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Wood-plastics composites (WPC) - Part 3: Characterisation of WPC products

Composites bois-plastiques (WPC) - Partie 3 : Caractérisation des produits en WPC

Holz-Polymer-Werkstoffe (WPC) - Teil 3: Beschreibung von WPC- Erzeugnissen

This Technical Specification (CEN/TS) was approved by CEN on 29 December 2006 for provisional application.

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Foreword

This document (CEN/TS 15534-3:2007) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

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

CEN/TS 15534 consists of the following parts, under the general title *Wood plastics composites (WPC):*

— *Part 1: Test methods for characterisation of WPC materials and products*

— *Part 2: Characterisation of WPC materials*

— *Part 3: Characterisation of WPC products*

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

1 Scope

This Technical Specification identifies the required and optional properties of wood-plastics composite (WPC) products. It is intended to be used as a basis for the specifications of WPC products.

This part is applicable to WPC products intended to be used as decking and siding.

NOTE Other applications may be covered when this document will be revised.

2 Normative references

The following referenced documents are indispensable for the application 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 310, *Wood based panels — Determination of modulus of elasticity in bending and of bending strength*

EN 317, *Particleboards and fibreboards — Determination of swelling in thickness after immersion in water*

EN 318, *Wood-based panels — Determination of dimensional changes associated with changes in relative humidity*

EN 321, *Wood based panels — Determination of moisture resistance under cyclic test conditions*

EN 477, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Determination of the resistance to impact of main profiles by falling mass*

EN 479, *Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors — Determination of heat reversion*

EN 789:2004, *Timber structures — Test methods — Determination of mechanical properties of wood based panels*

EN 927-6, *Paints and varnishes — Coating materials and coating systems for exterior wood — Part 6: Exposure of wood coatings to artificial weathering using fluorescent UV lamps and water*

ENV 1156, *Wood-based panels — Determination of duration of load and creep factors*

EN 1383, *Timber structures — Test methods — Pull through resistance of timber fasteners*

EN 13446, *Wood-based panels — Determination of withdrawal capacity of fasteners*

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 13893, *Resilient, laminate and textile floor coverings — Measurement of dynamic coefficient of friction on dry floor surfaces*

CEN/TS 15534-1:2007, *Wood-plastics composites (WPC) — Part 1: Test methods for characterisation of WPC materials and products*

CEN/TS 15534-2, *Wood-plastics composites (WPC) — Part 2: Characterisation of WPC materials*

EN ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test (ISO 179-1:2000)*

EN ISO 877, *Plastics — Methods for exposure to direct weathering, to weathering using glass-filtered daylight, and to intensified weathering by daylight using Fresnel mirrors (ISO 877:1994)*

EN ISO 2813, *Paints and varnishes -- Determination of specular gloss of non-metallic paint films at 20 degrees, 60 degrees and 85 degrees (ISO 2813:1994, including Technical Corrigendum 1:1997)*

EN ISO 4628-6, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 6: Assessment of degree of chalking by tape method (ISO 4628-6:2006)*

EN ISO 4892-2, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 6603-2, *Plastics — Determination of puncture impact behaviour of rigid plastics — Part 2: Instrumented puncture test (ISO 6603-2:2000)*

EN ISO 9142:2003, *Adhesives — Guide to the selection of standard laboratory ageing conditions for testing bonded joints (ISO 9142:2003)*

EN ISO 9239-1, *Reaction to fire tests for floorings — Part 1: Determination of the burning behaviour using a radiant heat source (ISO 9239-1:2002)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2002)*

ISO 7724-1, *Paints and varnishes — Colorimetry — Part 1: Principles*

ISO 7724-2, *Paints and varnishes — Colorimetry — Part 2: Colour measurement*

ISO 7724-3, *Paints and varnishes — Colorimetry — Part 3: Calculation of colour differences*

3 Characterisation of WPC products

The characteristics of WPC products, given in Table 1, are divided into two types:

— required characteristics needed to characterize all WPC products;

— optional characteristics needed to characterize WPC products according to customer specifications and applications.

These characteristics shall be assessed by using the test methods given in CEN/TS 15534-1.

The resistance against biological agents has to be determined for the WPC materials from which products like WPC decking are manufactured (see CEN/TS 15534-2).

A technical data sheet, giving the characterisation of products shall be provided by the supplier to the purchaser. Examples of technical data templates are given in Annex A. The technical data sheets shall give the tolerances declared by the supplier for each characteristic.

To secure the legal use of the constituents of WPC materials, the supplier shall provide the necessary information, as specified by the purchaser (see CEN/TS 15534-2)