## Plasttorustikusüsteemid. Termoplasttorud. Sisemisele survele vastupidavuse määramine konstantsel temperatuuril

Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure - Part 1: General method



#### **EESTI STANDARDI EESSÕNA**

#### **NATIONAL FOREWORD**

standardisation organisation.

Käesolev Eesti standard EVS-EN ISO	This Estonian standard EVS-EN ISO
1167-1:2006 sisaldab Euroopa standardi	1167-1:2006 consists of the English text of
EN ISO 1167-1:2006 ingliskeelset teksti.	the European standard EN ISO 1167-
	1:2006.
Käesolev dokument on jõustatud	This document is endorsed on 30.03.2006
30.03.2006 ja selle kohta on avaldatud	with the notification being published in the
teade Eesti standardiorganisatsiooni	official publication of the Estonian national
ametlikus väljaandes.	standardisation organisation.
Standard on kättesaadav Eesti	The standard is available from Estonian

#### Käsitlusala:

standardiorganisatsioonist.

Käesolev standard esitab meetodi termoplasttorude konstantsele sisemisele veesurvele vastupidavuse määramiseks konstantsel temperatuuril. Standard kehtib vedelike teisaldamiseks ettenähtud termoplasttorude suhtes.

#### Scope:

This part of ISO 1167 specifies a general test method for determining the resistance to internal hydrostatic pressure at a given temperature of thermoplastics pipes, fittings and piping systems for the transport of fluids. The method accommodates water-in-water, water-in-air and water-in-liquid tests.

ICS 23.040.20, 23.040.45

Võtmesõnad: plasttorud, termoplastvaigud, vastupidavus survele, vedelikutorustikud

## EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

#### **EN ISO 1167-1**

February 2006

ICS 23.040.45: 23.040.20

Supersedes EN 921:1994

#### **English Version**

Thermoplastics pipes, fittings and assemblies for the conveyance of fluids - Determination of the resistance to internal pressure - Part 1: General method (ISO 1167-1:2006)

Tubes, raccords et assemblages en matières thermoplastiques pour le transport des fluides -Détermination de la résistance à la pression interne - Partie 1: Méthode générale (ISO 1167-1:2006) Rohre, Formstücke und Zubehör aus thermoplastischen Kunststoffen für den Transport von Flüssigkeiten -Bestimmung der Widerstandsfähigkeit gegen inneren Überdruck - Teil 1: Allgemeines Prüfverfahren (ISO 1167-1:2006)

This European Standard was approved by CEN on 23 January 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

#### **Foreword**

This document (EN ISO 1167-1:2006) has been prepared by Technical Committee ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids" in collaboration with Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2006, and conflicting national standards shall be withdrawn at the latest by August 2006.

This document supersedes EN 921:1994.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

#### **Endorsement notice**

ren proved by The text of ISO 1167-1:2006 has been approved by CEN as EN ISO 1167-1:2006 without any modifications.

# INTERNATIONAL STANDARD

ISO 1167-1

First edition 2006-02-01

# Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure —

#### Part 1:

#### **General** method

Tubes, raccords et assemblages en matières thermoplastiques pour le transport des fluides — Détermination de la résistance à la pression interne —

Partie 1: Méthode générale



#### PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

#### © ISO 2006

r. utilized in any form n either ISO at th 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 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 Web www.iso.org

Published in Switzerland

#### **Contents** Page Foreword ......iv Introduction ......v 1 2 3 4 5 Test pieces .......4 6 6.1 6.2 7 7.1 General.......4 7.2 Pressure calculations based on the measured dimensions of the test piece ....... 5 7.3 7.4 8 Calibration and accuracy of the apparatus 6

Conditioning....... 6

Test procedure ....... 6

9 10

11

#### **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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 1167-1 was prepared by Technical Committee ISO/TC 138, Plastics pipes, fittings and valves for the transport of fluids, Subcommittee SC 5, General properties of pipes, fittings and valves of plastic materials and their accessories — Test methods and basic specifications.

This first edition of ISO 1167-1, together with ISO 1167-2, cancels and replaces ISO 1167:1996 and, together with ISO 1167-3, cancels and replaces ISO 12092:2000, of which it constitutes a technical revision.

ISO 1167 consists of the following parts, under the general title *Thermoplastics pipes, fittings and assemblies* for the conveyance of fluids — Determination of the resistance to internal pressure:

- Part 1: General method
- Part 2: Preparation of pipe test pieces
- Part 3: Preparation of components
- Part 4: Preparation of assemblies

#### Introduction

Tests for determining resistance to internal pressure are essential for assessing the properties and durability of thermoplastics piping system parts. In fact, they constitute a basis for determining short-term and long-term characteristics.

Many International Standards contain requirements for the determination of the resistance to pressure of pipes, fittings or assemblies. All these documents describe the equipment for pressurizing the different test pieces considered as well as the testing procedure and the test report.

In order to avoid unnecessary repetition, it is desirable to group together all these documents and to establish one International Standard divided into several parts.

ISO 1167-1 contains a description of the equipment used to pressurize test pieces, the testing procedure to be applied and the test report.

ISO 1167-2, ISO 1167-3 and ISO 1167-4 describe the method of preparation of test pieces corresponding to es or as. each case considered: pipes, components or assemblies.

© ISO 2006 – All rights reserved

# Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure —

#### Part 1:

#### **General** method

#### 1 Scope

This part of ISO 1167 specifies a general test method for determining the resistance to internal hydrostatic pressure at a given temperature of thermoplastics pipes, fittings and piping systems for the transport of fluids.

The method accommodates water-in-water, water-in-air and water-in-liquid tests.

#### 2 Normative references

The following referenced documents are indispensable for the application 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 1167-2:2006, Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 2: Preparation of pipe test pieces

ISO 1167-3, Thermoplastics pipes, fittings and assemblies the conveyance of fluids — Determination of the resistance to internal pressure — Part 3: Preparation of components 1)

ISO 1167-4, Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure — Part 4: Preparation of assemblies 1)

ISO 3126, Plastics piping systems — Plastics components — Determination of dimensions

ISO 9080, Plastics piping and ducting systems — Determination of the long-term hydrostatic strength of thermoplastics pipe materials in pipe form by extrapolation

#### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

#### 3 1

#### component

fitting or valve, in single or multiple form, that is supplied as an integral unit

#### 3.2

### standard dimension ratio

ratio of the nominal outside diameter  $d_n$  of a pipe to its nominal wall thickness  $e_n$ 

1) To be published.

© ISO 2006 – All rights reserved