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Standards

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I.S. EN ISO 12162:2009

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

I.S. EN ISO 12162:2009

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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)

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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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.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.

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Endorsement notice

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

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INTERNATIONAL
STANDARD

ISO
12162

Second edition
2009-11-15

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

Matières thermoplastiques pour tubes et raccords pour applications avec pression — Classification, désignation et coefficient de calcul



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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.

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 12162 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 second edition cancels and replaces the first edition (ISO 12162:1995), which has been technically revised.

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

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