„MEŽA UN KOKSNES PRODUKTU PĒTNIECĪBAS UN ATTĪSTĪBAS INSTITŪTS" SIA
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EN ISO/IEC 17025
T-316

Extended application classification of reaction to fire in accordance with EN 13501-1:2018

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Sponsor: Teknos Norge AS.

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VAT No. NO961644739MVA.

Manufacturer and owner of classification report: Teknos Norge AS.

Prepared by: SIA "Meža un koksnes produktu pētniecības un attīstības institūts" *(Forest and Wood Products Research and Development Institute Ltd).*

Test performed at: SIA "Meža un koksnes produktu pētniecības un attīstības institūts" *(Forest and Wood Products Research and Development Institute Ltd).*

Product name: Spruce and pine wood cladding

Laboratory involved in testing is accredited by the Latvian National Accreditation Bureau (LATAK) according to the standard LVS EN ISO/IEC 17025 under the terms of Latvian legislation with reg. No. T-316. Laboratory is a notified body with reg. No. NB 2040 under construction product regulation No. 305/2011.

1. Introduction

This classification report defines the reaction to fire classification assigned to spruce and pine wood cladding in accordance with the procedures given in EN 13501-1:2018.

2. Details of classified product

2.1. General

Spruce and pine wood cladding is defined as solid wood cladding. Product is described by product standard EN 14915:2013+A2:2020.

2.2. Product description

- Product name: Spruce and pine wood cladding.
- Manufacturer: Teknos Norge AS.
- Materials used for manufacturing:
  - non-impregnated and with Cu impregnated pine and spruce wood with dimensions 19x148 mm;
- Density: > 400 kg/m^3.
- Nominal thickness tested: 19 mm.
- Coating systems tested for extended application:
  - Primed and painted spruce cladding, achieved with Teknol 3881 ≤100 g/m^2 and Nordica Eko 3330 ≤130 g/m^2;
  - Primed and painted spruce cladding, achieved with Teknol 1888 ≤100 g/m^2 and Nordica Eko 3894 ≤130 g/m^2;
  - Primed and painted spruce cladding, achieved with Teknol 1888 ≤100 g/m^2 and Nordica Eko 3330 ≤130 g/m^2;
  - Primed and painted spruce cladding, achieved with Teknol 2881 ≤100 g/m^2 and Nordica Eko 3330 ≤130 g/m^2;
  - Primed and painted spruce cladding, achieved with two layers of Teknol 3881 total amount ≤ 300 g/m^2;
  - Primed and painted spruce cladding, achieved with two layers of Teknoclad 3371 total amount ≤ 200 g/m^2 and backside with Teknoclad 3371 ≤50 g/m^2;
  - Primed and painted spruce cladding, achieved with Drywood Woodstain VV ≤120 g/m^2 and Drywood Woodstain VV ≤90 g/m^2 and backside with Drywood Woodstain VV ≤190 g/m^2;
  - Primed with rot protection and intermediate coats spruce cladding, achieved with Aqua primer 2907-42 ≤175 g/m^2 and Nordica Eko 3894 ≤175 g/m^2;
  - Primed with rot protection and intermediate coats spruce cladding, achieved with Teknol Aqua 1410 ≤50 g/m^2, Teknol 3881 ≤175 g/m^2 and Nordica Eko 3330 ≤175 g/m^2;
  - Primed with rot protection and intermediate coats spruce cladding, achieved with Aqua primer 2907-42 ≤175 g/m^2 and Nordica Eko 3330 ≤175 g/m^2.
  - Primed solid wood cladding, achieved with CU impregnation and primed with opaque Teknol 3881 ≤120 g/m^2 wet;
  - Primed and painted solid wood cladding, achieved with CU impregnation and primed with opaque Teknol 3881 ≤120 g/m^2 wet and opaque Teknol 3881 ≤120 g/m^2;
  - Primed solid wood cladding, primed with opaque Teknol 3890 ≤120 g/m^2 wet;
  - Primed solid wood cladding, primed with opaque Teknol 3881 ≤120 g/m^2 wet;
  - Primed solid wood cladding, achieved with transparent primer Teknol 1888 ≤100 g/m^2 wet;
  - Primed solid wood cladding, achieved with transparent primer Teknol 1830 ≤100 g/m^2 wet;
  - Primed and painted solid wood cladding, achieved with transparent primer Teknol 1830 ≤100 g/m^2 wet and transparent Nordica Eko 3894≤150 g/m^2;
  - Stained solid wood cladding, achieved with Teknos Teknoshield 4005 ≤90 g/m^2 wet;
  - Primed solid wood cladding, achieved with Teknos Aqua primer 2907-02 ≤100 g/m^2 wet;
  - Primed and painted solid wood cladding, achieved with Teknos Aqua primer 2907-02 ≤100 g/m^2 wet and Teknos Nordica Eko 3330≤125 g/m^2 wet;
  - Primed solid wood cladding, achieved with Teknos Aqua primer 2907-42 ≤125 g/m^2 wet;
  - Primed and painted solid wood cladding, achieved with Teknos Aqua primer 2907-42 ≤125 g/m^2 wet and Teknos Nordica Eko 3894 ≤125 g/m^2 wet.

3. Test reports and test results in support of classification

3.1. Specific conditions

Not applicable

3.2. Test reports

Name of laboratory	Name of sponsor	Test reports	Test method
SIA „ Meža un koksnes produktu pētniecības un attīstības institūts" Testing Laboratory	Teknos Norge AS	5409-1/2021	EN 13823:2020
SIA „ Meža un koksnes produktu pētniecības un attīstības institūts" Testing Laboratory	Teknos Norge AS	5409-2/2021	EN ISO 11925-2:2020
SIA „ Meža un koksnes produktu pētniecības un attīstības institūts" Testing Laboratory	Teknos Norge AS	5480-1/2021	EN 13823:2020
SIA „ Meža un koksnes produktu pētniecības un attīstības institūts" Testing Laboratory	Teknos Norge AS	5480-2/2021	EN ISO 11925-2:2020

3.3. Test results

Test method	Parameter	Number of tests	Results	
			Continuous parameter mean	Compliance parameters
EN 13823:2020	$FIGRA_{0,2MJ}$(W/s)	3[a] 3[b]	702.2[a] 689.5[b]	(-)
	$FIGRA_{0,4MJ}$(W/s)	24[d]	702.2[a] 689.5[b]	(-)
	THR_{600s}(MJ)		16.3[a] 17.9[b]	(-)
	LFS		(-)	Compliant
	SMOGRA(m^2/s^2)		2.6[a] 3.0[b]	
	TSP_{600s}(m^2)		(11.7)[c] 26.6[a] 33.5[b]	(-)
			(86.8)[c]	(-)
	Flaming droplets <10s		(-)	Compliant
	Flaming droplets >10s		(-)	Compliant
EN ISO 11925-2:2020 Exposure time 30 s. Test duration 60 s.	Flame spread (Fs)	12 138[d]	(-)	Compliant
	Ignition of filter paper		(-)	Compliant
	Flaming droplets/particles		(-)	Compliant

(-) not applicable

[a] Results from primed and painted spruce cladding product worst case scenario (5480-1-3, 5480-1-12, 5480-1-15).

[b] Results from primed with rot protection and intermediate coat cladding product worst case scenario (5480-1-9, 5480-1-13, 5480-1-16)

[c] Test results from product variation No. 5409-1-8 with worst case scenario for smoke index classification.

[d] Additional tests results for extended application.

Test results for specimens with additional coatings

Specimen No.	5409-1-1	5409-1-2	5409-1-3	5409-1-4	5409-1-5	5409-1-6	5409-1-7	5409-1-8	5409-1-9	5409-1-10
$FIGRA_{0,2MJ}$, W/s	528.3	623.8	673.8	611.2	560.8	438.9	567.8	706.2	704.6	529.5
$FIGRA_{0,4MJ}$, W/s	528.3	623.8	673.8	611.2	560.8	438.9	567.8	706.2	704.6	529.5
THR_{600s}, MJ	24.3	13.5	16.7	12.9	13.5	16.1	26.2	24.5	26.6	14.1
SMOGRA, m^2/s^2	10.8	1.9	2.4	3.0	3.8	3.9	13.1	11.7	11.2	6.6
TSP_{600s}, m^2	67.4	37.1	38.9	31.9	32.1	49.7	56.2	86.8	76.9	55.8
Specimen No.	5409-1-11	5409-1-13	5409-1-15	5409-1-16	5409-1-17	5409-1-18				
$FIGRA_{0,2MJ}$, W/s	555.9	635.1	462.9	639.9	721.1	652.8				
$FIGRA_{0,4MJ}$, W/s	555.9	635.1	462.9	639.9	721.1	652.8				
THR_{600s}, MJ	13.5	14.0	15.0	14.4	13.9	14.0				
SMOGRA, m^2/s^2	2.5	3.6	1.8	6.3	2.1	2.3				
TSP_{600s}, m^2	30.6	44.8	37.7	55.4	35.0	35.2				
Specimen No.	5480-1-1	5480-1-2	5480-1-4	5480-1-5	5480-1-6	5480-1-7	5480-1-8	5480-1-10		
$FIGRA_{0,2MJ}$, W/s	587.5	725.3	630.3	700.2	462.7	507.3	588.0	704.6		
$FIGRA_{0,4MJ}$, W/s	587.5	725.3	630.3	700.2	462.7	507.3	588.0	704.6		
THR_{600s}, MJ	17.1	16.9	15.8	15.3	14.2	13	14.4	16.6		
SMOGRA, m^2/s^2	2.4	3.3	2.1	3.3	3.0	1.5	1.9	2.2		
TSP_{600s}, m^2	24.1	20.4	27.3	27.6	31.9	28.3	22.9	25.8		

Specimens identification

Identification number	Wood species and area of use	Primer name and consumption	Intermediate coating name and consumption	Top coating name and consumption
5409-1-1	Stained pine	Teknoshield 4005, 85-90 g/m²	-	
5409-1-2	Primed with rot protection spruce cladding	Aqua 2907-02, 100 g/m²	-	
5409-1-3	Primed with rot protection and coated spruce cladding	Aqua 2907-02, 100 g/m²	Nordica Eko 3330-12, 125 g/m²	
5409-1-4	Primed with rot protection spruce cladding	Aqua 2907-42, 125 g/m²	-	
5409-1-5	Primed with rot protection and coated spruce cladding	Aqua 2907-42, 125 g/m²	Nordica Eko 3894, 125 g/m²	
5409-1-6	Untreated spruce cladding	-	-	
5409-1-7	CU impregnated pine cladding	-	-	
5409-1-8	Primed CU impregnated pine cladding	Teknol 3881, 120 g/m²		
5409-1-9	Primed and painted CU impregnated pine	Teknol 3881, 120 g/m²	Teknol 3881, 120 g/m²	
5409-1-10	Primed spruce cladding	Teknol 3890, 120 g/m²	-	
5409-1-11	Primed spruce cladding	Teknol 3881, 120 g/m²	-	
5409-1-13	Primed spruce cladding	Teknol 1888, 100 g/m²	-	
5409-1-15	Primed spruce cladding	Teknol 1830 Base T, 100 g/m²	-	
5409-1-16…5409-1-18	Primed and painted spruce cladding	Teknol 1830 Base T, 100 g/m²	Nordica Eko 3894, 150 g/m²	
5480-1-1	Primed and painted spruce cladding	Teknol 3881, 100 g/m²	Nordica Eko 3330, 130 g/m²	-
5480-1-2	Primed and painted spruce cladding	Teknol 1888, 100 g/m²	Nordica Eko 3894, 130 g/m²	-
5480-1-3, 5480-1-12, 5480-1-15	Primed and painted spruce cladding	Teknol 1888, 100 g/m²	Nordica Eko 3330, 130 g/m²	-
5480-1-4	Primed and painted spruce cladding	Teknol 2881, 100 g/m²	Nordica Eko 3330, 130 g/m²	-
5480-1-5	Primed and painted spruce cladding	Teknol 3881, 150 g/m²	Teknol 3881, 150 g/m²	-
5480-1-6	Primed and painted spruce cladding	Teknoclad 3371, 100 g/m²	-	Teknoclad 3371, 100 g/m²
5480-1-7	Primed and painted spruce cladding	Drywood Woodstain VV, 120 g/m²	-	Drywood Woodstain VV, 90 g/m²
5480-1-8	Primed with rot protection and intermediate coat	Aqua primer 2907-42, 175 g/m²	-	Nordica Eko 3894, 175 g/m²
5480-1-9, 5480-1-13, 5480-1-16	Primed with rot protection and intermediate coat	Teknol Aqua 1410, 50 g/m²	Teknol 3881, 175 g/m²	Nordica Eko 3330, 175 g/m²
5480-1-10	Primed with rot protection and intermediate coat	Aqua primer 2907-42, 175 g/m²	-	Nordica Eko 3330, 175 g/m²

4. Classification and field of application

4.1. Reference of classification

This classification has been carried out in accordance with clause 11 of EN 13501-1:2018.

4.2. Classification

Spruce and pine wood cladding in relation to its reaction to fire behaviour is classified:

D

The additional classification in relation to smoke production is:

s2

The additional classification in relation to flaming droplets/particles is:

d0

The format of the reaction to fire classification for construction product excluding floorings and linings is:

Fire behaviour		**Smoke production**			**Flaming droplets**	
D	-	s	2	,	d	0

Reaction to fire classification: D-s2, d0

4.3. Field of application

4.3.1 This classification is valid for the following product end use applications:

Product primary is intended to use as solid wood cladding.

4.3.2. This classification is also valid for following product parameters:

- valid for thickness 19 mm and larger thicknesses;
- valid for non-impregnated and with CU impregnated spruce and pine wood;
- valid for wood density ≥ 400 kg/m^3;
- valid with coating systems as tested;
- mounted with ventilated or non-ventilated air gap to substrate of any A1 or A2-s1,d0 and with the air gap constructed by wooden battens of class D-s2,d0 or better or any A1 or A2-s1,d0 product with a minimum density of 525 kg/m^3;
- valid for product mounting with air gap between product and substrate. Valid also for product mounting on substrates without air gap;
- valid for product application with standard vertical and horizontal joints;
- valid for vertical and horizontal arrangements.

5. Limitations.

5.1. No restrictions on the duration of validity of this classification report as long as the product specifications remain unchanged.
5.2. This document does not represent type approval or certification of the product.
5.3. The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 attestation of conformity and CE marking under the Construction Products Regulation.
The manufacturer has made a declaration, which is held on file. This confirms that the product's design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate.
The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested.

Prepared by

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