

BUTONG AB  
Kvarnbacksvägen 10  
168 74 BROMMA

## Non-combustibility according to EN ISO 1182

(2 appendices)

### Introduction

RISE has by request of BUTONG AB performed a fire test according to EN ISO 1182. The purpose of the test is to form a basis for technical fire classification.

### Product

According to the client: Building material called "Butong pigmented and fibre reinforced Panel" consisting of Ultra High Performance Fibre Reinforced Concrete. The product has a nominal density of 2520 kg/m<sup>3</sup> and a nominal thickness range of 0.1-23 mm. The organic content is 0 % and the colour of the product is orange/red.

### Manufacturer

BUTONG AB, Bromma, Sweden.

### Sampling

The sample was delivered by the client. It is not known to RISE Safety – Fire Research if the product received is representative of the mean production characteristics.

The sample was received on February 13, 2019 at RISE Safety – Fire Research.

### Test results

The test results are given in appendix 1.

The test results relate only 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.

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**Note**

The accreditation referred to is valid for EN ISO 1182.

**RISE Research Institutes of Sweden AB  
Safety - Fire Research Materials**

Performed by

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**Appendices**

1. Test results – EN ISO 1182:2010
2. Calibration results according to EN ISO 1182:2010

## Appendix 1

**Test results – EN ISO 1182:2010****Product**

According to the client: Building material called "Butong pigmented and fibre reinforced Panel" consisting of Ultra High Performance Fibre Reinforced Concrete. The product has a nominal density of 2520 kg/m<sup>3</sup> and a nominal thickness range of 0.1-23 mm. The organic content is 0 % and the colour of the product is orange/red.

**Test results**

The table below shows the maximum temperature rise relative to the final temperature recorded by the furnace thermocouple, duration of sustained flaming and mass loss.

Test specimen No.	Max. temperature rise Furnace (°C)	Duration of sustained flaming (s)	Mass loss (%)
1	3	0*	5.5
2	1	0	5.4
3	1	0	5.6
4	1	0	5.3
5	1	0	5.4
Average	1	0	5.4

\* Short flashes from the specimen (< 5 seconds).

**Measured data**

Thickness 49 – 50 mm.

Density 2335 – 2427 kg/m<sup>3</sup>.

**Conditioning**

Temperature (60 ± 5) °C.

Time (20 – 24) h.

**Date of test**

Test no 1 – 3, March 27, 2019.

Test no 4 – 5, March 28, 2019.

Appendix 2

**Calibration results according to EN ISO 1182:2010**

**Calibration of furnace wall temperature according to EN ISO 1182:2010 part 7.3.1**

The average deviation of the temperature on the three vertical axes from the average furnace wall temperature  $T_{avg.dev.axis}$  shall be less than 0.5 %.

RISE,  $T_{avg.dev.axis} = 0.1 \%$ .

The average deviation of the temperature on the three levels from the average furnace wall temperature  $T_{avg.dev.level}$  shall be less than 1.5 %.

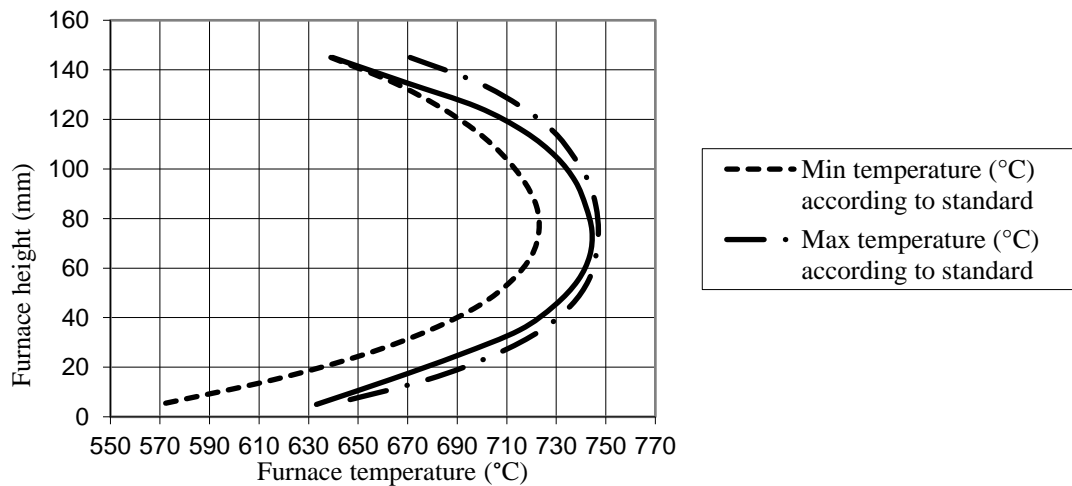
RISE,  $T_{avg.dev.level} = 0.1 \%$ .

The average wall temperature at level (+30 mm)  $T_{avg.level a}$  is less than the average wall temperature at level (-30 mm),  $T_{avg.level c}$ .

RISE,  $T_{avg.level a} = 823 \text{ }^\circ\text{C}$ .

RISE,  $T_{avg.level c} = 826 \text{ }^\circ\text{C}$ .

**Calibration of furnace temperature according to EN ISO 1182:2010 part 7.3.2**



*Furnace temperature profile along its axis measured with Thermal sensor.*