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**Termoplastmaterjalid survetorustike torude
ja liitmike jaoks. Liigitus ja tähistamine.
Üldine hooldustegur (konstruktsiooniline)**

Thermoplastics materials for pipes and fittings for
pressure applications - Classification and
designation - Overall service (design) coefficient

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 12162:1999 sisaldab Euroopa standardi EN ISO 12162:1995 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 12.12.1999 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 12162:1999 consists of the English text of the European standard EN ISO 12162:1995.</p> <p>This document is endorsed on 12.12.1999 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: Käesolev standard kehtestab torukujuliste termoplastmaterjalide liigituse ning määrab kindlaks materjali tähistuse. Standard esitab ka ehituspinge arvutamise meetodi. Standard kehtib materjalide kohta, mis on ette nähtud survetorustiku torude ja/või liitmike jaoks.</p>	<p>Scope:</p>
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ICS 23.040.20, 23.040.45

Võtmesõnad: arvutamine, hüdrostaatiline surve, liigitused, märgistus, plastid, plasttorud, termoplastvaigud, tähistus, vastupidavus survele

ICS 23.040.20; 23.040.45; 83.080.20

Descriptors: Thermoplastics, classification, plastics, pipes, pipe fittings.

English version

**Thermoplastics materials for pipes and fittings
for pressure applications**

Classification and designation
Overall service (design) coefficient
(ISO 12 162:1995)

Matières thermoplastiques pour tubes et raccords pour applications avec pression; classification et désignation; coefficient global de service (de calcul) (ISO 12 162:1995)

Thermoplastische Werkstoffe für Rohre und Formstücke bei Anwendungen unter Druck; Klassifizierung und Werkstoffkennzeichnung, Gesamtbetriebs(berechnungs)-koeffizient (ISO 12 162:1995)

This European Standard was approved by CEN on 1995-05-15 and is identical to the ISO Standard as referred to.

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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

International Standard

ISO 12 162:1995 Thermoplastics materials for pipes and fittings for pressure applications; classification and designation; overall service (design) coefficient,

which was prepared by ISO/TC 61 'Plastics' of the International Organization for Standardization (ISO), has been adopted by CEN/TC 155 'Plastics piping systems and ducting systems' as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by December 1995 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and United Kingdom.

Endorsement notice

The text of the International Standard ISO 12 162:1995 was approved by CEN as a European Standard without any modification.

Introduction

ISO/TR 9080 states in 0.2.7 of its introduction that methods for using σ_{LTHS} and/or σ_{LCL} to arrive at the allowable design stresses still had to be considered. Service factors or safety factors have to be introduced.

This International Standard uses the lower confidence limit of the long-term strength, σ_{LCL} , as a basis for material classification and designation and defines the relation with the design stress. The service factors are expressed in the overall service (design) coefficient. The final overall service (design) coefficients are given in the product or system standards.

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1 Scope

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

It applies to materials intended for pipes and/or fittings for pressure applications.

The classification, the material designation, and the calculation method are based on the resistance to internal pressure with water at 20 °C in water for 50 years, derived by extrapolation using the method given in ISO/TR 9080.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

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

ISO 497:1973, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers*.

ISO 1043-1:1987, *Plastics — Symbols — Part 1: Basic polymers and their special characteristics*.

ISO/TR 9080:1992, *Thermoplastics pipes for the transport of fluids — Methods of extrapolation of hydrostatic stress rupture data to determine the long-term hydrostatic strength of thermoplastics pipe materials*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 long-term strength at 20 °C for 50 years,

σ_{LTHS} : Quantity with the dimensions of stress, in megapascals, which can be considered as a property of the material and represents the 50 % lower confidence limit for the long-term strength. It is equal to the mean strength or predicted mean strength at 20 °C for 50 years with internal pressure with water.

3.2 lower confidence limit at 20 °C for 50 years,

σ_{LCL} : Quantity with the dimensions of stress, in megapascals, which can be considered as a property of the material and represents the 97,5 % lower confidence limit of the mean long-term strength at 20 °C for 50 years with internal pressure with water.

3.3 minimum required strength, MRS:

Value of σ_{LCL} , rounded down to the next smaller value of the R10 series or of the R20 series conforming to ISO 3 and ISO 497, depending on the value of σ_{LCL} .

3.4 overall service (design) coefficient, C:

Overall coefficient with a value greater than 1, which takes into consideration service conditions as well as properties of the components of a piping system other than those represented in the lower confidence limit.

NOTE 1 Minimum values of C for various materials are given in clause 5.