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Overview of methods available for particle-free erosion corrosion testing in flowing liquids.

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Contents	Page
Foreword.....	vii
Introduction.....	ix
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 Principles.....	2
4.1 Particle-free erosion corrosion.....	2
4.2 Particle-free erosion corrosion test.....	2
4.3 Material loss and observation of surface damage.....	2
5 Test methods.....	3
5.1 Tests for uniform corrosion.....	3
5.1.1 Rotating cylinder test.....	3
5.1.2 Test in a pipe or channel.....	4
5.2 Tests for nonuniform corrosion.....	4
5.2.1 Rotating disc test.....	4
5.2.2 Test in a pipe or channel with changes in flow cross section.....	5
5.2.3 Jet impingement test.....	6
5.3 Application method of electrochemical measurement.....	7
6 Test condition.....	11
6.1 General.....	11
6.1.1 Selection of test method.....	11
6.1.2 The effect of flow velocity and test duration in the respective tests.....	11
6.1.3 Wall shear stress.....	12
6.1.4 Selection of damage measuring methods.....	15
6.1.5 Insulation of test specimen.....	15
6.1.6 Use of multiple specimens.....	15
6.1.7 Unit of metal loss.....	15
6.2 Applications and limitations of tests.....	15
Bibliography.....	18
Foreword.....	iv
1 Scope.....	1
2 Normative references.....	1

3	Terms and definitions	1
3.1	erosion	1 3.2
	erosion corrosion	1
3.3	particle-free erosion corrosion	1
4	Principles	1
4.1	Particle-free erosion corrosion	1
4.2	Particle-free erosion corrosion test	1
4.3	Material loss and observation of surface damage	1
5	Test methods	2
5.1	Tests for uniform corrosion	2
5.1.1	Rotating cylinder test	
5.1.2	Test in a pipe or channel	
5.2	Tests for nonuniform corrosion	3
5.2.1	Rotating disc test	
5.2.2	Test in a pipe or channel with changes in flow cross section	
5.2.3	Jet impingement test	
5.3	Application method of electrochemical measurement	5
6	Test condition	6
6.1	General	6
6.1.1	Selection of test method	
6.1.2	The effect of flow velocity and test duration in the respective tests	
6.1.3	Wall shear stress	
6.1.4	Selection of damage measuring methods	
6.1.5	Insulation of test specimen	
6.1.6	Use of multiple specimen	
6.1.7	Unit of metal loss	
6.2	Applications and limitations of tests	8
	Bibliography	10

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part-1. In particular, the different approval criteria needed for the different types of ISO ~~documents~~document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part-2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 156, *Corrosion of metals and alloys*, ~~WG 14,~~ *Tribocorrosion*.

This second edition cancels and replaces the first edition (ISO-TR 16203:2016), which has been technically revised.

The main changes are as follows:

- In addition to “erosion corrosion”, the description on the “corrosion” under flowing water was added.
- Description on application method of electrochemical measurement was added.

~~A list of all parts in the ISO ##### series can be found on the ISO website.~~

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Introduction

Particle-free erosion corrosion is a major problem in metallic materials in industries handling liquids flowing rapidly which are corrosive. Specifically, the metallic materials include copper, copper alloys and steels, and the liquids are various types of liquids such as seawater, tap water, industrial water, chemical water (e.g. acid and alkali aqueous solution), waste water, etc. Particle-free erosion corrosion usually leads to rapid metal loss with possibly catastrophic consequences. In order to prevent, mitigate and/or control the problems, it is important to select methods for particle-free erosion corrosion testing. This document provides an overview of the methods available for particle-free erosion corrosion testing in flowing liquids.

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~~Overview of methods available for particle-free erosion corrosion testing in flowing liquids.~~

Overview of methods available for particle-free erosion corrosion testing in flowing liquids

2.1 Scope

This document provides an overview of the erosion corrosion tests of materials in single-phase flowing liquids and the test methods available.

4.2.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8044, *Corrosion of metals and alloys — Vocabulary* ^[4]

6.3.3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8044 ^[4] and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/><https://www.electropedia.org/>

3.1 erosion

progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multicomponent fluid, or impinging liquid or solid particles

[Source: ASTM G40-2017, 3] ^[2], 2.2, a ^[1]

3.2 erosion corrosion

process involving conjoint corrosion and erosion

[Source: ISO 8044-2020] ^[4]