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NSAI Standards

Irish Standard
I.S. EN ISO 9967:2016

Thermoplastics pipes - Determination of creep ratio (ISO 9967:2016)

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NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 9967

January 2016

ICS 23.040.20

Supersedes EN ISO 9967:2007

English Version

Thermoplastics pipes - Determination of creep ratio (ISO 9967:2016)

Tubes en matières thermoplastiques - Détermination du taux de fluage (ISO 9967:2016)

Thermoplastische Rohre - Bestimmung des Verformungsverhaltens (ISO 9967:2016)

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European foreword

This document (EN ISO 9967:2016) 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of an identical text or by endorsement, at the latest by July 2016, and conflicting national standards shall be withdrawn at the latest by July 2016.

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INTERNATIONAL STANDARD

ISO 9967

Third edition
2016-01-15

Thermoplastics pipes — Determination of creep ratio

Tubes en matières thermoplastiques — Détermination du taux de fluage

Reference number
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ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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The committee responsible for this document is 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 third edition cancels and replaces the second edition (ISO 9967:2007), which has been technically revised.

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Introduction

Experience shows that when a pipe is installed in the soil in accordance with an appropriate code of practice an increase in deflection may be observed. Depending on the soil and installation conditions this period will vary but normally not exceed two years.

Therefore, the two-year creep ratio as determined in accordance with this International Standard is intended for use when long-term static calculations are carried out.

The theory of creep in thermoplastics materials is briefly explained in Annex A.

For experiments, the test can be carried out based on other ages of the test pieces, other test temperatures and/or other test durations.

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Thermoplastics pipes — Determination of creep ratio

1 Scope

This International Standard specifies a method for determining the creep ratio of thermoplastics pipes having a circular cross-section.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

3 Symbols

		Unit
d_n	nominal diameter of pipe	mm
d_i	inside diameter of test piece of pipe	mm
F	loading force	kN
F_0	pre-load force	N
p	pitch	mm
L	length of test piece	mm
y_0	measured initial deflection	mm
Y_t	calculated deflection at time t	mm
Y_2	extrapolated two-year deflection	mm
δ	vertical deflection used to determine the loading force	mm
B	theoretical deflection, at t = 1 h	mm
M	gradient coefficient	
N	number of points on the deflection curve used for the linear regression	
R	correlation coefficient	
t	time	h
x	log(t)	
y	measured total deflection	mm
γ	creep ratio	

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