NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

GB/T 40080-2021

Nondestructive testing of steel tubes - Automated electromagnetic testing of seamless and welded (except submerged arc-welded) steel tubes for the verification of hydraulic leak tightness

Issued on: April 30, 2021 **Implemented on: November 1, 2021**

Issued by: SAMR; SAC

Table of Contents

Foreword

This document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1: Rules for the Structure and Drafting of Standardizing Documents.

This document adopted the translation method to equivalently use ISO 10893-1:2011 Non-Destructive Testing of Steel Tubes - Part 1: Automated Electromagnetic Testing of Seamless and Welded (Except Submerged Arc-Welded) Steel Tubes for the Verification of Hydraulic Leak-Tightness.

This document embodies the amendments of ISO 10893-1:2011/AMd.1:2020; the clauses involved in these amendments have been marked by a vertical double line (||) on the outer margins.

The Chinese documents that have consistent correspondence with the normatively cited international documents in this document are as follows:

--- GB/T 9445 Non-Destructive Testing - Qualification and Certification of NDT Personnel (GB/T 9445-2015, ISO 9712:2012, IDT).

This document made the following editorial modifications:

--- Modify the standard name so as to adapt to the requirements of Chinese

standard.

Please note some contents of this document may involve the patents. The issuing agency of this document shall not assume the responsibility to identify these patents.

This document was proposed by China Iron & Steel Association.

This document shall be under the jurisdiction of National Technical Committee for Standardization of Steel (SAC/TC 183).

Drafting organizations of this document: Central Iron & Steel Research Institute; Hengyang Valin Steel Tube Co., Ltd.; Zhejiang Kingland Pipeline and Technologies Co., Ltd.; Ncs Testing Technology Co., Ltd.; CNPC Tubular Goods Research Institute; China Metallurgical Information and Standardization Research Institute; and Beijing AriTime Intelligent Control Co., Ltd.

Chief drafting staffs of this document: Zhang Jianwei, Tian Yan, Chen Wenhao, Liu Guanglei, Huang Lei, Dong Li, Hu Yu, Wang Yongfeng, Deng Shirong, Xu Lei, Li Ting, Wang Hongliang, Wang Xiaowen, Zhu Guoqing, Zhang Hailong, Yang Guangjie, Fan Hong, and Zhao Bin.

Non-Destructive Testing of Steel Tubes - Automated Electromagnetic Testing of Seamless and Welded (Except Submerged Arc-Welded) Steel Tubes for the Verification of Hydraulic Leak-Tightness

1 Scope

This document specifies the automated electromagnetic testing of seamless and welded steel tubes, with the exception of submerged arc-welded (SAW) tubes, for verification of hydraulic leak-tightness. The eddy current testing method is applicable to test the steel tubes with outer diameter greater than or equal to 4mm; while the magnetic flux leakage testing method is applicable to test the steel tube with outer diameter greater than 10mm.

This document may also be applicable to the testing of hollow sections.

NOTE: Electromagnetic testing using magnetic flux leakage method is not applicable to

austenitic stainless-steel tubes.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this document.

ISO 9712 Non-Destructive Testing - Qualification and Certification of NDT Personnel

ISO 11484 Steel Products - Employer's Qualification System for Non-Destructive Testing (NDT) Personnel

3 Terms and Definitions

For the purposes of this document, the terms and definitions given in ISO 11484 and the following apply.

.....