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

GB/T 18570.9-2025

Replacing GB/T 18570.9-2005

**Preparation of steel substrates before application of paints and related products
- Tests for the assessment of surface cleanliness - Part 9: Field method for the
conductometric determination of water-soluble salts**

涂覆涂料前钢材表面处理 表面清洁度的评定试验 第9部分：水溶性盐的现场电导
率测定法

(English Translation)

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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.

This document is Part 9 of GB/T 18570 "Surface preparation of steel materials before application of paint - Tests for assessment of surface cleanliness".

GB/T 18570 has published the following parts.

- Part 2: Laboratory determination of chloride on cleaned surfaces;
- Part 3: Assessment of dust on steel surfaces before coating (pressure-sensitive adhesive tape method);
- Part 4: Guidance on the assessment of the possibility of condensation before application of coatings;
- Part 5: Determination of chloride on steel surfaces before coating (ion detection tube method);
- Part 6: Sampling of soluble impurities by Bresle method;
- Part 9: Field conductivity determination of water-soluble salts;
- Part 11: In situ turbidity determination of water-soluble sulfate.

This document replaces GB/T 18570.9-2005 "Surface preparation of steel materials before coating - Assessment of surface cleanliness - Part 9 Compared with GB/T 18570.9-2005, in addition to structural adjustments and editorial changes, the main changes are.

The technical changes are as follows.

- a) The "Scope" has been changed (see Chapter 1, Chapter 1 of the 2005 edition);

- b) Added "Terms and Definitions" (see Chapter 3);
- c) "Principles" has been changed (see Chapter 4, Chapter 3 of the 2005 edition);
- d) "Solvents" has been deleted (see Chapter 4 of the 2005 edition);
- e) Changed "conductivity meter" to "conductivity meter" and modified the corresponding requirements (see 5.1, 5.1 of the 2005 edition);
- f) Changed "glass beaker" to "beaker" and changed the corresponding requirements (see 5.2, 5.2 of the 2005 edition);
- g) Changed "standard adhesive bag" to "sampling equipment" and modified the corresponding requirements (see 5.3, 5.3 of the 2005 edition);
- h) The requirements for "syringes" have been changed (see 5.4, 5.4 of the 2005 edition);
- i) Added "Solvent" (see 5.5);
- j) Added "calibration" (see 6.1);
- k) Changed "Water preparation and blank test" to "Water preparation and equipment blank test" and changed the corresponding requirements (see 6.2, 2005 6.1 of the 2012 edition);
- l) The requirements for "removal of salt from the surface of steel" have been changed (see 6.3, 6.2 of the 2005 edition);
- m) The requirements for "conductivity measurement" have been changed (see 6.4, 6.3 of the 2005 edition);
- n) Change "presentation of results" to "calculation" (see Chapter 7, Chapter 7 of the 2005 edition), and add "corrected volume calculation" (see 7.1); Changed the corresponding content of the calculation of total surface concentration of surface salt (see 7.2, Chapter 7 of the 2005 edition); Added "Example. Based on According to ISO 8502-6 standard adhesive bag A-1250 and flexible sleeve S-1000" (see 7.3);
- o) "Figure 1" has been changed (see Figure 1, Figure 1 of the 2005 edition);
- p) The requirements for "accuracy" have been changed (see Chapter 8, Chapter 8 of the 2005 edition);
- q) The requirements for "Test Report" have been changed (see Chapter 9, Chapter 9 of the 2005 edition).

This document is equivalent to ISO 8502-9:2020 "Surface preparation of steel materials before application of paints - Assessment of surface cleanliness - Part 9 "In-situ conductivity determination method for water-soluble salts".

The following minimal editorial changes have been made to this document.

--- Corrected the editorial error in 5.2, changing "6.1" to "5.1";

--- Corrected the editorial errors in 5.4, changing "7.2" to "6.2" and "7.3" to "6.3".

Introduction

The test method is an important means to test the performance of samples. Different test methods can produce different test results.

The purpose of standardization is to achieve a standard, a single test, and industry-wide recognition. Steel is one of the most basic structural materials in the modern industrial system.

First, the surface treatment quality directly affects the adhesion performance and long-term protective effect of the coating. The scientific assessment of the cleanliness of the steel surface is the key to ensuring in this regard, my country has made great progress in the field of coating technology by studying and referring to international standards and advanced foreign standards.

A complete set of standards for steel surface cleanliness assessment test methods has been established. GB/T 18570 "Surface treatment of steel before coating" the Cleanliness Assessment Test aims to provide an internationally accepted and reliable test method for the control of steel surface cleanliness in my country.

parts.

--- Part 2: Laboratory determination of chloride on cleaned surfaces. The purpose is to standardize the laboratory determination of chloride on cleaned surfaces.

Laboratory test procedures.

--- Part 3: Dust assessment on steel surfaces before coating (pressure-sensitive adhesive tape method). The purpose is to standardize the dust assessment on steel surfaces before coating.

Test procedure and evaluation criteria for the evaluation of dust on surfaces (pressure-sensitive adhesive tape method).

--- Part 4: Guidelines for the assessment of the possibility of condensation before application of coatings. The purpose is to standardize the assessment of the possibility of condensation before application of coatings.

Test procedures and evaluation criteria.

--- Part 5: Determination of chloride on steel surface before coating (ion detection tube method).

Test procedure for the determination of chloride on the surface of materials (ion detection tube method).

--- Part 6: Bresle method for sampling of soluble impurities. The purpose is to standardize

the Bresle method for sampling of soluble impurities program.

--- Part 9: Field conductivity determination method for water-soluble salts. The purpose is to standardize the test method for the field conductivity determination of water-soluble salts.

Verification procedures.

--- Part 11: On-site turbidity determination of water-soluble sulfate. The purpose is to standardize the on-site turbidity determination of water-soluble sulfate test procedures.

The purpose of test method standards is to unify test procedures and methods. This document is for the evaluation of the cleanliness of steel surfaces before coating.

This document describes the method for determining the on-site conductivity of water-soluble salts on the surface of steel.

The on-site conductivity determination method for water-soluble salts on the surface of the water-soluble salts specifies the test instrument, sampling equipment, sampling steps, and calculation method of the total surface concentration of water-soluble salts.

Methods, etc., to meet the needs of on-site conductivity measurement of water-soluble salts.

The release and implementation of this document can further meet the assessment test needs of steel surface cleanliness in my country and accelerate the integration of my country's national standards with international standards.

The integration of advanced standards makes my country's technical requirements for this method more in line with international requirements, and can further improve GB/T 18570 the series of standards "Tests for evaluating the surface cleanliness of steel surface treatment before coating" are convenient for adoption within the industry.

Steel surface preparation before coating Surface cleanliness assessment test Part 9: In situ conductivity determination of water-soluble salts

1 Scope

This document describes a method for evaluating the presence of various water-soluble salts on steel surfaces by in situ conductivity measurements before and after surface treatment.

Surface concentration method.

This document is not intended for use in determining surface concentrations of individual chloride, sulfate or sodium salts.

This document is only applicable to the assessment of impurities that represent the majority of electrolytes (ions) formed in contact with water.