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

GB/T 46319-2025

**Technical specification for high pellet ratio smelting of blast
furnace**

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 5 Steel Production Enterprises

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the China Iron and Steel Association. This document was drafted by: China Steel Equipment Co., Ltd., Inner Mongolia Baogang Steel Union Co., Ltd., Baowu Resources Co., Ltd., and Shougang Group Co., Ltd. The company's partners include Qian'an Iron & Steel Company, Beijing Shougang International Engineering & Technology Co., Ltd., Central South University, Beijing Zhonghonglian Engineering & Technology Co., Ltd., and Angang Steel. Limited Liability Company, Panzhihua Iron & Steel Group Xichang Steel & Vanadium Co., Ltd., Metallurgical Industry Information and Standardization Research Institute, Jianlong Xilin Steel Co., Ltd., Tianjin Iron & Steel Plant Limited Liability Company, Hebei Puyang Iron & Steel Co., Ltd., Qingdao University of Technology. The main drafters of this document are. Han Jixiang, Deng Rui, Zhang Ruopeng, Zhang Yuanbo, Bai Xiaoguang, Chen Zilu, Huang Xicong, Jiang Tao, Jia Guoli, and Mao Qingwu. Tian Yong, Ren Wei, Li Xiang, Su Zijian, Yang Fan, Luo Fuhui, Cheng Hongquan, Hou Jian, Deng Qiang, Zhu Deqing, Yin Huan, Ma Ke, Wang Jiangwei, Fu Guowei, Duan Fubin, Xu Mengjie, Zhao Senlin, Zheng Zhanbin, Zhou Xiaojun, Yu Hengliang, Wang Zhizheng, Chen Jian, Zhang Kaijun, Gao Xiaoyong, Duan Weibin, He Xiaoyi, Jiang Xue, Li Guanghui Zhou Mingshun, Li Dan, Huang Yun, Zhang Yu, Wang Daijun, Lin Jinglong, Yu Hailong, Zuo Yuanfeng, Wang Jingbin, Zhang Weihua, Han Hongwei, Wang Ruihua, Lu Shufang, Hou Enjian, Rao Mingjun, Fu Guohui, Xiao Kai, Li Jianchun, Liu Jianping, Yang Guang, Zhao Wenshu, Peng Zhiwei, Zhang Qingjian, Zhang Xin, Yu Jingyao, Xu Lei Zhang Yuanchun. Technical Specifications for High-Proportion Pellet Smelting in Blast Furnaces

1 Scope

GB/T 46319-2025 is the Chinese national standard covering running a blast furnace on mostly pellets instead of sinter - the burden distribution and the permeability that changes with it, the slag chemistry, the reducing behaviour, and the operating adjustments the shift has to make. Pellets carry a much lower emission burden than sinter, which is why furnaces are being pushed this way. First edition, under the China Iron and Steel Association. In force from 1 May 2026. Issued on 5 October 2025, it has been in force since 1 May 2026.

This document specifies the technological principles and flow, raw material and fuel requirements, blast furnace smelting, and system control for high-proportion pelletizing technology in blast furnaces. In addition, safety in production and energy conservation and environmental protection. This document applies to blast furnace smelting with an iron pellet feed ratio greater than or equal to 30%.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 20565 Terminology for Iron Ore and Direct Reduced Iron GB/T 20973 Bentonite

GB/T 27692 Iron pellets for blast furnaces

GB 28662 Emission Standard of Air Pollutants for Iron and Steel Sintering and Pelletizing Industry

GB 28663 Emission Standard of Air Pollutants for Ironmaking Industry

GB/T 32151.5 Greenhouse Gas Emission Accounting and Reporting Requirements Part

3 Terms and Definitions

The terms and definitions defined in GB/T 20565, GB/T 27692 and GB/T 34211, as well as the following terms and definitions, apply to this document.

3.1 The blast furnace smelting process in which iron pellets account for 30% or more of the iron-containing furnace charge.

4.Process Principles and Flowchart High-proportion iron ore pellets, along with other iron-containing furnace materials, coke, and auxiliary materials, are charged into the blast furnace through the charging system and the furnace top system in a predetermined ratio. High-temperature, oxygen-rich air is blown into the tuyeres through a hot blast stove, while pulverized coal is simultaneously injected. The gas stream formed by the combustion of pulverized coal and coke in front of the tuyeres flows through the blast furnace.

5 Steel Production Enterprises

GB/T 34211 Determination of the dripping properties of iron ore under high temperature load reduction softening

GB/T 42130 Functional Requirements for Intelligent Manufacturing Industrial Big Data Systems

GB 50408 Design Code for Sintering Plants

GB 50427 Code for Design of Blast Furnace Ironmaking Engineering

GB/T 50491 Standard for Engineering Design of Iron Ore Pelletizing Plants AQ2002-2018

Safety Regulations for Ironmaking AQ2025-2010 Safety Regulations for Sintered Pelletizing

YB/T 6067 Technical Specification for Energy Conservation Monitoring of Blast Furnaces

YB/T 6308 Energy-saving technical specification for belt roasting process of iron ore pellets