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

GB/T 46087.2-2025

**Test for shop primers in relation to welding and allied
processes - Part 2: Welding properties of shop primers
(English Translation)**

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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.

This document is Part 2 of GB/T 46087 "Shop Primer Welding and Related Process Tests". GB/T 46087 has been published as follows.

Part 2.

- Workshop primer welding and related process tests, Part 1: General requirements;
- Workshop primer welding and related process tests, Part 2: Welding performance;
- Workshop Primer Welding and Related Process Tests Part 3: Thermal Cutting;
- Workshop primer welding and related process tests, Part 4: Emission of smoke and gas.

This document is modified to adopt ISO 17652-2:2003 "Welding shop - Primer - Welding and related processes - Tests - Part 2: Weldability".

The technical differences between this document and ISO 17652-2:2003, and the reasons therefor, are as follows.

- The scope has been changed to conform to the drafting rules of Chinese standards (see Chapter 1);
- The normative reference GB/T 46087.1 replaces ISO 17652-1:2003 (see Chapter 3); the normative reference...

GB/T 5185 replaces ISO 4063 (see 4.1); GB/T 3207, a normative reference, replaces EN10278 (see 4.2).

ISO 6947 has been replaced by the normatively referenced GB/T 16772, and the normatively referenced GB/T 8110 has been added.

The normative reference GB/T 39255 (see 4.3.1) is used; the normative reference GB/T 700 replaces EN10025:1990.

The normative reference GB/T 13452.2 replaces EN ISO 2808 and EN 10238 (see 5.2); the normative references are as follows.

GB/T 8923.1 replaces ISO 8501-1:2001 (see 5.2) to be applicable to my country's technical requirements;

---Modifying clauses regarding the test principles (see 4.1) have been removed to facilitate practical application of the standard;

---A 2mm requirement for the cut size has been added to facilitate the practical application of the standard (see 4.3.2);

---The explanatory clause regarding the selection of fillet weld joint types in the test principles (see 5.1) has been deleted to facilitate the implementation of the standard.

The following editorial changes have been made to this document.

---The standard title has been changed to "Shop Primer Welding and Related Process Tests Part 2: Welding Performance";

---Appendix ZA of the international standard has been deleted.

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 and is under the jurisdiction of the National Technical Committee on Welding Standardization (SAC/TC55).

Introduction

Shop primer, as a key protective layer in steel pretreatment, is widely used in steel structures, shipbuilding, and automobile manufacturing, and its performance directly affects...

It relates to the quality and safety of subsequent processes such as welding and cutting.

GB/T 46087 "Shop Primer Welding and Related Process Tests" aims to establish a complete evaluation system for shop primer processes, including shop primer...

The impact of paint on welding performance, thermal cutting efficiency, and dust emissions can be divided into the following four parts.

---Part 1: General Requirements. The purpose is to specify the basic conditions, terminology definitions, environmental and safety requirements for testing, in order to provide a basis for subsequent testing.

Provide a unified framework.

---Part 2: Weldability. The purpose is to assess the effect of shop primer on weldability by evaluating the severity of weld porosity defects.

The impact.

---Part 3: Thermal Cutting. The purpose is to clarify the test method for the maximum thermal cutting speed of the shop primer, using standardized test pieces.

Preparation and cutting parameters were set, and the impact of the primer on cutting efficiency and process stability was evaluated.

---Part 4: Emissions of Smoke and Gases. The aim is to establish an evaluation system for the emission levels of smoke and harmful gases from the primer workshop.

This system provides technical support for reducing occupational health hazards and environmental pollution.

Workshop primer welding and related process tests Part 2: Welding Performance

1 Scope

This document specifies the testing requirements for the effect of shop primer on weldability, including grading test requirements and weldability test requirements.

This document applies to the evaluation test of the weldability of shop primer.

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 700 Carbon Structural Steel (GB/T 700-2006, ISO 630:1995, NEQ) GB/T 3207 Bright Silver Steel GB/T 5185 Welding and Related Processes (GB/T 5185-2005, ISO 4063:1998, IDT) GB/T 8110 Solid welding wire for non-alloy steel and fine-grained steel for gas metal arc welding (GB/T 8110-2020) ISO 14341:2010, MOD) GB/T 8923.1 Visual assessment of surface cleanliness of steel before coating - Part 1: Uncoated steel Rust grades and treatment grades of steel surfaces after complete removal of original coatings (GB/T

8923.1-2011, ISO 8501-1.

2007, IDT)

GB/T 13452.2 Determination of film thickness of paints and varnishes (GB/T 13452.2-2008, ISO 2808:2007, IDT) GB/T 16672 Definition of the working position angle and rotation angle of weld (GB/T 16672-1996, ISO 6947:1990, IDT) GB/T 19867.1-2005 Specification for Arc Welding Procedure (ISO 15609-1:2004, IDT) GB/T 39255 Shielding gases for welding and cutting (GB/T 39255-2020, ISO 14175:2008, MOD) GB/T 46087.1 Shop primer welding and related process tests - Part 1: General requirements (GB/T 46087.1-2025) ISO 17652-2:2003, MOD)

3 Terms and Definitions

The terms and definitions defined in GB/T 46087.1 apply to this document.

4.1 Principle

This experiment assesses the severity of porosity by welding standard welds onto a series of shop primer surfaces, providing a range of shop primer phases of specified thicknesses.

For the evaluation method of welding performance, the test only adopts the non-inert gas shielded arc welding (process code) specified in GB/T 5185.

135), through the joint type and tight assembly design, ensure the significance level of the pores to ensure the discrimination and repeatability of the test results.

Note: Due to different actual application requirements, no acceptable limit for porosity is specified. The expected actual weld porosity is lower than the value measured in the test.