

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

Plastics piping systems - Thermoplastics pipes -  
Determination of resistance to internal pressure at constant  
temperature

## EESTI STANDARDI EESSÕNA

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ICS 23.040.20

Võtmesõnad: plasttorud, termoplastvaigud, vastupidavus survele, vedelikutorustikud,

Inglisekeelsed võtmesõnad: fluid pipelines, plastic tubes, pressure resistance, thermoplastic resins,

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ICS 23.040.20

Descriptors: Fluid pipelines, plastic tubes, thermoplastic resins, pressure resistance

English version

**Plastics piping systems - Thermoplastics pipes -  
Determination of resistance to internal pressure at  
constant temperature**

Systèmes de canalisations plastiques - Tubes  
thermoplastiques - Détermination de la  
résistance à la pression interne à température  
constante

Kunststoff-Rohrleitungssysteme - Rohre a  
Thermoplasten - Bestimmung d  
Widerstandsfähigkeit gegen Innendruck b  
konstanter Temperatur

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**CEN**

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

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

## Foreword

This standard was prepared by CEN/TC 155 "Plastics piping systems and ducting systems" the secretariat of which is held by NNI.

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of an identical text or by endorsement, at the latest by May 1995, and conflicting national standards shall be withdrawn at the latest by May 1995.

This standard is based on the final text for the second edition of International Standard ISO 1167 "Thermoplastics pipes for the transport of fluids - Resistance to internal pressure - Test method", prepared by the International Organization for Standardization (ISO). It is a modification of that text for reasons of alignment with texts for other standards on test methods.

The modifications are:

- the variety of end caps described under type a) has been extended and the use of type c) end caps has been omitted;
- the time for pressurization has been changed from 60 s to the shortest time practicable between 30 s and 1 h. This is to enable testing of pipes with larger diameters, for which pressurization was not possible within 60 s;
- the minimum free lengths of test pieces have been extended;
- editorial changes have been introduced.

The material-dependent parameters and/or performance requirements are incorporated in the System Standard(s) concerned.

This standard is one of a series of standards on test methods which support System Standards for plastics piping systems and ducting systems.

According to 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, United Kingdom.

## Introduction

This standard describes a method for determining the resistance of thermoplastics pipes to constant internal pressure at constant temperature.

It is a method which uses the following conditions:

- water as the reference liquid inside the pipes;
- water, air or a specified liquid as the environment outside the pipes.

The method can be used for short or long-term tests, at different temperatures.

Through interaction with the referring standard, it may be used to determine the time-to-failure at a specified pressure or to test for resistance to internal pressure using a specified pressure/temperature/time combination.

The results obtained can differ depending on whether the environment is air, water or another liquid.

For specific tests, particularly where other liquids such as corrosive liquids are used, other test methods may be used.

This method may be used to obtain data to establish stress/time-to-failure graphs at different temperatures. The rules for drawing these graphs are not within the scope of this document. For such purposes attention is drawn to "Plastics piping and ducting systems - Thermoplastics pipes - Determination of long-term hydrostatic strength of thermoplastics pipe materials by extrapolation" (under preparation at the time of publication of this standard).

## 1 Scope

This standard specifies a method for determining the resistance of thermoplastics pipes to constant internal water pressure at constant temperature.

This standard is applicable to thermoplastics pipes intended for the transport of fluids.

## 2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision.

For undated references the latest edition of the publication referred to applies.

EN 496        *Plastics piping systems - Plastics pipes and fittings - Measurements of dimensions and visual inspection of surfaces.*

## 3 Principle

After conditioning, test pieces are subjected to a specified constant internal hydrostatic pressure for a specified period of time or until the test piece(s) fail(s).

Throughout the test, the test pieces are kept in an environment at a specified constant temperature: this is water ("water-in-water" test), another liquid ("water-in-liquid" test) or air ("water-in-air" test).