

Title:

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

Product Name:

"Proteus SP"

Report No:

WF 503705

Issue No:

1

Prepared for:

Proteus Facades

1 Gerrard Place,
Skelmersdale,
Lancashire,
WN8 9SU

Date:

18th June 2021

1. Introduction

This classification report defines the classification assigned to "Proteus SP", a range of faced spandrel panel with Rockwool insulated core, in line with the procedures given in EN 13501-1: 2018.

2. Details of classified product

2.1 General

The product, "Proteus SP", is defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

2.2 Product description

The product, "Proteus SP", is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		Polyester powder coated steel/ceramic/polyester powder coated aluminium/glass faced spandrel panel with Rockwool insulated core structurally bonded to a lightweight metal rear skin to be used within a curtain wall system.
Product reference of system		"Proteus SP – PPC Steel", "Proteus SP – CX", "Proteus SP – PPC Aluminium", "Proteus SP – GL"
Overall thickness of composite		21.4mm - 210mm (stated by sponsor)
Overall weight per unit area of composite		8.26kg/m ² – 76.76kg/m ² (stated by sponsor)
Coating for Steel and Aluminium (Front face)	Product reference	"Interpon Polyester"
	Generic type	Polyester powder coating
	Name of manufacturer	Akzo Nobel Powder Coatings SNC
	Colour	"White"
	Number of coats	One
	Application thickness	60-90 microns
	Weight per unit area	0.15 kg/m ²
	Application method	See Note 1 below
	Curing process	See Note 1 below
Steel panel (facing type 1)	Flame retardant details	See Note 1 below
	Product reference	"Zinc Galvanised Steel"
	Generic type	Hot-dip galvanised steel
	Name of manufacturer	See Note 2 below
	Thickness	0.7 - 3mm
	Weight per unit area	5.50 - 24kg/m ²
Flame retardant details		Inherently flame retardant

Continued on next page

Aluminium panel (facing type 2)	Product reference	"1050"	
	Generic type	Aluminium	
	Name of manufacturer	See Note 2 below	
	Thickness	0.9 - 5mm	
	Weight per unit area	2.47 – 13.5kg/m ²	
	Flame retardant details	Inherently flame retardant	
Ceramic panel (facing type 3)	Product reference	"Kerlite"	
	Generic type	Porcelain stoneware	
	Name of manufacturer	Cotto D'Este	
	Thickness	3mm	
	Weight per unit area	6.9kg/m ²	
	Flame retardant details	Inherently flame retardant	
Backcoated Glass Panel (facing type 4)	Glass	Product reference	"Lacobel T"
		Generic type	Toughened back painted glass
		Name of manufacturer	AGC
		Thickness	4mm
		Weight per unit area	10kg/m ²
		Flame retardant details	Inherently flame retardant
	Backcoating	Product reference	"Lacobel T"
		Generic type	Toughened glass paint
		Name of manufacturer	AGC
		Colour	"Black"
		Thickness	≤ 1mm
		Weight per unit area	See Note 1 below
Adhesive for facing		Application rate	See Note 2 below
		Application method	See Note 2 below
		Curing process	Fired into glass surface during toughening process (temp ≥600°C)
		Flame retardant details	Inherently flame retardant
		Product reference	"Solfre 2"
		Generic type	Two-part polyurethane adhesive
Core		Name of manufacturer	Chemique Adhesives
		Thickness	<1mm
		Weight per unit area	200g/m ²
		Curing process	Heat cured at 50°C
		Flame retardant details	See Note 1 below
		Product reference	"Fabrock Clad"
Edging		Generic type	Rockwool
		Name of manufacturer	Rockwool
		Thickness	20 - 200mm
		Weight per unit area	2.4 - 24kg/m ²
		Flame retardant details	See Note 2 below
		Product reference	"Fabrock Hard"

Continued on next page

Adhesive for facing	Product reference	"Solfre 2"	
	Generic type	Two-part polyurethane adhesive	
	Name of manufacturer	Chemique Adhesives	
	Thickness	<1mm	
	Weight per unit area	200g/m ²	
	Curing process	Heat cured at 50°C	
	Flame retardant details	See Note 2 below	
Backing Type 1 (PPC Steel, Ceramic Glass)	Coating	Product reference	"Greencoat Hirac"
		Generic type	Epoxy
		Name of manufacturer	SSAB
		Number of coats	Two
		Application thickness	12µm
		Application method	See Note 1 below
		Curing process	See Note 1 below
		Flame retardant details	See Note 1 below
	Panel	Product reference	"Greencoat Hiarc"
		Generic type	Zinc galvanised steel with PVDF coating
		Name of manufacturer	SSAB
		Thickness	0.7mm
		Weight per unit area	5.50kg/m ²
		Flame retardant details	Inherently flame retardant
Backing type 2 (PPC Aluminium)	Coating	Product reference	"Greencoat Hiarc"
		Generic type	PVDF
		Name of manufacturer	SSAB
		Colour	"White"
		Number of coats	Two
		Application thickness	35 microns
		Application method	See Note 1 below
		Curing process	See Note 1 below
		Flame retardant details	See Note 1 below
	Coating	Product reference	"1050"
		Generic type	Aluminium
		Name of manufacturer	See Note 1 below
		Thickness	5mm
		Weight per unit area	13.5kg/m ²
		Flame retardant details	Inherently flame retardant
		Product reference	"Interpon Polyester"
		Generic type	Polyester powder coating
		Name of manufacturer	Akzo Nobel Powder Coatings SNC

Continued on next page

Backing type 3 (PPC Steel)	Panel	Product reference	"Zinc Galvanised Steel"
		Generic type	Hot-dip galvanised steel
		Name of manufacturer	See Note 2 below
		Thickness	3mm
		Weight per unit area	24kg/m ²
		Flame retardant details	Inherently flame retardant
	Coating	Product reference	"Interpon Polyester"
		Generic type	Polyester powder coating
		Name of manufacturer	Akzo Nobel Powder Coatings SNC
		Colour	"White"
		Number of coats	One
		Application thickness	60-90 microns
Backing type 4 (PPC Aluminium)	Coating	Application method	See Note 1 below
		Curing process	See Note 1 below
		Flame retardant details	See Note 1 below
		Product reference	"Eurabuild Polyester"
		Generic type	Epoxy-polyester backcoat
		Name of manufacturer	Euramax Coated Products BV
	Panel	Colour	Grey
		Number of coats	One
		Application thickness	5 microns
		Application method	See Note 1 below
		Curing process	See Note 1 below
		Flame retardant details	See Note 1 below
	Coating	Product reference	"Eurabuild Polyester Coated Aluminium Sheet"
		Generic type	Aluminium
		Name of manufacturer	Euramax Coated Products BV
		Thickness	0.9mm
		Weight per unit area	2.55kg/m ²
		Flame retardant details	Inherently flame retardant
	Panel	Product reference	"Eurabuild Polyester"
		Generic type	Polyester
		Name of manufacturer	Euramax Coated Products BV
		Colour	"White"
		Number of coats	Two
		Application thickness	23 microns
	Coating	Application method	See Note 1 below
		Curing process	See Note 1 below
		Flame retardant details	See Note 1 below
		Mounting and fixing details	Products have been tested with an 80mm ventilated cavity as well as no ventilated cavity. The lack of a ventilated cavity was a result of testing the maximum possible thickness of insulation.
			Where a cavity was in situ, the cavity was situated between the reverse face of the specimens and the calcium silicate substrate as defined in EN 13238:2010.
		Brief description of manufacturing process of panel	Adhesive is applied to a preformed steel front skin and a preformed steel rear skin and sandwich assembled with insulation core and hard insulation perimeter frame. Panel is then bonded under pressure at 55°C.

Note 1: The sponsor was unable to provide this information.

Note 2: The sponsor was unwilling to provide this information.

3. Test reports/extended application reports & test results in support of classification

3.1 Test reports/extended application reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
Warringtonfire	Proteus Facades	WF 398914 (issue 2),	EN ISO 1716: 2010 Composite Report
Warringtonfire	ame Facade Engineering Limited	WF 193845	EN ISO 1716: 2002
Warringtonfire	Proteus Facades	WF 502584	EN ISO 1716: 2018
MPA	Rockwool	231001026-2	EN ISO 1716: 2018
CSTB	AkzoNobel Powder Coatings	RA 18-0083	EN ISO 1716:2013
VTT Expert Services Ltd	Rautaruukki Oyj	VTT-S-2032-14	EN ISO 1716: 2010
Warringtonfire	Proteus Facades	WF 435960 (Issue 2) (full) WF 435089 (Issue 2), 435090, 435091 (Issue 2), 435092 (Issue 2), 435957 (Issue 2), 435958, 435961 (Issue 2), 435962 (Issue 2), 435963 (Issue 2), 435964 (Issue 2), 435965 (Issue 2)	EN 13823: 2020
Bodycote	Euramax Coated Products BV	WF 177459, WF 180158	EN ISO 1716: 2002
Warringtonfire	Proteus Facades	WF 503706	EN 15725:2010 and EN/TS 15117:2005

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
EN 13823: 2020	FIGRA 0.2MJ	Indicative 1 – PPC Alu WF 435089	34.57 W/s	Compliant
		Indicative 2 – PPC Alu WF 435090	0.00 W/s	
		Indicative 3 – PPC Alu WF 435091	41.99 W/s	
		Indicative 4 – PPC Alu WF 435092	4.44 W/s	
		Indicative 5 – PPC Steel WF 435957	76.72 W/s	
		Indicative 6 – PPC Steel WF 435958	0.00 W/s	
		Indicative 7 – PPC Steel WF 435961	5.75 W/s	
		Indicative 8 – CX WF 435962	16.22 W/s	
		Indicative 9 – CX WF 435963	49.56 W/s	
		Indicative 10 – GL WF 435964	22.42 W/s	
		Indicative 11 – GL WF 435965	0.00 W/s	
		Formal test average WF 435960	49.78 W/s	
EN 13823: 2020	FIGRA 0.4MJ	Indicative 1 – PPC Alu WF 435089	0.00 W/s	Compliant
		Indicative 2 – PPC Alu WF 435090	0.00 W/s	
		Indicative 3 – PPC Alu WF 435091	0.00 W/s	
		Indicative 4 – PPC Alu WF 435092	4.44 W/s	
		Indicative 5 – PPC Steel WF 435957	45.54 W/s	
		Indicative 6 – PPC Steel WF 435958	0.00 W/s	
		Indicative 7 – PPC Steel WF 435961	5.75 W/s	
		Indicative 8 – CX WF 435962	14.91 W/s	
		Indicative 9 – CX WF 435963	0.00 W/s	
		Indicative 10 – GL WF 435964	0.00 W/s	
		Indicative 11 – GL WF 435965	0.00 W/s	
		Formal test average WF 435960	37.09 W/s	

THR _{600s}	Compliant	Indicative 1 – PPC Alu WF 435089	0.65 MJ
		Indicative 2 – PPC Alu WF 435090	0.39 MJ
		Indicative 3 – PPC Alu WF 435091	0.95 MJ
		Indicative 4 – PPC Alu WF 435092	0.68 MJ
		Indicative 5 – PPC Steel WF 435957	1.28 MJ
		Indicative 6 – PPC Steel WF 435958	0.49 MJ
		Indicative 7 – PPC Steel WF 435961	1.10 MJ
		Indicative 8 – CX WF 435962	0.89 MJ
		Indicative 9 – CX WF 435963	0.98 MJ
		Indicative 10 – GL WF 435964	0.78 MJ
		Indicative 11 – GL WF 435965	0.52 MJ
		Formal test average WF 435960	1.07 MJ
LFS	Compliant	Indicative 1 – PPC Alu WF 435089	None
		Indicative 2 – PPC Alu WF 435090	None
		Indicative 3 – PPC Alu WF 435091	None
		Indicative 4 – PPC Alu WF 435092	None
		Indicative 5 – PPC Steel WF 435957	None
		Indicative 6 – PPC Steel WF 435958	None
		Indicative 7 – PPC Steel WF 435961	None
		Indicative 8 – CX WF 435962	None
		Indicative 9 – CX WF 435963	None
		Indicative 10 – GL WF 435964	None
		Indicative 11 – GL WF 435965	None
		Formal test average WF 435960	None
SMOGRA	Compliant	Indicative 1 – PPC Alu WF 435089	0.00 m ² /s ²
		Indicative 2 – PPC Alu WF 435090	0.00 m ² /s ²
		Indicative 3 – PPC Alu WF 435091	0.00 m ² /s ²
		Indicative 4 – PPC Alu WF 435092	0.00 m ² /s ²

TSP _{600s}	Indicative 5 – PPC Steel WF 435957	0.00 m ² /s ²	Compliant
	Indicative 6 – PPC Steel WF 435958	0.00 m ² /s ²	
	Indicative 7 – PPC Steel WF 435961	0.00 m ² /s ²	
	Indicative 8 – CX WF 435962	0.00 m ² /s ²	
	Indicative 9 – CX WF 435963	0.00 m ² /s ²	
	Indicative 10 – GL WF 435964	0.00 m ² /s ²	
	Indicative 11 – GL WF 435965	0.00 m ² /s ²	
	Formal test average WF 435960	2.06 m ² /s ²	
	Indicative 1 – PPC Alu WF 435089	31.69 m ²	
	Indicative 2 – PPC Alu WF 435090	10.86 m ²	
	Indicative 3 – PPC Alu WF 435091	38.05 m ²	

	Flaming of Fallen Particle Exceeding 10s?	Indicative 1 – PPC Alu WF 435089	None	Compliant
		Indicative 2 – PPC Alu WF 435090	None	
		Indicative 3 – PPC Alu WF 435091	None	
		Indicative 4 – PPC Alu WF 435092	None	
		Indicative 5 – PPC Steel WF 435957	None	
		Indicative 6 – PPC Steel WF 435958	None	
		Indicative 7 – PPC Steel WF 435961	None	
		Indicative 8 – CX WF 435962	None	
		Indicative 9 – CX WF 435963	None	
		Indicative 10 – GL WF 435964	None	
		Indicative 11 – GL WF 435965	None	
EN ISO 1716 (PPC Steel front face, PVDF coated steel backing)	PPC Coating - PCS (b)	3	3.1 MJ/m ²	-
	Steel - PCS (a)	Deemed to satisfy (0.00)		-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Epoxy Coating – PCS (d)	3	0.35 MJ/m ²	
	Internal non substantial – PCS (d)		3.11 MJ/m ²	
	Steel - PCS (a)	Deemed to satisfy (0.00)		-
	PVDF Reverse coating - PCS (b)	3	0.86 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	1.15 MJ/Kg	-
EN ISO 1716 (PPC Aluminium front face, PPC aluminium backing)	PPC Coating - PCS (b)	3	3.1 MJ/m ²	-
	Aluminium - PCS (a)	Deemed to satisfy (0.00)		-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Aluminium - PCS (a)	Deemed to satisfy (0.00)		-
	PPC Reverse coating - PCS (b)	3	3.1 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	0.98 MJ/Kg	-

EN ISO 1716 (Ceramic front face, PVDF Steel backing)	Ceramic - PCS (a)	3	0.11 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Epoxy Coating – PCS (d)	3	0.35 MJ/m ²	
	Internal non substantial – PCS (d)		3.11 MJ/m ²	i
	Steel - PCS (a)	Deemed to satisfy (0.00)		-
	PVDF Reverse coating - PCS (b)	3	0.86 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	1.0 MJ/Kg	-
EN ISO 1716 (Glass front face, PVDF steel backing)	Glass - PCS (a)	Deemed to satisfy (0.00)		-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Epoxy Coating – PCS (d)	3	0.35 MJ/m ²	
	Internal non substantial – PCS (d)		3.11 MJ/m ²	i
	Steel- PCS (a)	Deemed to satisfy (0.00)		-
	PVDF Reverse coating - PCS (b)	3	0.86 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	0.95 MJ/Kg	-
EN ISO 1716 (PPC Steel front face, PPC steel backing)	PPC Coating - PCS (b)	3	3.1 MJ/m ²	-
	Steel - PCS (a)	Deemed to satisfy (0.00)		-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Steel - PCS (a)	Deemed to satisfy (0.00)		-
	PPC Reverse coating - PCS (b)	3	3.1 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	0.79 MJ/Kg	-

Continued on next page

EN ISO 1716 (PPC Aluminium front face, Eurabuild aluminium backing)	PPC Coating - PCS (b)	3	3.1 MJ/m ²	-
	Aluminium - PCS (a)	Deemed to satisfy (0.00)		-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Core - PCS (a)	3	1.3 MJ/Kg	-
	Adhesive - PCS (d)	3	2.76 MJ/m ²	-
	Backcoat – PCS (d)	3	0.17 MJ/m ²	-
	Internal non-substantial – PCS (d)	2.93 MJ/m ²		-
	Aluminium - PCS (a)	Deemed to satisfy (0.00)		-
	Eurabuild Reverse coating - PCS (b)	3	0.894 MJ/m ²	-
	For the product as a whole PCS (e)	Summary result	1.00 MJ/Kg	-
	Overall Product Range PCS (e)		0.79 – 1.15 MJ/kg	

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 products, "Proteus SP", a range of faced spandrel panel with Rockwool insulated core, in relation to their reaction to fire behaviour are classified:

A2

The additional classification in relation to smoke production is:

s1

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

d0

The format of the reaction to fire classification for construction applications, excluding flooring and linear pipe thermal insulation is:

Fire Behaviour		Smoke Production			Flaming Droplets	
A2	-	s	1	,	d	0

i.e. A2 – s1 , d0

Reaction to fire classification: A2-s1,d0

4.3 Field of application

This classification is valid for the following end use applications:

- i) Free standing construction applications
- ii) Construction applications mounted with no airspace or with a minimum airspace of 80mm over any substrate with a density equal to or greater than 870kg/m³, having a minimum thickness of 9mm and a fire performance of A2-s1,d0 or better (excluding paper faced gypsum plasterboard).

This classification is also valid for the following product parameters:

Product thickness	21.4mm – 210mm
Insulation thickness	20mm – 200mm
Product weight per unit area	No variation allowed
Product colour/pattern	No variation allowed
Product composition	No variation allowed
Product construction	Permitted product variations: PPC steel front face (test face) with PVDF steel backing PPC aluminium front face (test face) with PPC aluminium backing Ceramic front face (test face) with PVDF steel backing Glass front face (test face) with PVDF steel backing PPC steel front face (test face) with PPC steel backing PPC aluminium front face (test face) with Polyester aluminium backing

5. Limitations

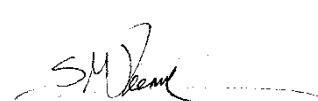
This document does not represent type approval or certification of the product.

SIGNED



Katie Williams
Certification Engineer
Technical Department

APPROVED



Stacey Deeming
Principal Engineer
Technical Department
on behalf of **Warringtonfire**

All work and services carried out by Warringtonfire Testing and Certification Limited are subject to, and conducted in accordance with, the Standard Terms and Conditions of Warringtonfire Testing and Certification Limited, which are available at <https://www.element.com/terms/terms-and-conditions> or upon request.

This copy has been produced from a .pdf format electronic file that has been provided by **Warringtonfire** to the sponsor of the report and must only be reproduced in full. Extracts or abridgements of reports must not be published without permission of **Warringtonfire**. The pdf copy supplied is the sole authentic version of this document. All pdf versions of this report bear authentic signatures of the responsible **Warringtonfire** staff.