

Reaction to fire testing of Spruce wood with a white primer Floor Radiant Panel test according to EN ISO 9239-1:2010

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1. PRODUCT IDENTIFICATION

Spruce wood with a white primer, further referred to as 'the product'.

2. ABSTRACT

Determination of the reaction to fire properties of the product, when exposed to the thermal attack by a **Radiant Panel** according to EN ISO 9239-1, with the objective to obtain the reaction to fire classification according to EN 13501-1:2018.

3. DETAILS OF THE PRODUCT TESTED

3.1 INTENDED APPLICATION

The product will be used as the horizontal parts of a staircase construction.

3.2 MANUFACTURER/IMPORTER

Nederlandse Branchevereniging voor de Timmerindustrie
Westeinde 10
1334 BK ALMERE
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3.3 PRODUCT DESCRIPTION

According to the sponsor the product is composed of spruce wood (*Picea abies*).
The tested panels are:

- 37.6 ± 0.4 mm and have a density from 400 kg/m³ to 500 kg/m³;
- Not impregnated;
- Coated with a white primer of reference with Ankocryl Basispaint for stairs S HB, usage 60 µm to 90 µm.

4. DETAILS OF THE EXAMINATION

4.1 SAMPLE

Sampling procedure	The specimens were prepared and submitted by the sponsor.
Age	At the time of receipt: no information received.
Date of receipt	March 23 rd 2022

4.2 SPECIMEN PREPARATION

Preparation	The specimens were prepared by Efectis Nederland
Substrate used	Not applicable
Method of fixing	Not applicable

4.3 CONDITIONING

Prior to the examinations, the specimens were conditioned over a period of two weeks at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) % according to § 4.1 of EN 13238.

4.4 METHOD OF EXAMINATION

Number of tests	A total of 3 Radiant Panel Flooring tests were carried out, all in accordance with EN ISO 9239-1.
Deviations from the test method	None
Harmonised Product Standard	At the time of examination of the product, the sponsor was not aware of a related existing Harmonised Product Standard.

4.5 EXAMINATION

Date of examination	March 19 th and 25 th 2022
Location of examination	Efectis Nederland BV, Bleiswijk, The Netherlands
Performed by	LEG

The results are given in Table 1 of the Appendix: Results.

5. CONCLUSIONS

A formal classification is to be assessed in accordance with EN 13501-1, "Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests".

Graphs of (Critical) Heat Flux, Attenuation (smoke), Smoke density (smoke) are presented hereafter followed by a photograph of the samples tested.

Remarks:

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



G. van der Lee M.Sc.
Project leader Reaction to Fire



A.J. Lock
Manager Testing Reaction to Fire

APPENDIX: RESULTS

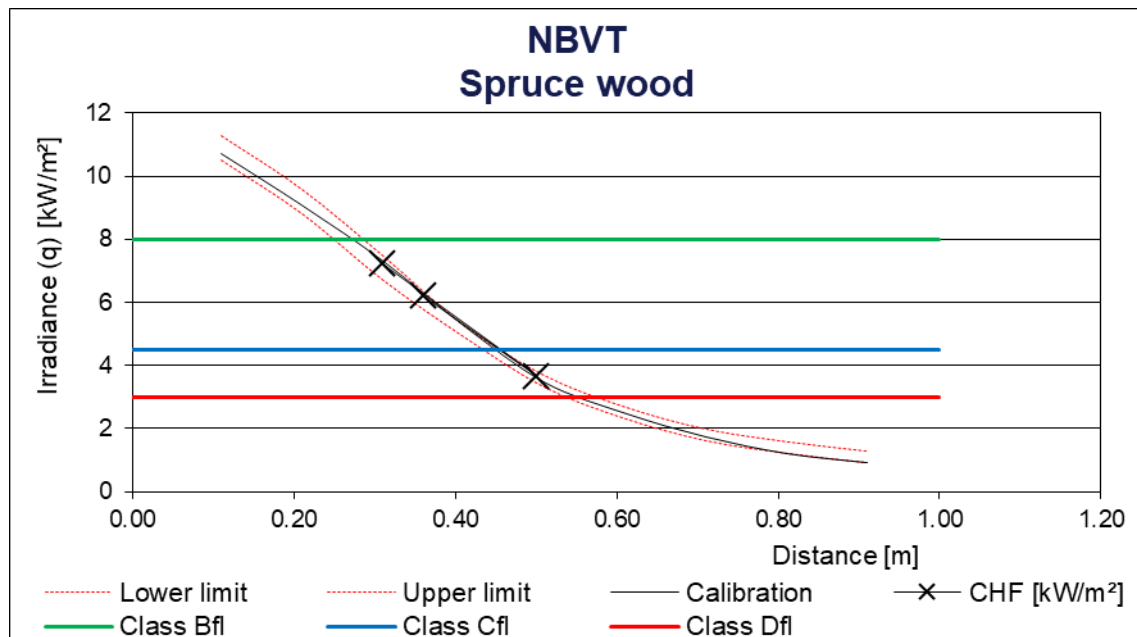
Table 1: Horizontal surface spread of flame, heat flux and light attenuation

Sample number		1	2	3	Classification parameter
Spread of flame					
Distance	[mm]	Time [s]			
	60	153	139	163	
	110	183	210	200	
	160	341	270	347	
	210	443	330	418	
	260	553	425	516	
	310	701	518	653	
	360		639	802	
	410		735		
	460		869		
	510				
	560				
	610				
	660				
	710				
	760				
	810				
	860				
	910				
Maximum spread of flame					
Distance	[mm]	310	500	360	
Flameout	[s]	754	1156	1255	
(Critical) Heat Flux(CHF)					
CHF	[kW/m ²]	7.2	3.7	6.2	5.7
Heat flux (HF) after 10, 20, 30 minutes					
Time	[min]	HF [kW/m ²]			
	10	8.0	<=1.1	8.2	5.4
	20	7.2	3.7	6.2	5.7
	30	7.2	3.7	6.2	5.7
Light attenuation (LA)					
Smoke density	[%.min]	4	11	38	18
Test end	[s]	1800	1800	1800	

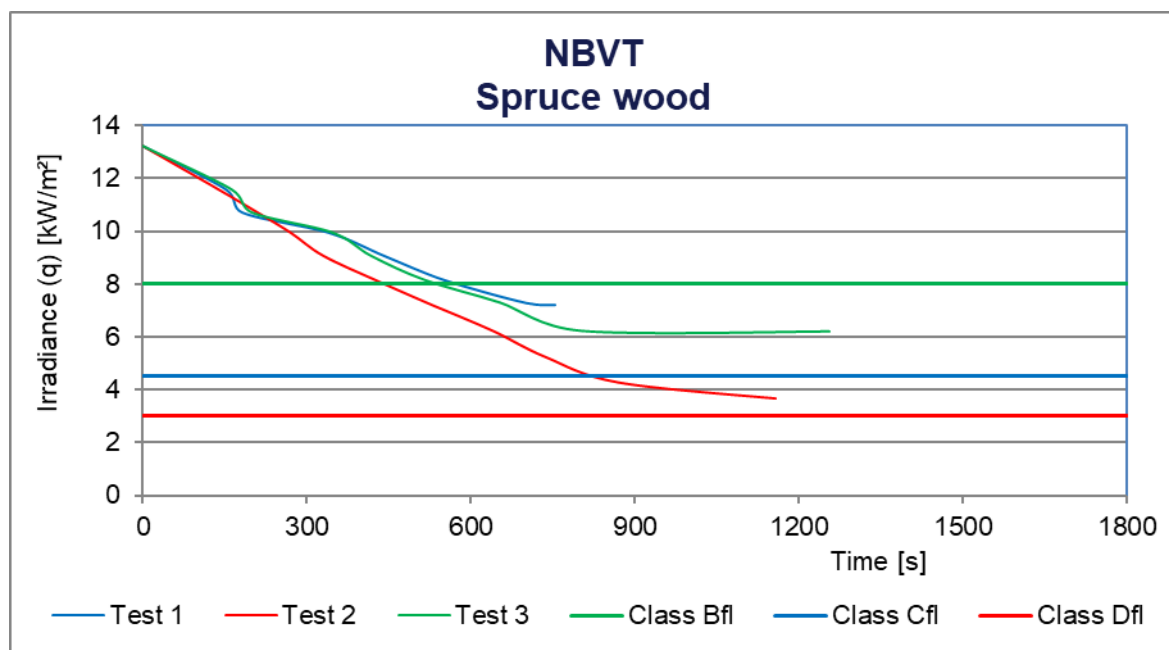
Observations of physical behaviour of the test specimen: None

APPENDIX: GRAPHS

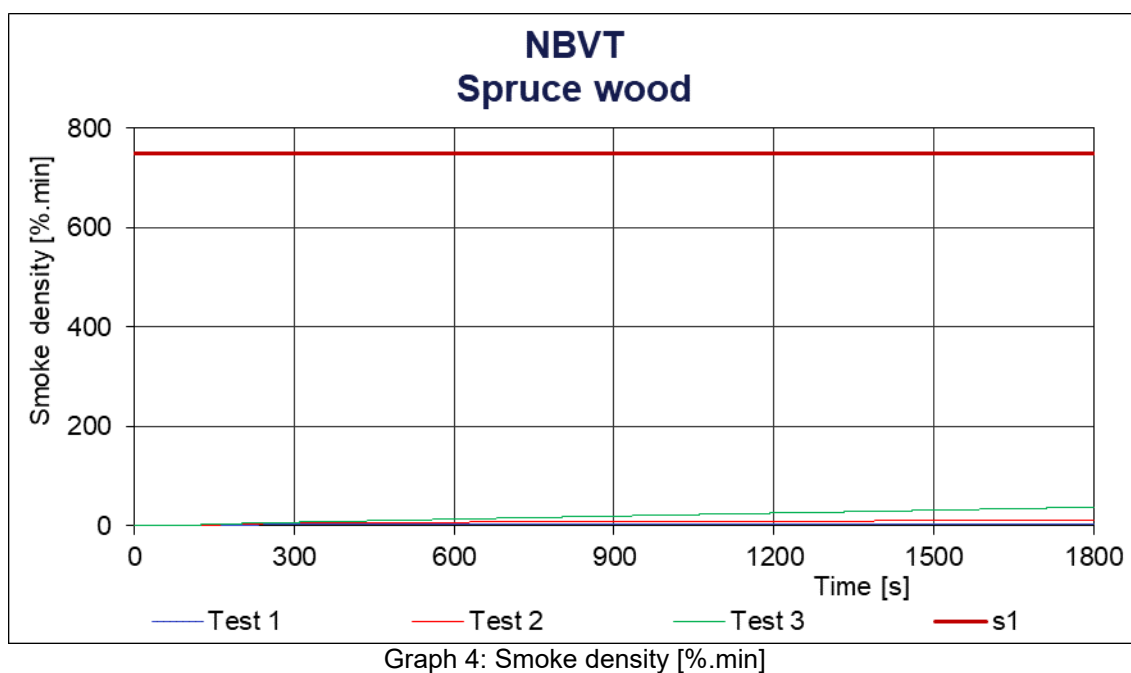
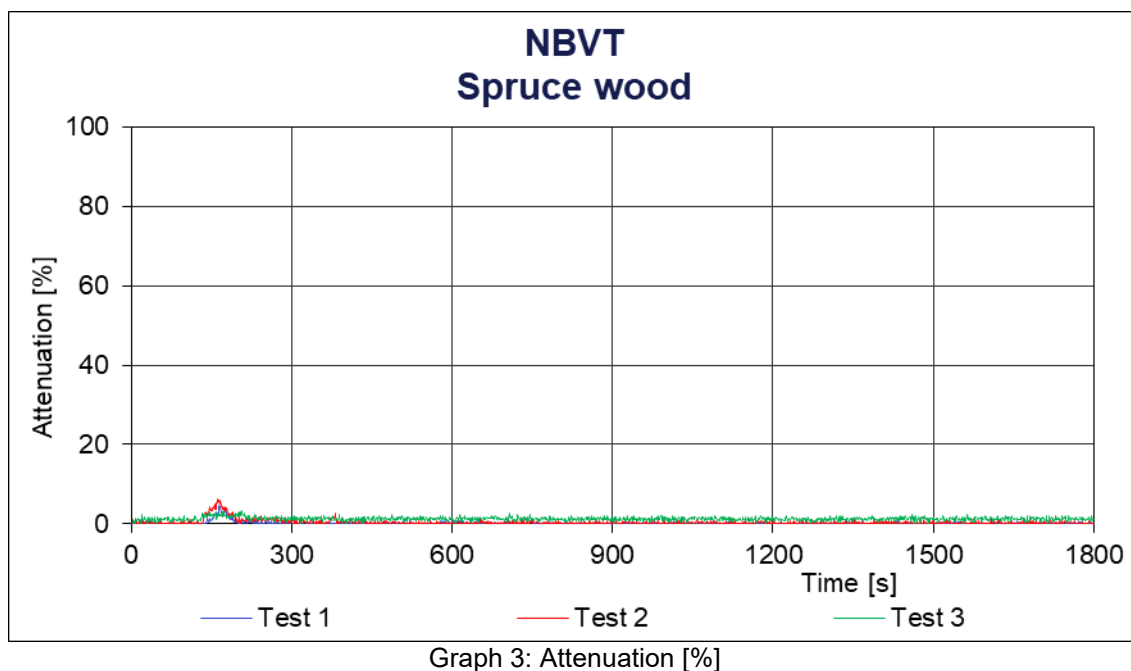
Graph 1: (Critical) Heat Flux, Radiant Panel Flooring Test
Graph 2: Flame spread vs time
Graph 3: Attenuation [%]
Graph 4: Smoke density [%.min]



Graph 1: (Critical) Heat Flux, Radiant Panel Flooring Test



Graph 2: Flame spread vs time



APPENDIX: PHOTOGRAPH



Photograph 1: Specimens after testing