

**Title:**

CLASSIFICATION OF  
REACTION TO FIRE  
PERFORMANCE  
IN ACCORDANCE WITH  
EN 13501-1:2018

**Notified Body No:**

0833

**Product Name:**

“Novelis ff2<sup>®</sup>/ff3<sup>®</sup>-System 1”

**Report No:**

WF 423882

**Issue No:**

1

**Prepared for:**

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Larbert  
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**Date:**

27<sup>th</sup> March 2020

## 1. Introduction

This classification report defines the classification assigned to “Novelis ff2<sup>®</sup>/ff3<sup>®</sup> - System 1”, a coated Aluminium panel, in line with the procedures given in EN 13501-1:2018.

## 2. Details of classified product

### 2.1 General

The product, “Novelis ff2<sup>®</sup>/ff3<sup>®</sup> - System 1”, a coated Aluminium panel, is defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

### 2.2 Product description

The product, “Novelis ff2<sup>®</sup>/ff3<sup>®</sup> - System 1”, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

|   |                                 |   |
|---|---------------------------------|---|
| General description                       |                                 | Coated Aluminium sheet  |
| Product reference of overall composite    |                                 | “Novelis ff2 <sup>®</sup> /ff3 <sup>®</sup> - System 1”                               |
| Name of manufacturer of overall composite |                                 | Novelis Deutschland GmbH  |
| Thickness of overall composite            |                                 | 2-3mm (2mm as tested)   |
| Density of overall composite              |                                 | 2700 kg/m <sup>3</sup>  |
| Top coat<br>(Test face)                   | Generic type                    | Fluoropolymer based top coating   |
|   | Product reference               | “FP-1”  |
|   | Name of manufacturer            | Beckers   |
|   | Colour reference                | “Signalweiss (19Z4-30)” (stated by sponsor)<br>“Cream” (determined by Warringtonfire) |
|   | Number of coats                 | One   |
|   | Density                         | 1.88 g/ ml  |
|   | Thickness                       | 20 µm   |
|   | Application method              | Roller applied liquid   |
|   | Application rate                | 0.0376 kg/m <sup>2</sup>  |
|   | Curing process per coat         | Oven  |
|   | Trade name of flame retardant   | <b>See Note 1</b>   |
|   | Generic type of flame retardant | <b>See Note 1</b>   |
| Amount of flame retardant                 | <b>See Note 1</b>               |   |
| Primer                                    | Generic type                    | Polyester based primer coating  |
|   | Product reference               | “PP-29”   |
|   | Name of manufacturer            | Beckers   |
|   | Thickness                       | 4µm   |
|   | Density                         | 1.74 g / ml   |
|   | Application rate                | 0.00696 kg/m <sup>2</sup>   |
|   | Colour reference                | “19N1-80”   |
|   | Trade name of flame retardant   | <b>See Note 1</b>   |
|   | Generic type of flame retardant | <b>See Note 1</b>   |
| Amount of flame retardant                 | <b>See Note 1</b>               |   |

|  |  |                                  |
|--|--|----------------------------------|
| Aluminium sheet  | Generic type   | Aluminium sheet                  |
|  | Name of manufacturer   | Novelis Deutschland GmbH         |
|  | Colour reference   | Silver / Alloy AlMg3 (5754)      |
|  | Density  | 2700 kg/m <sup>3</sup>           |
|  | Thickness  | 2-3mm (2mm as tested)            |
|  | Trade name of flame retardant  | <b>See Note 1</b>                |
|  | Generic type of flame retardant  | <b>See Note 1</b>                |
|  | Amount of flame retardant  | <b>See Note 1</b>                |
| Protective epoxy back coating                          | Generic type   | Epoxy based protective back coat |
|  | Product reference  | Epoxi                            |
|  | Name of manufacturer   | Beckers                          |
|  | Colour reference   | "29K9-25"                        |
|  | Number of coats  | One                              |
|  | Density  | 1.38 g /ml                       |
|  | Application thickness  | 3 um                             |
|  | Application rate   | 0.00414 kg/m <sup>2</sup>        |
|  | Application method   | Roller applied liquid            |
|  | Curing process per coat  | Oven                             |
|  | Trade name of flame retardant  | <b>See Note 1</b>                |
|  | Generic type of flame retardant  | <b>See Note 1</b>                |
|  | Amount of flame retardant  | <b>See Note 1</b>                |
| Brief description of manufacturing process of coatings | Formally tested attached with screws to non-FR treated Particleboard substrate which complied with EN 13238. Also tested indicatively with no fixings applied with a 40mm air gap between the back of the specimen and the substrate, both non-FR treated Particleboard and "6mm UCO Superflex" fibre cement board |                                  |

**Note 1** - The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the product / component.

**3. Test reports & test results in support of classification.**

**3.1 Test reports.**

| Name of Laboratory  | Name of sponsor          | Test reports Nos.           | Test method              |
|---------------------|--------------------------|-----------------------------|--------------------------|
| Applus Laboratories | Novelis Deutschland GmbH | 18/18448-2270 Part 1        | EN ISO 1716              |
| Applus Laboratories | Novelis Deutschland GmbH | 18/18448-2270 Part 1 (full) | BS EN 13823 - Formal     |
| Warringtonfire      | Silevon Ltd              | WF 423643<br>WF 423644      | BS EN 13823 - Indicative |
| Warringtonfire      | Silevon Ltd              | WF 423884                   | EN 15117                 |
| Applus Laboratories | Novelis Deutschland GmbH | 18/18448-2270 Part 2 M1     | EN 13501-1               |

**3.2 Test results**

| Test method & test number | Parameter                               | No. tests                      | Results   |                            |
|---------------------------|---|--------------------------------|---|----------------------------|
|                           |   |                                | Continuous parameter - Max/ Mean (m)  | Compliance with parameters |
| BS EN 13823*              | FIGRA <sub>0.2MJ</sub>                  | 3 (full)<br>1 (indic)          | 0.93 W/s (full)<br>6.23, 7.53 W/s (indic)   | -                          |
|                           | FIGRA <sub>0.4MJ</sub>                  |                                | 0.93 W/S (full)<br>6.23, 7.53 W/S (indic)   | -                          |
|                           | THR <sub>600s</sub>                     |                                | 0.41 MJ (full)<br>0.74, 1.23 MJ (indic)   | -                          |
|                           | SMOGRA                                  |                                | 0.00 m <sup>2</sup> s <sup>2</sup> (full)<br>0.00, 0.00 m <sup>2</sup> s <sup>2</sup> (indic) | -                          |
|                           | TSP <sub>600s</sub>                     |                                | 20.10 m <sup>2</sup> (full)<br>6.67, 7.17 m <sup>2</sup> (indic)                              | -                          |
|                           | LFS                                     |                                | -   | Compliant                  |
|                           | Flaming droplets lasting > 10s          |                                | -   | Compliant                  |
| EN ISO 1716               | "FP-1" Top Coating - PCS (b)            | 3                              | 0.46 MJ/m <sup>2</sup>  | Compliant                  |
|                           | "PP-29" Primer – PCS (b)                |                                | 0.11 MJ/m <sup>2</sup>  | Compliant                  |
|                           | Aluminium – PCS (a)                     | Deemed to satisfy (0.00 MJ/kg) |   | Compliant                  |
|                           | Protective Epoxy back coating – PCS (b) | 3                              | 0.11 MJ/m <sup>2</sup>  | Compliant                  |
|                           | For the product as a whole – PCS (e)    | N/a                            | 0.13 MJ/kg  | Compliant                  |

\* Although no EN 1182 test was conducted on the product, the “Novelis ff2<sup>®</sup>/ff3<sup>®</sup> - System 1” product family referenced is deemed to be Euroclass A1 in accordance with EN 13501-1. This is because the PCS (MJ/m<sup>2</sup>) value for the external non-substantial components are all shown to be <2.0 MJ/m<sup>2</sup>.

EN ISO 1716 : 2018 and EN 13501-1 : 2018 state that two or more non-substantial layers that are adjacent to each other (ie with no substantial component(s) in between the layers) are regarded as one non-substantial component when they collectively comply with the requirements for a layer being a non-substantial component. As a result of this, the sum of the PCS contributions for any primer+top coat configuration have also been assessed and have demonstrated a PCS < 2.0 MJ/m<sup>2</sup> and are therefore A1 compliant.

The BS EN 13823 tests, formal and indicative, consistently demonstrated parameters which complied with A1 Classification. This criteria is FIGRA <20 W/s, THR<sub>600s</sub> <4.0 MJ, LFS < End of Specimen and compliance with the s1 and d0 criteria.

#### 4. Classification and field of application

##### 4.1 Reference of classification

This classification has been carried out in accordance with clause 8 of EN 13501-1:2018.

##### 4.2 Classification

The product, “Novelis ff2<sup>®</sup>/ff3<sup>®</sup> - System 1”, a coated Aluminium panel, in relation to its reaction to fire behaviour is classified:

## Reaction to fire classification: A1

##### 4.3 Field of application

This classification is valid for the following end use applications:

- i) Construction applications applied over any substrate with a minimum density of 680kg/m<sup>3</sup>, having a minimum thickness of 10mm and a fire performance of D-s2,d0 or better, in addition to all standardised EN 13238 substrates with a fire performance of A1 or A2-s1,d0.
- ii) Construction applications applied over the “6mm UCO Superflex” fibre cement board substrate with a density of 1522kg/m<sup>3</sup> and a thickness of 6mm
- iii) Air gap details – Any air gap width between the back of the product and the substrate allowed

This classification is also valid for the following product parameters:

|                            |   |
|----------------------------|---|
| Coating application rate   | Tested values or below (kg/m <sup>2</sup> ) allowed |
| Top coat colour            | “Signalweiss” (19Z4-30)” / “Cream” only             |
| Aluminium thickness        | 2mm and greater allowed                             |
| Aluminium density          | 2700kg/m <sup>3</sup> and greater allowed           |
| Product composition        | No further variation allowed                        |
| Product construction       | No further variation allowed                        |
| Mounting and fixing method | No variation allowed                                |

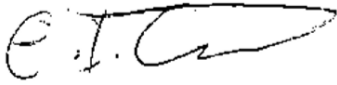
Air gap details

Any air gap allowed

## 5. Limitations

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

### SIGNED



.....  
**Euan Gardner**  
Certification Engineer  
Technical Department

### APPROVED



.....  
**Stacey Deeming**  
Principal Engineer  
Technical Department  
On behalf of **Warringtonfire**

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