# REPORT

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Reference
8P01249-3



Testing

AB Ludvig Svensson
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## Reaction to fire classification according to EN 45545-2

(1 appendix)

### Introduction

This classification report defines the reaction to fire classification assigned to the product called “Incendo” in accordance with EN 45545-2:2013+A1:2015.

Test reports and test results in support of classification, together with the classification criteria, are presented in appendix 1.

### Product description

According to the client: Roller blind called “Incendo”, consisting of 100 % Trevira CS. The product has a nominal thickness of 0.5 ± 0.1 mm, a nominal area weight of 170 g/m$^2$ and the colour is grey (8400). Detailed product description is filed at RISE.

According to the standard EN 45545-2, table 2, the product is defined as a “Listed Product” to which the following parameters apply:

| | |
|---|---|
| Product No: | IN8 |
| Location: | Interior |
| Description: | Interiors |
| Product name: | Curtains and sunblind in passenger and staff area, staff compartments |
| Requirement Set: | R1 |

### Classification

The product described above, in relation to its reaction to fire behaviour, is classified according to EN 45545-2:2013+A1:2015, Requirement Set R1; Hazard Levels HL1 and HL2.

*Reaction to fire classification: R1; HL1/HL2*

### Field of application

This classification is valid for the following product parameters:

Nominal thickness: 0.5 ± 0.1 mm.

Nominal area weight: 170 g/m$^2$.

## Limitations

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

The sample was delivered by the client. RISE Safety – Fire Research was not involved in the sampling procedure.

**RISE Research Institutes of Sweden AB**
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## Appendix

1. Basis for fire classification

Appendix 1

# Basis for fire classification

## 1 Test reports & test results in support of classification

### 1.1 Test reports

This classification, according to EN 45545-2, is based on the test reports:

| Laboratory | Sponsor | Test report no | Accredited test method |
|---|---|---|---|
| RISE | AB Ludvig Svensson | 8P01249 | ISO 5658-2 |
| RISE | AB Ludvig Svensson | 8P01249-1 | ISO 5660-1 |
| RISE | AB Ludvig Svensson | 8P01249-2 | EN ISO 5659-2+ EN 45545-2, annex C |

### 1.2 Test results

Mean values of the test results are summarized:

| *Test method* | *Number of tests* | Parameter | Results, mean value | Compliance with Requirement Set; Hazard Level |
|---|---|---|---|---|
| *ISO 5658-2 (ref. 8P01249)* | 4 | | | |
| Critical Flux at Extinguishment | | CFE | 47 kW/m$^2$ | R1; HL1/HL2/HL3 |
| *ISO 5660-1: 50 kW/m$^2$ (ref. 8P01249-1)* | 3 | | | |
| Maximum Average Rate of Heat Emission | | MARHE | 63 kW/m$^2$ | R1; HL1/HL2 |
| *ISO 5659-2: 50 kW/m$^2$ without pilot burner (ref. 8P01249-2)* | 3 | | | |
| Maximum specific optical density of smoke at 4 min, $D_s(4)$ | | $D_s(4)$ | 99 | R1; HL1/HL2/HL3 |
| Cumulative value of specific optical density of smoke in the first 4 minutes | | $VOF_4$ | 218 | R1; HL1/HL2/HL3 |
| Conventional index of toxicity, General products | | $CIT_G$ | 0.01 | R1; HL1/HL2/HL3 |

## 2 Reaction to Fire Classification

### 2.1 Reference for classification

According to EN 45545-2 “Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behaviour of materials and components”, to meet the set of material requirements according to table 5, requirement set R1, the product must fulfil the classification criteria for each test method tested as described below.

## 2.2 Classification criteria

Classification criteria according to Requirement Set R1 are summarized as follows:

| *Test method* | HL1 | HL2 | HL3 |
|---|---|---|---|
| *ISO 5658-2* | | | |
| Critical Flux at Extinguishment, CFE (kW/m$^2$) | ≥ 20 | ≥ 20 | ≥ 20 |
| *ISO 5660-1: 50 kW/m$^2$* | | | |
| Maximum Average Rate of Heat Emission, MARHE (kW/m$^2$) | - | ≤ 90 | ≤ 60 |
| *ISO 5659-2: 50 kW/m$^2$, without pilot flame* | | | |
| Maximum specific optical density of smoke at 4 min, $D_s(4)$ | ≤ 600 | ≤ 300 | ≤ 150 |
| Cumulative value of specific optical density of smoke in the first 4 minutes, $VOF_4$ | ≤ 1200 | ≤ 600 | ≤ 300 |
| Conventional index of toxicity, General products, $CIT_G$ | ≤ 1.2 | ≤ 0.9 | ≤ 0.75 |