

ICS 13.160

English Version

Materials obtained from End-of-Life Tyres - Granulated rubber - Determination of textile fiber content by visual index (qualitative method)

Matériaux produits à partir de pneus usagés non réutilisables (PUNR) - Granulats de caoutchouc - Détermination de la teneur en fibres textiles par indice visuel (méthode qualitative)

Materialien aus Altreifen - Gummigranulat - Bestimmung des Textilfasergehalts durch visuellen Index (qualitative Methode)

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European foreword

This document (CEN/TR 17509:2020) has been prepared by Technical Committee CEN/TC 366 “Materials obtained from End-of-Life Tyres (ELT)”, the secretariat of which is held by UNI.

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Introduction

During the production of materials obtained from end-of-life tires (ELTs), maintenance of quality levels is based on the control of characteristics such as particle size distribution, steel and textile content. Particularly important is this last parameter. Its determination can be based on the method described in the EN 14243 series, but this test exhibits difficulties when the textile content is high and part of the fibres are bound to the rubber.

For this reason, for granulates there is a need to define an alternative approach capable of characterizing the content of textile fibres, free and bounded. This characterization is especially useful as a quick control that detects quality deviations during the production process and for the acceptance of the materials by consumers.

1 Scope

The purpose of this document is to provide information about a procedure based on the determination of a visual index correlated with the content of textile fibres, which are free and bounded to the rubber, of granulates. This approach is currently used by Spanish grinders in order to control the efficiency of their processes and is effective for granulates with particle sizes the bottom limit of which is more than 0,5 mm, and upper limit less than 10 mm.

NOTE Part of this document is also the presentation of a study carried by Valoriza Servicios Medioambientales and Geneus Canarias S.L.

A test procedure for the determination of a visual index of the content of the textile fibre of a granulate sample, which is free and bounded to the rubber, from the ELT's processing is described in UNE 53936:2015 *EX: Materials produced from end of life tyres. Rubber granulates.*

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 14243-1:2019, *Materials obtained from end of life tyres - Part 1: General definitions related to the methods for determining their dimension(s) and impurities*

3 Terms and definitions

For the purposes of this document, terms and definitions given in EN 14243-1:2019 and the following apply.

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

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

3.1

bounded textile

textile fraction on the granulate, that is bounded to the rubber and that cannot be separated without pulling rubber particles with it

3.2

visual index

conventional value, expressed in %, that correlates with the content of textile in a sample of granulate and is obtained through a mechanical device and the visual control of an operator

Note 1 to entry: 0 % index means absence of textile, 100 % a presence of textile in all the parts of the device of control.

4 Principle

The determination of textile fibres, which are free and bounded to the rubber, of an ELT sample of granulates, is based on the calculation of a visual index.

The underlying method is based on the recount of textile particles detectable to the naked eye in a sample distributed over the surface of a tray. To make the calculation easy, a grid template is placed over each sample.