

Classification report

No. 220770-K1

issued 29.08.2022

Customer: IGP Pulvertechnik AG
Ringstrasse 30
CH-9500 Wil

Order: Classification of the burning behaviour according to
DIN EN 13501-1 (2019-05)

Date of order: 08.07.2022

Notification number of the test laboratory

NB 1378

Designation of the classified building product

Product name: IGP-DURAxal 42

This classification report lays down the classification of the building product above according to the procedures of DIN EN 13501-1.



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This classification report is a translation of the German version 220770-K1 (issued 29.08.2022). In case of doubt only the German version is valid. This classification report contains 7 pages.

1. Beschreibung des Probenmaterials

1.1 Angaben des Auftraggebers:

Product Name: IGP-DURAxal 42

Test Page: Coated Side

Sample/material description:

Trade Name: IGP-DURAxal 42

Sample material: aluminium sheets, powder-coated

Material type: Powder coating based on saturated polyester resins

Method of manufacture: coated

Total thickness: 90 – 128 µm +/- 10% on 2 mm aluminium sheet

Total basis weight: -

Color: black, white, brown

Flame retardants: without

Intended area of application: Powder coating of façade elements in architecture

Probe Nr.	Serie / Aufbau	Decklack	Dichte Decklack [g/cm ³]	Schichtdicken Primer µm	Schichtdicken Top-Coat µm	Gesamtschichtdicke im Mittel µm	Flächengewicht min [kg/m ²]	Flächengewicht max [kg/m ²]
9	Serie 42 aktualisiert	4201A90050L10	1,4763	-	90 - 110	100	0,133	0,163
3	Serie 42 aktualisiert	4201A90100L10	1,5603	-	90 - 110	100	0,14	0,172
14	Serie 42 aktualisiert	4201E81872L3F	1,5003	-	90 - 110	100	0,135	0,165
24		4201E81872L3F	1,5003	-	120-128	124	0,18	0,192

1.2 At the specimen preparation from the Warringtonfire Frankfurt GmbH determined values:

Powder coating on aluminium plate (2 mm)

Sample	Material / Plates No.:	Colour	Layer thickness [µm]	surface weight max. [kg/m ²]
1	4201A90100L10 / 3	white	90-110	0,172
2	4201A90050L10 / 9	black	90-110	0,163
3	4201E81872L3F / 14	brown	90-110	0,165
4	4201E81872L3F / 24	brown	120-128	0,192
5	4201E81872L3F / 24	brown	120-128	0,192

Test arrangement: Colored front side to the burner

Material construction und fixing see pictures below:



picture: edge of the large sample wing



fixing of specimen

1.3 Production and pretreatment of the samples for the tests according to DIN EN 13823

The material was delivered by the manufacturer for testing and prepared for testing.

The test was carried out over the entire area.

The material was tested without distance to the end plate analogous to DIN EN 13823, point 4.4.10 (calcium silicate) raw density $800 \pm 150 \text{ kg/m}^3$, thickness $12 \pm 3 \text{ mm}$).

Before the test, the samples were taken for more than 48 hours until the weight consistency according to DIN EN 13238 conditioned.

1.4 Production and pre-treatment of the samples for the tests according to DIN EN 1716

The sample selection was made by the customer and the material was delivered for the tests.

Material: Topcoat Series 42	[kg/m ²] max.
4201A90050L10	0,163
4201A90100L10	0,172
4201E81872L3F	0,192

Material crushed (homogenized) after prior drying.

The samples were conditioned for more than 48 h to constant mass at a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$ prior to the testing.

2. Test reports and test results

2.1.1 Test reports

Name of test laboratory	Customer	Report to form the basis	Test procedure
Warringtonfire, Frankfurt	IGP Pulvertechnik AG	220770	DIN EN 13823 (SBI) DIN EN ISO 1716 (Determination of gross heat combustion)

2.1.2 Test results

Test procedures	Parameter / classes		Test results
			average
DIN EN 13823 (SBI)	FIGRA _{0,2MJ} ≤ 120 [W/s] for class A2 FIGRA _{0,2MJ} ≤ 120 [W/s] for class B		80,28
	FIGRA _{0,4MJ} ≤ 250 [W/s] for class C FIGRA _{0,4MJ} ≤ 750 [W/s] for class D		32,05
	THR _{600s} [MJ] ≤ 7,5 MJ for class A2 THR _{600s} [MJ] ≤ 7,5 MJ for class B THR _{600s} [MJ] ≤ 15 MJ for class C THR _{600s} [MJ] no requirement for class D		0,63
	SMOGRA-index ≤ 30 [m ² /s ²] für s1 SMOGRA-index ≤ 180 [m ² /s ²] für s2		5,65
	TSP _{600s} ≤ 50 [m ²] for s1 TSP _{600s} ≤ 200 [m ²] for s2		37,54
	LFS < edge of the specimen for class A2 LFS < edge of the specimen for class B LFS < edge of the specimen for class C		fulfilled
	no burning dripping off/dropping within 600s for class d0		fulfilled
	DIN EN ISO 1716	PCS ≤ 3,0 MJ/kg ^a for Class A2 PCS ≤ 4,0 MJ/m ^{22b} for Class A2 PCS ≤ 4,0 MJ/m ^{22d} for Class A2 PCS ≤ 3,0 MJ/kg ^e for Class A2	Top coat: 19,5742 MJ/kg max. = 3,7583 MJ/m ² max. Aluminium plate: 0,0000 MJ/kg

Explanations of table standing too above:

Figra_{0,2MJ}: Heat release rate with consideration of the THR of threshold value of 0,2MJ [W/s]

Figra_{0,4MJ}: Heat release rate with consideration of the THR of threshold value of 0,4MJ[W/s]

THR_{600s}: Total set free warmth during 600s [MJ]

SMOGRA: Smoke development rate

TSP_{600s}: Total set free smoke quantity during 600s [m²]

LSF: lateral propagation of flames

a: for homogenous products and substantial contents of inhomogeneous products

b: for every outer not substantial content from not homogenies products.

d: for every inner not substantial content from not homogenies products

e: for the complete product

3 Classification and range of application

3.1 Reference

The classification was carried out according to the chapter 11 of DIN EN 13501-1

3.2 Classification

The tested material is ranked related to its behaviour in case of fire and according to its heat combustion into the class **A2**.

Concerning the smoke development the tested material is ranked into the class **s1**

Concerning the dripping off behavior the tested material is ranked into the class **d0**.

The classification of the tested material reads thus:

A2 – s1 d0

3.3 Area of application

The classification is only valid for the in chapter one described powder coating, in the tested colours layer thicknesses and surface weight, on metallic substrates of building material class A2 s1 d0.

The classification also includes intermediate colours and layer thicknesses.

4 Reservation

This classification report replaces not a possible required type admittance or type certification of the product.

5 Decision rule and measurement uncertainty

In determining the results, the normative test conditions and limits are not adjusted to account for uncertainties in measurement. The determined measurement uncertainties are not combined with the measured results to evaluate compliance with the product specifications.

Frankfurt, the 29.08.2022

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