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Ships and marine technology — Fire resistance of non-metallic hose assemblies and non-metallic compensators — Test methods

Navires et technologie maritime — Résistance au feu des flexibles et des compensateurs non métalliques — Méthodes d'essais

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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 8, *Ships and marine technology*, Subcommittee SC 3, *Piping and machinery*.

This second edition cancels and replaces the first edition (ISO 15540:1999), which has been technically revised. It also incorporates the Technical Corrigendum ISO 15540:1999/Cor 1:1999.

The most significant change in this second edition is the inclusion of non-metallic compensators to the fire test procedures outlined in this document. The first edition of this document applied primarily to non-metallic hose assemblies. Because the compensators are used in common piping systems and may have similar materials to hose assemblies, the applicability of the test procedures was expanded to include compensators.

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Introduction

The main objective of the test using the test bench described in this document is to determine whether and for a safety period a non-metallic hose (made of rubber) assembly or non-metallic compensator (bellow made of rubber) can be exposed to fire without becoming inoperable when subjected to the design working pressure. Although the attacking fire is simulated such that it corresponds to a fire occurring in practice, it cannot be assumed that the duration of fire resistance as recorded during that test will also occur in the event of an actual fire, as the installation conditions, which greatly affect to the duration of fire resistance, may vary from case to case.

When carried out using the test bench specified in ISO 15541, the test procedure according to this document is intended to lead to results capable of being reproduced by testing the same size and type.

A specimen test certificate is specified in Annex A.

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Ships and marine technology — Fire resistance of non-metallic hose assemblies and non-metallic compensators — Test methods

1 Scope

This document specifies a test procedure for determining the fire resistance of non-metallic hose assemblies and non-metallic compensators with nominal diameter of up to 150 mm. It may be used for larger sizes provided proper test bench conditions are obtained.

It serves for proving whether, after the period of fire effect on the test bench specified in ISO 15541, hose assemblies and non-metallic compensators continue to be tight, even when subjected to proof pressure.

Only water is permitted as a test medium. With a view to ensuring maximum safety for both the operating personnel and the test bench in the event of damage to the hose or non-metallic compensator during the test, the use of combustible test media is excluded.

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 15541:2016, *Ships and marine technology — Fire resistance of non-metallic hose assemblies and non-metallic compensators — Requirements for the test bench*

3 Terms and definitions

No terms and definitions are listed in this document.

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at https://www.iso.org/obp/

4 Designation

The designation of the test for determining the fire resistance is composed of the elements quoted in the example below:

Test ISO 15540-30-0-5-400-F

In this designation the elements have the following meaning:

Test:	designation
ISO 15540:	number of this document
30:	test duration in minutes

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