

English Version

**Plastics pipes and fittings - Utilisation of thermoplastics
recyclates - Part 2: Recommendations for relevant
characteristics**

Tubes et raccords en plastique - Utilisation de recyclats
thermoplastiques - Partie 2 : Recommandations pour
les caractéristiques pertinentes

Kunststoff-Rohrleitungen und -Formstücke -
Verwendung von thermoplastischen Rezyklaten - Teil
2: Empfehlungen für relevante Eigenschaften

This Technical Specification (CEN/TS) was approved by CEN on 13 March 2022 for provisional application.

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European foreword

This document (CEN/TS 14541-2:2022) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document, together with Part 1 of the EN 14541 series, supersedes CEN/TS 14541:2013.

The EN 14541 series consists of the following parts under the general title *Plastics pipes and fittings - Utilisation of thermoplastics recyclates*:

- *Part 1: Vocabulary*;
- *Part 2: Recommendations for relevant characteristics* (this document).

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The EN 14541 series is intended to give recommendations to the value chain of thermoplastics piping systems to stimulate the use of thermoplastics recyclates as defined in the European circular economy policy.

Part 1 of the EN 14541 series defines the relevant terms and definitions related to the use of thermoplastics recyclates in thermoplastics piping systems.

This document (part 2 of the EN 14541 series) is a CEN Technical Specification in which recommendations are given for product standards related to the relevant characteristics for defining (e.g. fingerprinting) commonly used thermoplastics recyclates intended to be used in thermoplastics piping systems.

This document is intended to support specification writers of product standards within CEN TC 155 in defining the relevant characteristics for thermoplastics recyclates (PVC-U, PVC-C, PE, PP, and ABS) to be specified in the relevant product standards for use in thermoplastics piping systems. The product standards should specify relevant characteristics and applicable tolerances to be included within the agreed specification. For a specific application, specification writers may specify additional characteristics.

This document introduces the Cracked Round Bar (CRB) test for slow crack growth resistance of recycled PE, PP and PVC-U material.

This document is extended, compared with the CEN/TS 14541:2013, and covers next to PE, PP and PVC-U also PVC-C and ABS.

This document is not intended as a standalone specification for use of recyclates in plastic piping systems.

Different CEN Technical Committees are dealing with recycled Plastics. In particular CEN/TC 249 "Plastics". CEN/TC 249 "Plastics" developed a series of CEN publications on 'Plastics Recycling' which consists of: EN 15343 [1], EN 15344 [2], EN 15345 [3], EN 15346 [4], CEN/TS 16010 [5] and CEN/TS 16011 [6].

Other documents touching recycling are e.g. ISO 15270 [7] and Waste Framework Directive [8].

1 Scope

This document provides guidance and information for drafting product standards to specify characteristics and test methods for the utilization of thermoplastics recyclates (PVC-U, PVC-C, PE, PP, ABS) in pipes, fittings and ancillaries for thermoplastics piping systems.

This document covers recyclates with an agreed specification from all sources.

NOTE 1 This document does not cover characteristics for reworked material.

NOTE 2 This document does not cover recycling processes (e.g. chemical or mechanical).

NOTE 3 This document does not define if recycled material can be used in a specific application. The possible use of recyclates will be defined in the applicable product standard.

This document provides guidance about the relevant characteristics to be included in the agreed specification for recyclates.

This document is applicable without prejudice to any existing legislation.

For the recycling process, the transport, the testing and the use of thermoplastics recyclates, National and/or European regulations (e.g. hygienic aspects) can apply.

NOTE 4 For example, threshold levels for substances of very high concern (SVHC) as defined in the REACH-legislation which can possibly be present in thermoplastic recyclates.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 14541-1, *Plastics pipes and fittings - Utilisation of thermoplastics recyclates - Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14541-1 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>