

Testing of welded joints of thermoplastics semi-finished products - Part 3: Tensile creep test

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English version

Testing of welded joints of thermoplastics semi-finished products
- Part 3: Tensile creep test

Essais des assemblages soudés sur produits semi-finis en
thermoplastiques - Partie 3: Essai de fluage

Prüfen von Schweißverbindungen aus thermoplastischen
Kunststoffen - Teil 3: Zeitstand-Zugversuch

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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of an identical text or by endorsement, at the latest by July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

The design of welded thermoplastics constructions under static load is based on the long term creep rupture with behaviour, specifically the resistance to slow crack growth of the thermoplastics material and the welds.

For design purposes the relevant characteristic values for the welded joints are the "long term tensile welding factors" to which this standard provides the test method.

The long term tensile welding factors are normally used in conjunction with the creep rupture curve of the parent material, given for example in EN 1778, when designing welded semi-finished products under static load.

The long term tensile welding factor(s), the crack behaviour and the appearance of the fracture surface provide information on the quality of the weld.

NOTE The behaviour of the failure obtained during the tensile creep test can be related to the notch sensitivity of the parent material. An example of a test to provide information about the notch sensitivity of parent material is given in annex A.

1 Scope

This standard specifies the dimensions, the method of sampling and the preparation of the test specimens, and the conditions for performing the tensile creep test perpendicular to the weld in order to determine the long term tensile welding factor.

A tensile creep test may be used in conjunction with other tests (e.g. bend test, tensile test, macrographic examination...) to assess the performance of welded assemblies, made from thermoplastics materials.

The test is applicable to welded assemblies made from thermoplastics materials filled or unfilled such as tubes and fittings, sheets, plates and profiles, but not reinforced, irrespective of the welding process used.

2 Normative references

This European 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 European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 899-1, *Plastics - Determination of creep behaviour - Part 1: Tensile creep*

EN 1778, *Characteristic values for welded thermoplastics constructions — Determination of allowable stresses and moduli for design of thermoplastics equipment*

EN 13100-1, *Non destructive testing of welded joints of thermoplastics semi-finished products — Part 1: Visual examination*