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

GB/T 25774.3-2023

Replacing GB/T 25774.3-2010

**Test methods for welding consumables - Part 3: Preparation
and testing of a fillet weld specimens for T-joint
(English Translation)**

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Table of Contents

- Introduction
- 1 Scope
- 2 Normative references
- 3 Terms and Definitions
- 4 General
- 5 Base material for testing
- 6 Specimen preparation
- 7 Test piece inspection
- 8 Test report

Foreword

The document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 3 of GB/T 25774 "Inspection of Welding Materials": GB/T 25774 has released the following parts:

---Part 1: Preparation of mechanical properties specimens of steel, nickel and nickel alloy deposited metals;

---Part 2: Preparation of mechanical properties specimens for single-sided single-pass welding and double-sided single-pass welded joints of steel;

---Part 3: Preparation and inspection of T-joint fillet weld specimens:

This document replaces GB/T 25774.3-2010 "Inspection of Welding Materials Part 3: Preparation and Inspection of T-Joint Fillet Weld Samples" "Experience", compared with GB/T 25774.3-2010, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Added the measurement of weld concavity (see 7.2):

This document is modified to adopt ISO 15792-3:2011 "Test methods for welding materials Part 3: Multi-position adaptation of welding materials fillet welds Ability and Root Penetration Classification Test":

Compared with ISO 15792-3:2011, this document has made the following structural adjustments:

---Added a "Terms and Definitions" chapter:

The technical differences between this document and ISO 15792-3:2011 and their reasons are as follows:

---Changed the scope (see Chapter 1) to adapt to my country's technical requirements;

---Added normative reference to GB/T 3375 (see Chapter 3) to adapt to my country's technical requirements and increase operability;

---Replaced ISO 6947 (see 6.2) with the normatively quoted GB/T 16672 to adapt to my country's technical requirements and increase operability;

---Added visual inspection and inspection requirements (see 7.1) to apply to my country's technical requirements;

---Added the requirement to inspect the fracture surface after the specimen is broken (see 7.3) to comply with my country's technical requirements;

---The content of the test report (see Chapter 8) has been changed to adapt to my country's technical requirements:

The following editorial changes have been made to this document:

---In order to coordinate with the existing standards, the name of the standard is changed to "Inspection of Welding Materials Part 3: Preparation of T-joint fillet weld specimens" Preparation and Inspection":

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

Introduction

The mechanical properties, multi-position adaptability and root penetration of T-joint fillet welds are important indicators for the classification or inspection of welding materials:

The specimen preparation process has a great impact on its final results:

GB/T 25774 "Inspection of Welding Materials" standardizes the mechanical properties and preparation of T-joint fillet weld specimens, welding materials Product standards all quote this series of documents, and the unified requirements for sample preparation are conducive to the implementation of product standards: GB/T 25774 is welding materials the universal sample preparation method standard consists of the following three parts:

---Part 1: Preparation of mechanical properties specimens of steel, nickel and nickel alloy deposited metals: The purpose is to provide for the preparation of steel, nickel the test piece base material, preparation requirements, welding conditions and sample requirements required for arc welding materials deposited metal mechanical properties test specimens:

---Part 2: Preparation of mechanical properties specimens of single-sided single-pass welded and double-sided single-pass welded joints of steel: The purpose is to provide for the application the specimen master required for preparing mechanical properties specimens of single-sided single-pass welding and double-sided single-pass welding joints of steel arc welding materials:

Materials, preparation requirements, welding conditions and sample requirements:

---Part 3: Preparation and inspection of T-joint fillet weld specimens: The purpose is to provide for the preparation of steel and nickel welding materials the test piece base material, preparation requirements and inspection requirements required for T-joint fillet weld specimens:

When fillet welding is used as the welding material, testing and classification can be carried out in accordance with the provisions of this document: The provisions of this document are applicable to the evaluation of welding materials Methods for specimen preparation and test result evaluation for fillet weld tests based on welding position and root penetration requirements: The test described in this document the test conditions and specified test results should not be used as requirements for process qualification:

Examination of welding materials part 3:

Preparation and inspection of T-joint fillet weld specimens

1 Scope

This document specifies the base metal, test piece preparation, test piece inspection and test report for T-joint fillet weld testing of welding materials:

This document is applicable to the test and evaluation of T-joint fillet welds of steel, nickel and nickel alloys and other welding materials:

This document does not stipulate acceptance requirements, which shall be in accordance with relevant welding material product standards:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 3375 Welding terminology GB/T 16672 Weld --- Working position --- Definition of inclination and angle (GB/T 16672-1996, idtISO 6947:1990)

3 Terms and definitions

The terms and definitions defined in GB/T 3375 and the following apply to this document:

Weld thickness calculation theoretical throat the thickness of the weld used when designing the weld:

Note: For fillet welds, it is equal to the length of the perpendicular line from the vertex of the right angle to the hypotenuse in the largest right-angled isosceles triangle drawn within the cross-section of the fillet weld. It is also customary to it is called throat thickness:

[Source: GB/T 3375-1994, 2:65, with modifications] 3.2 Weld convexity in the cross-section of a convex fillet weld, the maximum distance between the weld toe line and the weld surface:

[Source: GB/T 3375-1994, 2:66] 3.3 Weld concavity in the cross-section of a concave fillet weld, the maximum distance between the weld toe line and the weld surface:

[Source: GB/T 3375-1994, 2:67] 3.4 weld toe weld toe the interface between the weld surface and the base metal:

[Source: GB/T 3375-1994, 2:68]