



General

Powder coatings, in the sense of a decorative coating used on metallic surfaces, are by definition considered to be a non-substantial building component and are therefore not a building product. They can, however, be tested as a building product in accordance with DIN EN 13501-1.

According to DIN EN 13501-1 and DIN 4102 Part 1, building materials are classified into the following categories in accordance with their fire behaviour:

| Building control designation | Additional requirements | | European class in accordance with DIN EN 13501-1 | Building material class in accordance with DIN 4102-1 |
|------------------------------|-------------------------|-------------------------------|--|---|
| | No smoke | No burning droplets/particles | | |
| Non-combustible | ✓ | ✓ | A1 | A1 |
| | ✓ | ✓ | A2-s1, d0 | A2 |
| Flame resistant | ✓ | ✓ | B-s1, d0 | B1 |
| | ✓ | ✓ | C-s1, d0 | |
| | | ✓ | A2-s2, d0 | B1 |
| | | ✓ | A2-s3, d0 | |
| | | ✓ | B, C-s2, d0 | |
| | | ✓ | B, C-s3, d1 | |
| | ✓ | | A2-s1, d1 | B1 |
| | ✓ | | A2-s1, d2 | |
| | ✓ | | B, C-s1, d1 | |
| | ✓ | | B, C-s1, d2 | |
| Normal flammability | ✓ | ✓ | D-s1, d0 | B2 |
| | | ✓ | D0-s2, d0 | |
| | | ✓ | D-s3, d0 | |
| | | | E | |
| | ✓ | | D-s1, d2 | |
| | | | D-s2, d2 | |
| Highly flammable | | | D-s3, d2 | |
| | | | E-d2 | B2 |
| | | | F | B3 |

The additional designations mean:

- s1, s2, s3 [m²/sec²] describes the smoke behaviour
- s1 = no or limited smoke development
- s3 = severe smoke development
- d0, d1, d2 = description of the burning droplets
- d0 = no burning droplets within 600 seconds

Affiliation to the building material class **“non-combustible”** must be proved by a general building control approval from an Institut für Bautechnik and ensured through continuous quality monitoring.

In accordance with the federal state building codes and implementation regulations, the “building control designations”, such as **“non-combustible”**, are decisive. Only building materials that have been tested according to DIN EN 13501-1 and DIN 4102 should be used as equivalents.

Classification

The powder coating systems with the series descriptions:

- DURA®face 58** Standard façade coating
- HWFclassic 59** Highly weather-resistant façade coating
- DURA®xal 42/46** Highly weather-resistant façade coating
- HWFsuperior 57** Ultra-highly weather-resistant façade coating

were tested for their fire behaviour at the MPA Braunschweig material testing institute in accordance with the procedures set out in DIN EN 13501-1:2010-01

Test report 2300/789/16-a in accordance with DIN EN 13823:2015-02

Test report 2300/789/16-b in accordance with DIN EN ISO 1716:2010-11

Subsequently, on the basis of the above-mentioned tests, the Deutsche Institut für Bautechnik (DIBt) issued the general building control approval with approval no. Z-56.428-1023 of 11 December 2018 below for the above-mentioned IGP powder coating systems on sheet metal coated on one or both sides, or metal profiles coated on all sides.

The above-mentioned powder coating systems have been classified as non-combustible building materials in accordance with DIN EN 13501-1 in

Class A1 and Class A2-s1, d0

subject to product range and coating thickness. The statements of approval are provided on the individual technical data sheets for the products.



Printouts of the corresponding approvals will be sent on request.

The classification of powder coating ranges is based, among other things, on the determined gross combustion heat, which is in turn considered in relation to the coating thickness according to the table (page 2, annex to DIBt approval document).

The classification of the above-mentioned powder coating ranges applies to any desired shades and various gloss levels, as well as to different surfaces and structural characteristics. In the case of profile bodies, the minimum centre distance from the adjacent profile must also be tested.

The above-mentioned powder coating systems were certified for a common average coating thickness of 80 µm. In the event that coating thicknesses of slightly more than 80 µm occur at isolated measuring points or at the component edge, experience demonstrates that class A2-s1 will not exceed d0.

Sheet metal coated on one or both sides

| Fire behaviour | Characteristics | Powder coating | | | |
|----------------|---|------------------------------|-------------------------------|--------------------------------|-------------------------------|
| | | IGP-DURAF ^{face} 58 | IGP-HWF ^{classic} 59 | IGP-HWF ^{superior} 57 | IGP-DURAX ^{al} 42/46 |
| A1 | max. dry layer thickness [µm] | 60 | 57 | Not permitted | |
| | max. dry layer weight [g/m ²] | 95 | 90 | Not permitted | |
| A2-s1, d0 | max. dry layer thickness [µm] | 80 | | | |
| | max. dry layer weight [g/m ²] | 130 | | | |

Metal profiles coated on all sides

| Fire behaviour | Characteristics | Powder coating | | | | | | | | | | | | | | | |
|--|--|------------------------------|------|------|------|-------------------------------|------|------|------|--------------------------------|------|------|------|-------------------------------|------|------|------|
| | | IGP-DURAF ^{face} 58 | | | | IGP-HWF ^{classic} 59 | | | | IGP-HWF ^{superior} 57 | | | | IGP-DURAX ^{al} 42/46 | | | |
| A1 | max. dry layer thickness [µm] | 60 | | | | 57 | | | | Not permitted | | | | | | | |
| | max. dry layer weight [g/m ²] | 95 | | | | 90 | | | | Not permitted | | | | | | | |
| | Factor "x" for determining the permitted centre distance | 1.0 | | | | 1.0 | | | | -/- | | | | | | | |
| A2-s1, d0 | max. dry layer thickness [µm] | 80 | 70 | 60 | 50 | 80 | 70 | 60 | 50 | 80 | 70 | 60 | 50 | 80 | 70 | 60 | 50 |
| | max. dry layer weight [g/m ²] | 130 | 110 | 95 | 80 | 130 | 110 | 95 | 80 | 130 | 110 | 95 | 80 | 130 | 110 | 95 | 80 |
| | Factor "x" for determining the permitted centre distance | 0.70 | 0.60 | 0.50 | 0.45 | 0.70 | 0.60 | 0.50 | 0.45 | 0.70 | 0.60 | 0.50 | 0.45 | 0.70 | 0.60 | 0.50 | 0.45 |
| Permitted centre distance "a" dependent on circumference U of metal profiles (see section 1.2.1) | | $a \geq U * 1/x$ | | | | | | | | | | | | | | | |

Sheet metal and metal profiles coated with powder coatings **IGP-DURAF^{face} 58**, **IGP-HWF^{classic} 59**, **IGP-HWF^{superior} 57** and **IGP DURAX^{al} 42/46** as non-combustible building materials.

Table in accordance with approval document (DIBt) no. Z-56.428-1023