

ICS 75.180.10

CCS E 92



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

GB/T 44560-2024

**Metallurgical bonding tubing for petroleum and natural gas
industries**

石油天然气工业用冶金复合油管

Issued on: September 29, 2024

Implemented on: January 1, 2025

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

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms, definitions, symbols and abbreviations	2
3.1 Terms and Definitions	2
3.2 Symbols	2
3.3 Abbreviations	3
4 Manufacturing	3
4.1 Information provided by the purchaser	3
4.2 Raw materials	3
4.3 Composite Process	8
4.4 Heat treatment	8
4.5 Straightening	8
4.6 Pipe end processing	8
4.7 Surface treatment	8
4.8 Processes requiring process confirmation	8
5 Technical requirements	9
5.1 Chemical composition	9
5.2 Tensile properties	9
5.3 Impact toughness	10
5.4 Anti-flattening performance	10
5.5 Hardness	11
5.6 Hardenability	12
5.7 Microstructure	12
5.8 Interlayer bonding strength	12
5.9 Corrosion resistance of base layer	13
5.10 Corrosion resistance of CRA layer	13
5.11 Hydrostatic pressure resistance	13
5.12 Dimensions, mass and their deviations	13
5.13 Surface conditions, imperfections and defects	15
6 Inspection and testing	15
6.1 General Principles	15

6.2 Chemical composition test	17
6.3 Tensile properties test	17
6.4 Impact toughness test	18
6.5 Anti-flattening performance test	18
6.6 Hardness test	19
6.7 Hardenability Test	19
6.8 Microstructure Inspection	20
6.9 Interlayer bonding strength test	20
6.10 Base layer corrosion resistance test	21
6.11 CRA layer corrosion resistance test	21
6.12 Hydrostatic pressure resistance test	21
6.13 Inspection of dimensions, quality and their deviations	21
6.14 Appearance Inspection	23
6.15 Nondestructive Testing	23
7 Signs	25
7.1 Logo content	25
7.2 Marking Method	27
7.3 Logo location	27
8 Packaging, storage and protection	27
9 Files	28
Appendix A (Normative) Information to be provided by the purchaser	29
Appendix B (Normative) Base materials for acidic environments other than GB/T 19830-2023	30
Appendix C (Informative) CRA layer material corrosion test	32
Appendix D (Normative) Handling of defects and deficiencies	35
References	36

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 is required.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed and coordinated by the National Technical Committee on

Petroleum and Natural Gas Standardization (SAC/TC 355).

This document was drafted by: China National Petroleum Corporation Engineering Materials Research Institute Co., Ltd., Xi'an Sanhuan Oil Pipe Technology Co., Ltd., Baoshan China National Petroleum Corporation Changqing Oilfield Branch Company, China National Petroleum Corporation Tower Limu Oilfield Branch, China National Petroleum Corporation Southwest Oil and Gas Field Branch, China National Petroleum Corporation Bohai Drilling Engineering Co., Ltd.

Company, Xi'an Dexincheng Technology Co., Ltd., Xi'an Xiangyang Aerospace Materials Co., Ltd., Jiangsu Changbao Steel Pipe Co., Ltd., Hebei Huizhong Pipeline Equipment Co., Ltd.

The main drafters of this document are: Li Fagen, Yin Chengxian, Xu Ting, Yang Lihua, Li Wensheng, Fang Wei, Fu Anqing, Qi Yameng, Liu Yan, Xie Junfeng, Yu Zhiqiang, Li Yufei, Sun Yulai, Wu Ze, Su Hang, Zhao Mifeng, Liu Junlin, Chen Zihan, Tan Shuli, Li Jun, Ma Xiaofeng, Huo Xiuli, Wang Yu.

Metallurgical composite oil pipes for oil and gas industry

1 Scope

This document specifies the manufacture, technical requirements, inspection and Testing, marking, packaging, storage and protection and documentation requirements.

This document is applicable to metallurgical equipment used in the injection or extraction of corrosive fluids such as oil, natural gas and water in the oil and gas industry.

Manufacturing and inspection of composite oil pipes.

2 Normative references

GB/T 228.1

GB/T 228.2

GB/T 229

GB/T 230.1

GB/T 241

GB/T 4157-2017

GB/T 4334-2020

GB/T 4340.1

GB/T 5777

GB/T 6394

GB/T 6396

GB/T 7735

GB/T 9445

GB/T 13298

GB/T 15260-2016

GB/T 17897-2016

GB/T 19830-2023

GB/T 20490

GB/T 23802-2023

GB/T 42673

GB/T 42677

chinastandards.org · PREVIEW