

English Version

Composites made from cellulose-based materials and
thermoplastics (usually called wood-polymer composites
(WPC) or natural fibre composites (NFC)) - Part 5:
Specifications for cladding profiles and tiles

Composites à base de matières cellulosiques et de
thermoplastiques (communément appelés composites
bois-polymères (WPC) ou composites fibres d'origine
naturelle (NFC)) - Partie 5: Spécifications relatives aux
lames et plaques pour bardage et lambris

Verbundwerkstoffe aus cellulosehaltigen Materialien
und Thermoplasten (üblicherweise Holz-Polymer-
Werkstoffe (WPC) oder Naturfaserverbundwerkstoffe
(NFC) genannt) - Teil 5: Anforderungen an Profile und
Formteile für Wandbekleidungen

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents	Page
European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Products characteristics	6
4.1 Reaction to fire	6
4.2 Mechanical properties.....	6
4.2.1 Flexural tensile strength	6
4.2.2 Modulus of elasticity in bending.....	6
4.2.3 Resistance to fixings.....	6
4.2.4 Impact resistance	6
4.2.5 Peel strength (profiles with laminated foil).....	6
4.3 Durability	6
4.3.1 Resistance to artificial weathering.....	6
4.3.2 Moisture resistance	7
4.3.3 Swelling and water absorption	7
4.4 Thermal properties	7
4.4.1 Linear thermal expansion.....	7
4.4.2 Heat reversion (applicable to profiles).....	7
4.4.3 Heat build up.....	7
4.5 General characteristics	7
4.6 Release of dangerous substances (leaching)	7
5 Testing, assessment and sampling methods	8
5.1 Reaction to fire.....	8
5.2 Mechanical properties.....	8
5.2.1 Flexural tensile strength	8
5.2.2 Modulus of elasticity in bending.....	8
5.2.3 Resistance to fixings.....	8
5.2.4 Falling mass impact resistance	8
5.2.5 Peel strength (profiles with laminated foil).....	8
5.3 Durability	9
5.3.1 Resistance to artificial weathering.....	9
5.3.2 Moisture resistance under cyclic conditions	9
5.3.3 Swelling and water absorption	9
5.4 Thermal properties	9
5.4.1 Linear thermal expansion.....	9
5.4.2 Heat reversion (applicable to profiles).....	9
5.4.3 Heat build up.....	9
5.5 Release of dangerous substances (leaching)	9
6 Assessment and verification of constancy of performance - AVCP	10
6.1 General.....	10
6.2 Type testing.....	10
6.2.1 General.....	10
6.2.2 Test samples, testing and compliance criteria	11
6.2.3 Test reports.....	12

6.2.4	Shared other party results	12
6.2.5	Cascading determination of the product type results	13
6.3	Factory production control (FPC)	14
6.3.1	General	14
6.3.2	Requirements.....	14
6.3.3	Product specific requirements	17
6.3.4	Initial inspection of factory and of FPC.....	18
6.3.5	Continuous surveillance of FPC [only for products covered by AVCP system 1+, 1 and 2+]	18
6.3.6	Procedure for modifications.....	19
6.3.7	One-off products, pre-production products (e.g. prototypes) and products produced in very low quantity	19
7	Marking and labelling	20
Annex A (normative)	General characteristics	21
A.1	Appearance	21
A.2	Physical characteristics.....	21
Annex ZA (informative)	Relationship of this European Standard with Regulation (EU) No.305/2011	22
ZA.1	Scope and relevant characteristics	22
ZA.2	System of Assessment and Verification of Constancy of Performance (AVCP)	23
ZA.3	Assignment of AVCP tasks	24
Bibliography	27

European foreword

This document (prEN 15534-5:2019) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. For relationship with EU Regulation, see informative Annex ZA, which is an integral part of this document.

1 Scope

This document specifies the characteristics of cladding profiles and tiles made from cellulose-based materials and thermoplastics, usually called wood-polymer composites (WPC) or natural fibre composites (NFC), for external use.

This document is applicable to extruded profiles but also to tiles manufactured by other plastics processing techniques, e.g. injection moulding.

It is not applicable to support rail profiles, cover strip profiles and fastener devices.

This document also specifies assessment methods, provisions for the assessment and verification of constancy of performance (AVCP) of these products and includes requirements for marking.

Reprocessed and/or recycled materials can be used for manufacturing the components which comply with the requirements of this part of EN 15534.

NOTE 1 WPC materials are recyclable materials which can be treated in a material recovery process intended to save resources while minimizing harmful emissions into air, water and soil as well as their impacts on human health.

NOTE 2 A scheme for the characterization of plastics waste is given in EN 15347 and guidelines for the recovery and recycling are given in ISO 15270.

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 15534-1:2014+A1:2017, *Composites made from cellulose-based materials and thermoplastics (usually called wood-polymer composites (WPC) or natural fibre composites (NFC)) - Part 1: Test methods for characterisation of compounds and products*

EN 16472, *Plastics - Method for artificial accelerated photoageing using medium pressure mercury vapour lamps*

CEN/TS 16637-2:2014, *Construction products - Assessment of release of dangerous substances - Part 2: Horizontal dynamic surface leaching test*

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

EN ISO 4892-3:2016, *Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps (ISO 4892-3:2016)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15534 1:2014+A1:2017 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>

4 Products characteristics

4.1 Reaction to fire

When decided to declare the reaction to fire performance of a WPC/NFC cladding profile or tile shall be expressed as the reaction to fire class, as specified in EN 13501-1, based on results of the test(s), relevant for the claimed class, according to 5.1.

NOTE The reaction to fire indicates the degree of contribution of the material to the behaviour of the construction product in the event of fire.

4.2 Mechanical properties

4.2.1 Flexural tensile strength

When declared, the flexural tensile strength of a WPC/NFC cladding profile or tile shall be evaluated by:

- a) determining the deflection under a load of 250 N according to 5.2.1 and expressed as “compliant” when the mean value of the deflection under a load of 250 N is $\leq 5,0$ mm, and
- b) determining the bending strength according to 5.2.1 and expressed as the value of the bending strength in megapascals.

4.2.2 Modulus of elasticity in bending

When declared, the modulus of elasticity in bending of a WPC/NFC cladding profile or tile shall be evaluated according to 5.2.2 and expressed as value in megapascals.

4.2.3 Resistance to fixings

When declared, the resistance to fixings of a WPC/NFC cladding profile or WPC/NFC tile shall be evaluated by:

- a) determining the withdrawal capacity of nails and screws in accordance with 5.2.3.1, and expressed as the value of the withdrawal parameter, in newtons per square millimetre, and
- b) determining the pull through resistance in accordance with 5.2.3.2 and expressed as the value of the pull through parameter, in newtons per square millimetre.

4.2.4 Impact resistance

When declared, the impact resistance of a WPC/NFC cladding profile or a WPC/NFC tile shall be evaluated by determining the falling mass impact resistance in accordance with 5.2.4 and expressed as “compliant” when no more than one test specimen out of 10 test specimens shows a failure.

4.2.5 Peel strength (profiles with laminated foil)

When declared, the peel strength of a WPC/NFC cladding profile or WPC/NFC tile shall be evaluated according to 5.2.5 and expressed in Newtons per millimetre (N/mm) or if the foil breaks, the tensile strength at break of the foil in Newtons (N) or as the peeled length in millimetres (mm).

4.3 Durability

4.3.1 Resistance to artificial weathering

When declared, the resistance of a WPC/NFC cladding profile or a WPC/NFC tile to artificial weathering shall be evaluated in accordance with 5.3.1, and expressed as the value of ΔL^* , Δa^* , Δb^* and the appearance criteria.