

JIS

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 0597 : 2017

**Accelerated cyclic corrosion tests
with dry and wet conditions at
constant absolute humidity for
stainless steels**

ICS 77.060

Reference number : JIS G 0597 : 2017 (E)

G 0597 : 2017

Date of Establishment: 2017-11-20

Date of Public Notice in Official Gazette: 2017-11-20

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Metal and Inorganic

Materials

JIS G 0597:2017, First English edition published in 2018-03

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

© JSA 2018

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

HT/AT

PROTECTED BY COPYRIGHT

Contents

| | Page |
|--|------|
| Introduction | 1 |
| 1 Scope | 1 |
| 2 Normative reference | 1 |
| 3 Test solution | 1 |
| 3.1 Mixed salt solution | 1 |
| 3.2 Preparation of mixed salt solution | 2 |
| 3.3 Preparation of test solution | 2 |
| 4 Apparatus | 2 |
| 5 Test specimens | 4 |
| 5.1 Type, number and dimensions | 4 |
| 5.2 Surface condition | 4 |
| 6 Salt deposition measurement method | 4 |
| 7 Arrangement of test specimens | 4 |
| 8 Operating conditions and procedure | 4 |
| 9 Treatment of specimens after test | 7 |
| 10 Continuity of tests | 8 |
| 11 Duration of tests | 8 |
| 12 Expression of test results | 8 |
| 13 Test report | 8 |
| Annex A (informative) Combined cyclic test instrument with salt deposition unit (two cabinets) | 10 |
| Annex B (informative) Combined cyclic test instrument with salt deposition unit (one cabinet) | 11 |
| Annex C (informative) Salt deposition method by manual spraying | 12 |
| Annex D (informative) Correlations between the corrosion test specified in this Standard and exposure test conducted in actual seashore and marine environment | 13 |
| Annex JA (normative) Test solution for simulating the corrosive effects of ocean water | 14 |
| Annex JB (informative) Comparison table between JIS and corresponding International Standard | 16 |

Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

This **JIS** document is protected by the Copyright Law.

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.

Accelerated cyclic corrosion tests with dry and wet conditions at constant absolute humidity for stainless steels

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 16539:2013**, Edition 1, with some modifications of the technical contents to reflect the local needs and situations in Japan.

The vertical lines on both sides and dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies the accelerated corrosion test procedures for the evaluation of corrosion behaviour of stainless steels in atmospheric environments. It also specifies the apparatus used. The tests involve salt deposition and dry/wet conditions at a constant absolute humidity¹⁾.

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

ISO 16539:2013 *Corrosion of metals and alloys—Accelerated cyclic corrosion tests with exposure to synthetic ocean water salt-deposition process—“Dry” and “wet” conditions at constant absolute humidity (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**.

Note ¹⁾ Absolute humidity is expressed by the mass (g) of vapour contained per air volume of 1 m³.

2 Normative reference

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

JIS G 0595 *Rating method of rust and stain of atmospheric corrosion for stainless steels*

3 Test solution

3.1 Mixed salt solution

For the tests specified in this Standard, commercial synthetic ocean water, or the substitute ocean water specified in Annex JA or the mixed salt solution specified in 3.2 below shall be used.