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GB/T 44152-2024

Ultrasonic testing method for the ends of seamless steel tubes

无缝钢管管端超声检测方法

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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. 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 by the China Iron and Steel Association. This document is under the jurisdiction of the National Technical Committee on Steel Standardization (SAC/TC183). This document was drafted by: Wuhan Zhongke Innovation Technology Co., Ltd., Hengyang Valin Steel Pipe Co., Ltd., and Steel Research Institute Nake Testing Technology Co., Ltd. Co., Ltd., Inner Mongolia Baotou Steel Union Co., Ltd., Jiangsu Jinyu Intelligent Testing System Co., Ltd., Qinghai Huahui Testing Technology Co., Ltd. Company, Metallurgical Industry Information Standards Research Institute. The main drafters of this document are. Wang Zicheng, Zhang Li, Liu Guanglei, Han Yulong, Wang Ping, Zhang Weilu, Dong Li, Lin Guanghui, Deng Shirong, Zhu Guoqing, Wang Zenghai, Fan Xiangxiang, Sun Xuan, Han Zhixiong, Fang Huajun, Liu Tao, Zhang Yuhai, Wang Guanglai, Gui Linlin, Zhou Huimin, Wang Yongfeng, Li Yuke, Zhang Jianwei, Xue Jianzhong. Ultrasonic testing method for seamless steel pipe ends

1 Scope

GB/T 44152-2024 specifies the ultrasonic testing of the ends of seamless steel tubes. It addresses a gap that has caused a great deal of trouble in the pipe trade: the automated ultrasonic line that inspects a tube as it passes through cannot inspect the first and last stretch of it, because the probes need the tube to be moving under them, so an untested end zone of a hundred millimetres or more is left at each end. That untested zone is precisely where the tube will be welded into a line or threaded into a coupling. The standard sets the requirements on the equipment, the probes and the reference standards for end testing, the surface preparation, the scanning technique and the coverage required, the sensitivity setting and the calibration, the detection of longitudinal, transverse and laminar imperfections, the evaluation and the acceptance levels, and the reporting and marking of the tested ends. For a tube mill, a pipeline contractor or an inspection body in China, this is the method that closes the gap.

This document specifies the general requirements, testing equipment, test blocks, testing methods, testing equipment commissioning and verification for ultrasonic testing of seamless steel pipe ends. Inspection, result evaluation and test report. This document is applicable to the longitudinal, transverse and layered defects of seamless steel pipe ends with an outer diameter of not less than 6 mm and a ratio of outer diameter to wall thickness of not less than 5. Lack of ultrasonic testing.

Note. The delamination defect detection involved in this document is applicable to steel pipes with a wall thickness of not less than 5mm.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 5777 Full circumferential automatic ultrasonic testing of seamless and welded (except submerged arc welded) steel tubes for longitudinal and/or transverse imperfections

GB/T 9445 Qualification and certification of non-destructive testing personnel

GB/T 12604.1 Nondestructive testing terminology Ultrasonic testing

GB/T 20737 General terms and definitions for non-destructive testing

GB/T 27664.1 Non-destructive testing - Performance and inspection of ultrasonic testing equipment - Part

3 Terms and definitions

The terms and definitions defined in GB/T 5777, GB/T 12604.1, GB/T 20737 and GB/T 41966 and the following terms and definitions apply to this document.

3.1 The areas at both ends of the steel pipe that cannot be effectively inspected during automatic inspection of the pipe body are shown in Figure 1.