of manganese content - Flame atomic absorption spectrometric method Steel and alloy - Determination of sulfur content - Methylene blue spectrophotometric method Steel and alloy carbon content - Determination of gas volumetric method after combustion in a tube furnace GB/T 223.69

GB/T 223.82 steel hydrogen content Determination of inert gas pulse melting heat conduction method Determination of depth of decarburization GB/T 224 steel

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