



**International
Standard**

ISO 25175

**Marine technology — Standard test
methods for performance of reverse
osmosis (RO) and nanofiltration
(NF) membrane elements**

*Technologie maritime — Méthodes d'essai normalisées pour les
performances des éléments de membranes d'osmose inverse (OI)
et de nanofiltration (NF)*

**First edition
2026-06**

Sample Document
get full document from standards.iteh.ai

Sample Document

get full document from standards.iteh.ai



COPYRIGHT PROTECTED DOCUMENT

© ISO 2026

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 RO and NF membrane elements types	1
5 Membrane elements air tightness test	1
5.1 General.....	1
5.2 Apparatus.....	2
5.3 Test procedure.....	2
6 Membrane elements performance test	3
6.1 Apparatus.....	3
6.2 Test Solution.....	4
6.3 Test procedure.....	4
7 Calculation	5
7.1 Water production.....	5
7.2 Membrane permeation.....	6
7.3 Salt rejection.....	6
7.4 Average salt rejection.....	6
8 Test report	6
Annex A (informative) Example of a test report	8
Bibliography	9

get full document from standards.iteh.ai

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 13, *Marine technology*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Membrane elements are key components in seawater desalination. The diversity of application scenarios and the complexity of feed-water quality in seawater desalination give rise to requirements for the flexibility and diversity of membrane elements. Therefore, there are currently many types of membrane elements on the market. The comparison and use of membrane components mainly refer to the product manual, but the testing methods for membrane elements of different brands are not the same, which inevitably brings obstacles to the users and researchers. For instance, performance evaluations of the same type of membrane elements are obtained from different testing methods, making the comparison of these membrane elements inaccurate.

To solve this problem, this document establishes test methods for evaluating the performance of membrane elements used in seawater desalination, with a focus on reverse osmosis (RO) and nanofiltration (NF) elements. It specifies the types of membrane elements to be tested and standardizes the corresponding testing conditions. The document also covers the required test equipment, procedures, and data processing methods. By providing a uniform benchmark, it serves as a standard reference for users in desalination and related industrial applications, particularly in water treatment. This aims to facilitate the selection of membrane elements and enhances clarity in technical communication.

Sample Document

get full document from standards.iteh.ai