

ICS 77.040.10

CCS H 22



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

**GB/T 46590-2025**

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**Metallic materials - Method of wide plate tensile test**

金属材料 宽板拉伸试验方法

**Issued on: October 31, 2025**

**Implemented on: May 1, 2026**

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**Issued by: State Administration for Market Regulation;  
Standardization Administration of the PRC**

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### 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 by the China Iron and Steel Association. This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183). This document was drafted by: China Petroleum Engineering Materials Research Institute Co., Ltd., Tianjin University, and Shanghai Shenli Testing Machine Co., Ltd. China Machinery Testing Equipment Co., Ltd., Shenzhen Haisem Technology Co., Ltd., Ningbo Innovation Research Institute of Beijing University of Aeronautics and Astronautics, Jiangsu Province Special Equipment Safety Supervision and Inspection Institute, Metallurgical Industry Information and Standardization Institute, Luoyang Shipbuilding Materials Research Institute (China Shipbuilding Group Co., Ltd.) The 725th Research Institute of China National Petroleum Pipeline Network Corporation (CNPC) and its branch of the China Petroleum Technology Development Institute. Limited Liability Company, National Standard (Beijing) Inspection and Certification Co., Ltd., Guohe General (Qingdao) Testing and Evaluation Co., Ltd., Steel Research Nake Testing Technology Co., Ltd. Limited Liability Company, Jiangsu Provincial Institute of Product Quality Supervision and Inspection, Chengdu Aircraft Industry (Group) Co., Ltd. The main drafters of this document are. Chen Hongyuan, Gao Xiongxiang, Gong Baoming, Li Jianfeng, Gu Chunhua, Li Changtai, Chen Long, Ge Zhiqiang, Hou Huining, and Gong Xuhui. Xuan Wenbo, Bao Wentao, Zhao Xuetong, Li Zhutie, Gao Yifei, Chen Yuming, Xiong Jun, Zhang Hongjie, Deng Caiyan, Wang Jingxuan, Zhu Yangbo, Bi Shengxi, Cao Miao Wang Bumei, Dong Li, Gao Zhenpeng, Wang Fuxiang, Wang Gang, Cao

Dongdong, Liang Xibing, Ye Huili, Zheng Hong, Shi Yijun, Liu Yong, Chen Changkui, Sun Yong, Zhang Jikui Xie Yi, Guo Bicheng, Niu Jiajia, Yang Yue, Zang Haoliang, Hu Fanfan, Xu Ting, Wang Feng. Tensile testing method for wide plates of metallic materials

## 1 Scope

GB/T 46590-2025 is the Chinese national standard covering the wide plate tensile test - a specimen broad enough to develop plane strain across its width rather than necking freely, which is the condition a real pipeline or pressure vessel wall is in, with the gripping, the instrumentation and the interpretation. First edition, under the China Iron and Steel Association. In force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document specifies the principles, specimens, testing equipment, testing procedures, and test reports for tensile testing of wide plates of metallic materials. This document applies to the determination of uniaxial tensile properties of wide plate tensile specimens of metal sheets or tubes, and is also applicable to the above-mentioned specimens containing specific defects. The deformation and fracture properties of the sample were determined.

## 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 228.1 Metallic materials - Tensile testing - Part

## 3 Terms and Definitions

The terms and definitions defined in GB/T 228.1, GB/T 21143, GB/T 28896, and GB/T 38719, as well as the following terms and definitions, apply to this document.

3.1 A plate-shaped tensile specimen with a width-to-thickness ratio greater than or equal to 5 and a gauge length width greater than or equal to 300 mm.

3.2 A wide plate tensile specimen with a certain width (including the circumferential weld joint) cut along a flat plate.

Note. Abbreviated as "planar specimen".

3.3 A wide plate tensile specimen with a certain circumferential width (including the circumferential weld joint) cut along the axial direction of the pipe.

Note. Abbreviated as "arc surface specimen".

4.Symbols and Explanations The symbols and their corresponding explanations used in this document are shown in Table 1.

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