

**Thermoplastics materials for pipes and fittings for
pressure applications - Classification, design coefficient
and designation**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 12162:2010 sisaldab Euroopa standardi EN ISO 12162:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 28.02.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.11.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 12162:2010 consists of the English text of the European standard EN ISO 12162:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 15.11.2009.

The standard is available from Estonian standardisation organisation.

ICS 23.040.20, 23.040.45

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonilisse süsteemi või edastamine ükskõik millises vormis või millisel teel on keelatud ilma Eesti Standardikeskuse poolt antud kirjaliku loata.

Kui Teil on küsimusi standardite autorikaitse kohta, palun võtke ühendust Eesti Standardikeskusega:
Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

Right to reproduce and distribute Estonian Standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without permission in writing from Estonian Centre for Standardisation.

If you have any questions about standards copyright, please contact Estonian Centre for Standardisation:
Aru str 10 Tallinn 10317 Estonia; www.evs.ee; Phone: +372 605 5050; E-mail: info@evs.ee

English Version

**Thermoplastics materials for pipes and fittings for pressure
applications - Classification, designation and design coefficient
(ISO 12162:2009)**

Matières thermoplastiques pour tubes et raccords pour
applications avec pression - Classification, désignation et
coefficient de calcul (ISO 12162:2009)

Thermoplastische Werkstoffe für Rohre und Formstücke für
Anwendungen unter Druck - Klassifizierung,
Gesamtbetriebs-(berechnungs-)Koeffizient und
Werkstoffkennzeichnung (ISO 12162:2009)

This European Standard was approved by CEN on 10 October 2009.

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 CEN Management Centre 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 12162:2009) 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 May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 12162:1995.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, 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 the United Kingdom.

Endorsement notice

The text of ISO 12162:2009 has been approved by CEN as a EN ISO 12162:2009 without any modification.

Introduction

The revision of this International Standard incorporates the introduction of a $CRS_{\theta,t}$ value (categorized required strength at a temperature θ and time t), in addition to the MRS classification and the introduction of minimum design coefficients for additional materials.

The classification in this International Standard does not qualify a material for a specific application. For specific applications, the relevant product standards require that additional mechanical and physical properties be met.

Thermoplastics materials for pipes and fittings for pressure applications — Classification, designation and design coefficient

1 Scope

This International Standard establishes the classification of thermoplastics materials in pipe form and specifies the material designation. It also specifies a method for calculating the design stress.

It is applicable to materials intended for pipes and fittings for pressure applications.

NOTE 1 Classification, minimum design coefficient and calculation method are based on the resistance to internal pressure with water at 20 °C for 50 years, derived by extrapolation using the method given in ISO 9080.

NOTE 2 Design coefficients for multilayer pipes are described in the appropriate product (system) standards.

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 1043-1, *Plastics — Symbols and abbreviated terms — Part 1: Basic polymers and their special characteristics*

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

3 Terms and definitions

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

3.1

long-term hydrostatic strength

σ_{LTHS}

quantity, with the dimension of stress, which represents the predicted mean strength at a temperature θ and time t

NOTE 1 The quantity is expressed in megapascals.

NOTE 2 Temperature, θ , is expressed in degrees Celsius and time, t , is expressed in years.

3.2

lower confidence limit of the predicted hydrostatic strength

σ_{LPL}

quantity, with the dimensions of stress, which represents the 97,5 % lower confidence limit of the predicted hydrostatic strength at a temperature θ and time t