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 Netherlands

Classification of reaction to fire in accordance with EN 13501-1

1 Introduction

This classification report defines the classification assigned to “Yoroi” in accordance with the procedure given in EN 13501-1:2018.

2 Details of classified product

2.1 General

The product “Yoroi” is defined as a façade material/wall covering.

2.2 Product description

The product, “Yoroi”, is fully described below.

According to the client:

Façade material/wall covering called “Yoroi”, consisting of compressed bamboo boards charred in an oven, under controlled conditions of speed, temperature and oxygen, resulting in a carbon layer of at least 1.5 mm.

The product has a nominal density, before heat treatment, of 1050 kg/m³, an area weight of 20.7 kg/m² and a nominal thickness of 18 mm.

3 Reports and results in support of this classification

3.1 Test reports

Table 1 Test report forming the basis for this classification.

Name of laboratory	Name of sponsor	Test report reference no	Accredited test methods and date
RISE	Zwarthout Shou Sugi Ban BV	O100352-145239	EN 13823:2020 and EN ISO 11925-2:2020

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3.2 Test results

Table 2 Test results showing the worst case as found in the test program performed.

Test method	Parameter	Number of tests	Results	
			Continuous parameter mean (m)	Compliance with parameters
EN ISO 11925-2		12		
Edge/Surface flame attack*				
30 s exposure	$F_s \leq 150$ mm		(-)	Compliant
Flaming droplets/particles	Ignition of filter paper		(-)	No ignition of filter paper
EN 13823		5		
	$FIGRA_{0,2MJ}$ (W/s)		41	Compliant
	$FIGRA_{0,4MJ}$ (W/s)		31	Compliant
	$LFS < \text{edge}$		(-)	Compliant
	THR_{600s} , (MJ)		4.5	Compliant
	$SMOGRA$, (m^2/s^2)		0	Compliant
	TSP_{600s} , (m^2)		14	Compliant
	Flaming droplets/particles		(-)	No flaming droplets/particles

* as required to the end use application of the product
(-) not applicable

4 Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 11 and 15 of EN 13501-1:2018.

4.2 Classification

The product called "Yoroi" in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

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

d0

The format of the reaction to fire classification for construction products excluding floorings and linear pipe thermal insulation product is:

Fire Behaviour	Smoke Production			Flaming Droplets	
B	-	s	1	,	d 0

Reaction to fire classification: *B-s1,d0*

4.3 Field of application:

This classification is valid for the following product parameters:

- Product description, as specified in 2.2 in this report
- Nominal thickness: 18 mm.
- Nominal density: 1050 kg/m³

This classification is valid for the following end use conditions:

- Substrates
 - Wood based substrates at least 10 mm thick and any end use substrate of Euroclasses A1 or A2-s1,d0 at least 9 mm thick, having a density $\geq 510 \text{ kg/m}^3$
- Fixings
 - Mechanically fixed.
- Joints
 - Horizontal and vertical joints.
- Void
 - Wood scantlings creating a void from $\geq 22 \text{ mm}$.

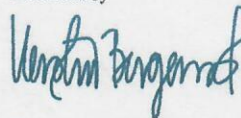
The sample was delivered by the client. RISE, Fire Technology was not involved in the sampling procedure.

5 Limitations

This classification document does not represent type approval or certification of the product.

RISE Research Institutes of Sweden AB
Department Fire Technology - Reaction to Fire Medium Scale Lab

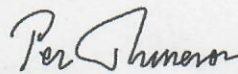
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