

---

---

**Small craft — Non-fire-resistant fuel  
hoses**

*Petits navires — Tuyaux souples pour carburant non résistants au feu*



This document is a preview generated by EBS



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2013

All rights reserved. Unless otherwise specified, 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  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

<b>Foreword</b>	<b>iv</b>
<b>1 Scope</b>	<b>1</b>
<b>2 Normative references</b>	<b>1</b>
<b>3 General requirements</b>	<b>1</b>
<b>4 Hose inner diameter</b>	<b>1</b>
<b>5 Physical tests on finished hose</b>	<b>2</b>
5.1 General	2
5.2 Test liquids	2
5.3 Bursting pressure	2
5.4 Vacuum collapse test	3
5.5 Volume change in test liquids	3
5.6 Mass reduction of test hose	3
5.7 Effect of ozone	3
5.8 Fuel permeation	3
5.9 Cold flex test	4
5.10 Abrasion test — 38 mm inner diameter and larger fuel fill hose with embedded wire reinforcement	4
5.11 Dry heat resistance test	4
5.12 Oil resistance test	4
5.13 Adhesion test	4
<b>6 Marking</b>	<b>4</b>
<b>Annex A (normative) Fuel permeation test (or equivalent test method)</b>	<b>6</b>
<b>Bibliography</b>	<b>8</b>

## 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. [www.iso.org/directives](http://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. [www.iso.org/patents](http://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.

The committee responsible for this document is ISO/TC 188, *Small craft*.

This third edition cancels and replaces the second edition (ISO 8469:2006), which has been technically revised, mainly concerning test liquids in [5.2](#) to cover hoses' long-term resistance to petrol fuel mixed with ethanol as well as diesel fuel mixed with Fatty Acid Methyl Esters (FAME).

# Small craft — Non-fire-resistant fuel hoses

## 1 Scope

This International Standard specifies general requirements and physical tests for non-fire-resistant hoses for conveying petrol or petrol blended with ethanol and diesel fuel or diesel fuel blended with FAME, designed for a working pressure not exceeding 0,34 MPa for hoses with inner diameter up to and including 10 mm and 0,25 MPa for hoses up to 63 mm inner diameter in craft of hull length up to 24 m.

It applies to hoses for small craft with permanently installed fuel systems.

Specifications for fire-resistant hoses are given in ISO 7840[1]. Specifications for permanently installed fuel systems are given in ISO 10088[2].

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3:1973, *Preferred numbers — Series of preferred numbers*

ISO 1307, *Rubber and plastics hoses — Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses*

ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 1817:2011, *Rubber, vulcanized or thermoplastic — Determination of the effect of liquids*

ISO 7233:2006, *Rubber and plastics hoses and hose assemblies — Determination of resistance to vacuum*

ISO 7326:2006, *Rubber and plastics hoses — Assessment of ozone resistance under static conditions*

EN 14214:2008+Amd.1:2009, *Automotive fuels — Fatty acid methyl esters (FAME) for diesel engines — Requirements and test methods*

## 3 General requirements

Hoses complying with this International Standard shall present a smooth inner surface free from pores, other defects and chemical contaminants.

Hoses shall demonstrate suitability for marine use by complying with the requirements of the tests in [Clause 5](#). They shall be marked according to [Clause 6](#).

## 4 Hose inner diameter

[Table 1](#) gives some of the inner diameters based on series R 10 of ISO 3:1973. Tolerances shall conform to ISO 1307.