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Methods of salt spray testing

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by The Surface Finishing Society of Japan (SFJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently, **JIS Z 2371**:2000 is replaced with this Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Methods of salt spray testing

Introduction

This Japanese Industrial Standard has been prepared based on the third edition of **ISO 9227** published in 2012 with some modifications of the technical contents.

The portions given sidelines or dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JD.

1 Scope

This Standard specifies the salt solutions, the apparatus, and the procedure (including evaluation of cabinet reproducibility related to corrosivity, test specimens, test conditions, and evaluation of test results) to be used in conducting the neutral salt spray test, acetic acid salt spray test and copper-accelerated acetic acid salt spray (CASS) tests for assessment of the corrosion resistance of metallic materials, with or without electroplating, or inorganic film or organic coating such as painted coat.

WARNING Persons carrying out tests based on this Standard should be familiar with normal laboratory practice. This Standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this Standard to establish appropriate safety and health practices.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 9227:2012 *Corrosion tests in artificial atmospheres—Salt spray tests* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 3141 *Cold-reduced carbon steel sheet and strip*

JIS K 5600-1-4 *Testing methods for paints—Part 1: General rule—Section 4: Standard panels for testing*

NOTE : Corresponding International Standard: ISO 1514:2004 *Paints and varnishes—Standard panels for testing* (MOD)

JIS K 5600-1-7 *Testing methods for paints—Part 1: General rule—Section 7: Determination of film thickness*

NOTE : Corresponding International Standard: ISO 2808:2007 *Paints and varnishes—Determination of film thickness* (MOD)

JIS K 8145 *Copper (II) chloride dihydrate (Reagent)*

JIS K 8150 *Sodium chloride (Reagent)*

JIS K 8180 *Hydrochloric acid (Reagent)*

JIS K 8284 *Diammonium hydrogen citrate (Reagent)*

JIS K 8355 *Acetic acid (Reagent)*

JIS K 8576 *Sodium hydroxide (Reagent)*

JIS K 8847 *Hexamethylenetetramine (Reagent)*

JIS Z 8802 *Methods for determination of pH of aqueous solutions*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1 NSS (neutral salt spray test)

test to evaluate the corrosion resistance, performed in an atmosphere in which neutral sodium chloride solution is continuously sprayed by means of a salt spray test apparatus

3.2 AASS (acetic acid salt spray test)

test to evaluate the corrosion resistance, performed in an atmosphere in which sodium chloride solution acidified by acetic acid is continuously sprayed by means of a salt spray test apparatus

3.3 CASS (copper-accelerated acetic acid salt spray test)

test to evaluate the corrosion resistance, performed in an atmosphere in which sodium chloride solution acidified by acetic acid and added with copper (II) chloride dihydrate is continuously sprayed by means of a salt spray test apparatus

4 Salt solution for testing

4.1 Preparation of salt solution for testing

Preparation of salt solution for testing shall be as follows.

a) Salt used for salt solution for testing shall be sodium chloride of special grade specified in **JIS K 8150**, or any sodium chloride at least equivalent thereto.

Any sodium chloride at least equivalent thereto as referred to above shall contain less than 0.001 % mass fraction of copper and less than 0.001 % mass fraction of nickel, as determined by atomic absorption spectrophotometry or another analytical method of similar sensitivity. Further, it shall not contain more than 0.1 % mass fraction of sodium iodide, or more than 0.5 % mass fraction of total impurities calculated for dry salt. It shall not contain anticaking agent, which may accelerate or inhibit the corrosion.