

English Version

**Materials obtained from end of life tyres - Quality criteria  
for the selection of whole tyres, for recovery and recycling  
processes**

Matériaux issus de pneumatiques en fin de vie -  
Critères qualitatifs de sélection de pneumatiques  
entiers pour des procédés de récupération et de  
recyclage

Materialien aus Altreifen - Qualitätskriterien für die  
Auswahl von ganzen Reifen für Verwertung und  
Recycling-Prozesse

This Technical Specification (CEN/TS) was approved by CEN on 2 January 2017 for provisional application.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## European foreword

This document (CEN/TS 17045:2017) has been prepared by Technical Committee CEN/TC 366 “Materials obtained from end of life tyres”, the secretariat of which is held by UNI.

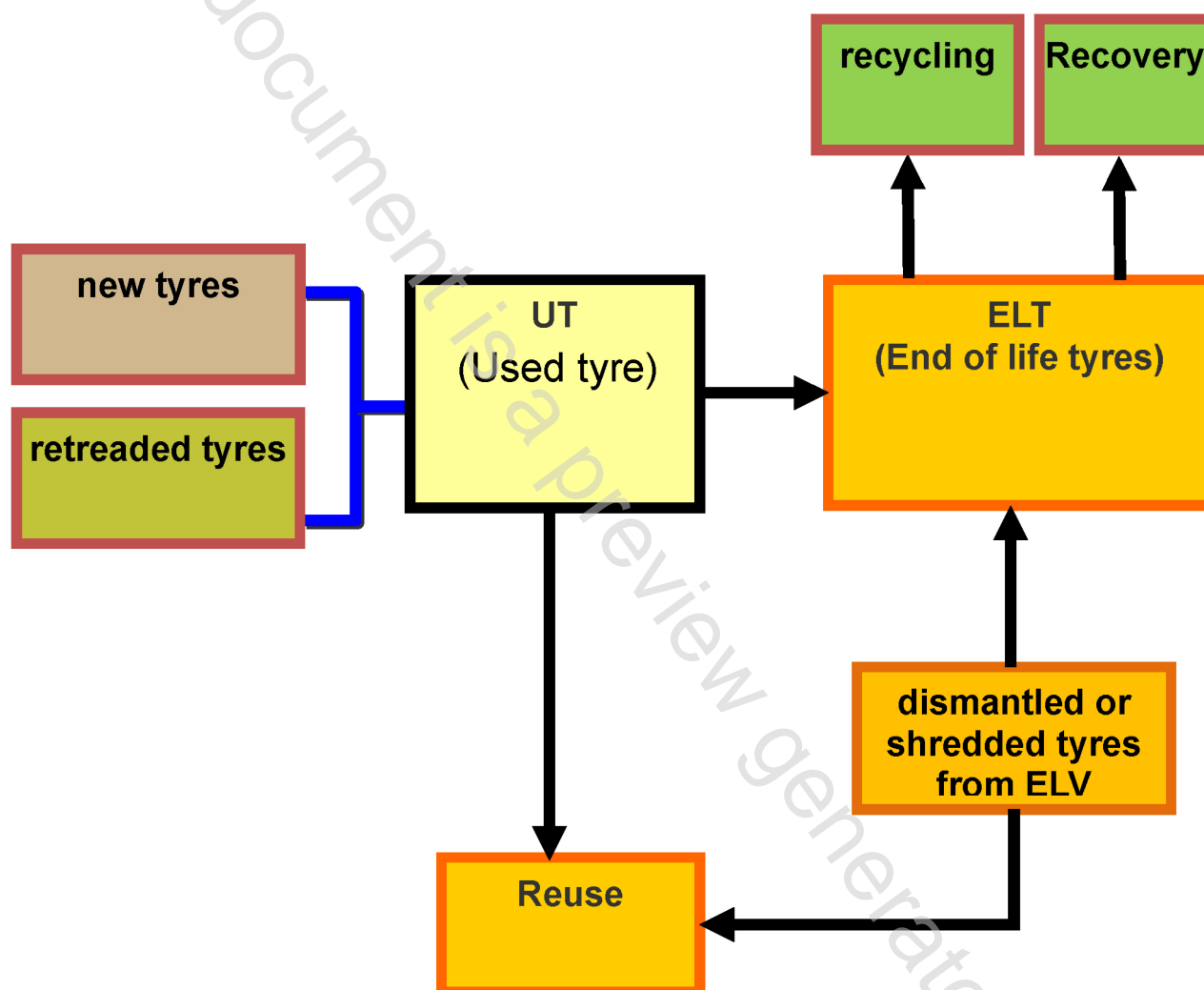
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## Introduction

The purpose of this document is to establish general and specific criteria for the use of whole tyres in recycling processes and in material recovery into different applications, mainly in the field of civil engineering.

This document does not provide any criteria to select whole tyres to be reused in their original application, i.e. to be mounted on a vehicle. See Figure 1 for an overview of the whole process.



**Figure 1 — General scheme of the process to generate end of life tyres and their final processing**

The criteria established in this document focus on determining the conditions under which a whole end of life tyre (WELT) can be used for materials recovery.

From a legal point of view, in Europe, end of life tyres are considered as waste, listed in the European Waste Catalogue with code 16.01.03, tyres removed from vehicles.

The criteria for establishing when ELT cease to be waste are ultimately drafted in the EU legislation, by the relevant Directives and their further adoption into national regulations.

The purpose of this document is to facilitate those who make the decision to establish the end of the waste status. This document also aims to overcome the limitations to the use of WELT in certain

applications and to clarify the conditions under which they can be used for recycling or recovery process in compliance with all conditions ensuring no negative impact to health and environment.

The document aims to increase consumer confidence in the applications of used tyres and facilitate the development of the market by the introduction of a specific set of parameters to ensure the quality and consistency of whole tyres to be used for both in recycling and recovery applications.

Compliance with the criteria set in this standard, results in the protection to the human health and the environment.

**WARNING — This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.**

## 1 Scope

This European Standard provides criteria for the selection of whole end-of-life tyres (WELT) under different classes based on their size. It also provides criteria for determination of their suitability to be used in recycling and material recovery processes.

The processes described in this document include sorting of WELT in order to determine their acceptance in recovery and recycling processes.

Criteria regarding the reuse of tyres to be mounted again in a vehicle are not addressed in this document.

This document does not cover the operational performance of the applications or the requirements of the materials for certain applications, which are usually agreed between the manufacturer and the customer.

Solid tyres are excluded from the scope of this document.

## 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 4223-1, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

ISO 18604:2013, *Packaging and the environment — Material recycling*

ISO 4000-1, *Passenger car tyres and rims — Part 1: Tyres (metric series)*

## 3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 4223-1 and the following apply.

### 3.1 aspect ratio

**AA**  
number obtained by dividing the number expressing the nominal section height in mm by the number expressing the nominal section width in mm

### 3.2 bead

part of a tyre which is of such shape and structure as to fit the rim and hold the tyre on it

### 3.3 designated applications

collective term for the final use to which tyre-derived rubber material is put within the designated market sector

### 3.4 inner diameter

**RR**  
represents the dimension of the rim on which the tyre is mounted, usually expressed in inches