

# ENVIRONMENTAL PRODUCT DECLARATION

as per ISO 14025 and EN 15804+A2

|                          |                                      |
|--------------------------|--------------------------------------|
| Owner of the Declaration | IGP Pulvertechnik AG                 |
| Publisher                | Institut Bauen und Umwelt e.V. (IBU) |
| Programme holder         | Institut Bauen und Umwelt e.V. (IBU) |
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| Valid to                 | 09.03.2031                           |

**Coating powder IGP-HWFsuperior 57**  
**IGP Pulvertechnik AG**

[www.ibu-epd.com](http://www.ibu-epd.com) | <https://epd-online.com>



General Information

|                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <div>IGP Pulvertechnik AG</div> <div> <div>Programme holder</div> <div> IBU – Institut Bauen und Umwelt e.V.<br/> Hegelplatz 1<br/> 10117 Berlin<br/> Germany </div> </div>                         | <div>Coating powder IGP-HWFsuperior 57</div> <div> <div>Owner of the declaration</div> <div> IGP Pulvertechnik AG<br/> Ringstrasse 30<br/> 9500 Wil<br/> Switzerland </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <div> <div>Declaration number</div> <div>EPD-IGP-20250515-CBC1-EN</div> </div>                                                                                                                      | <div> <div>Declared product / declared unit</div> <div> Coating powder <b>IGP-HWFsuperior 57</b> is a superdurable coating system designed for high-performance architectural facades and infrastructure applications offering very high color, gloss and chalking stability. </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <div> <div>This declaration is based on the product category rules:</div> <div>Coatings with organic binders, 01.08.2021<br/>(PCR checked and approved by the SVR)</div> </div>                     | <div> <div>Declared unit 1kg</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <div> <div>Issue date</div> <div>10.03.2026</div> </div>                                                                                                                                            | <div> <div>Scope:</div> <div> This environmental product declaration refers to a representative formula of an organic, thermosetting powder coating of series <b>IGP-HWFsuperior 57</b> from the manufacturer IGP Pulvertechnik AG. </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <div> <div>Valid to</div> <div>09.03.2031</div> </div>                                                                                                                                              | <div> <div> The declaration covers the reproducible color range of the solid and pearl mica effect shades of the superdurable PLUS product range <b>IGP-HWFsuperior 57</b> with the corresponding product groups 5703, 5707 and 571T and reflects an average of the selected representative articles. </div> <div> The declared products originate from the development and production location in Wil, Switzerland. </div> <div> The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences. </div> <div> The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as <i>EN 15804</i>. </div> </div> |
| <div> <div>  </div> <div> Dipl.-Ing. Hans Peters<br/> (Chairman of Institut Bauen und Umwelt e.V.) </div> </div> | <div> <div>Verification</div> <div> <div>The standard EN 15804 serves as the core PCR</div> <div>Independent verification of the declaration and data according to ISO 14025:2011</div> <div> <input type="checkbox"/> internally <input checked="" type="checkbox"/> externally </div> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <div> <div>  </div> <div> Florian Pronold<br/> (Managing Director Institut Bauen und Umwelt e.V.) </div> </div>  | <div> <div>  </div> <div> Florian Gehring,<br/> (Independent verifier) </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Product

### Product description/Product definition

**IGP-HWFSuperior 57** series powder coatings are highly weather-resistant and fulfil the standards for superdurable facade coating qualities of common quality associations such as Qualicoat Class 2 as well as GSB Florida 5. They also hold a test report in accordance with *AAMA 2604 standards*. They are based on saturated polyester resins, corresponding hardeners, and moisture- and light-resistant pigments. Thanks to reactive cross-linking binders, the product series enables energy- and resource-efficient coating. Additionally, all items are equipped with increased resistance to scratching.

The series includes the following surface characteristics:

**IGP-HWFSuperior 5703** smooth, matte

**IGP-HWFSuperior 5707** smooth, silk gloss

**IGP-HWFSuperior 571T** fine-textured, deep matte

Usability:

The coating powders are not subject to the CE labeling requirement or other EU harmonization regulations. The respective national regulations at the point of use apply.

### Application

**IGP-HWFSuperior 57** powder coatings are used for façade coatings on aluminium or steel, preferably in locations with high UV radiation, high temperatures and/or high humidity. On aluminium substrates, the product can generally be used in a single coat and thus supports the efficient use of materials.

### Technical Data

When applied with the recommended coating thickness of 60 µm, the powder coating films of **IGP-HWFSuperior 57** have the following technical properties:

### Powder and film properties

| Name                                                                                       | Value                                           | Unit                 |
|--------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------|
| Hardness test EN ISO 1520                                                                  | ≤ 5 mm, mit Tapetest                            | mm                   |
| Indentation hardness EN ISO 2815                                                           | ≥ 80                                            | -                    |
| Weathering quality as per GSB und Qualicoat; AAMA 2604                                     | GSB Florida 5; Qualicoat Kl. 2; AAMA 2604       | -                    |
| Density EN ISO 8130-2                                                                      | 1,3-1,6                                         | kg/l                 |
| Solid substance content EN ISO 14680-2                                                     | 99                                              | %                    |
| Theoretical yield at 60 µm, 90% application efficiency                                     | 8 - 12                                          | m²                   |
| Gloss range matte 56-03 EN ISO 2813                                                        | 25 - 35                                         | *R'/60°              |
| Gloss range silk gloss 56-07                                                               | 65 - 85                                         | R'/60°               |
| Gloss range fine structure 56-1M                                                           | 2 - 12                                          | R'/60°               |
| Curing time                                                                                | from 20                                         | min                  |
| Curing temperature                                                                         | 170                                             | ° C                  |
| Impact penetration, indirect, EN ISO 6272-2                                                | ≥ 2,5                                           | Nm                   |
| Bending test EN ISO 1519                                                                   | ≤ 5                                             | mm                   |
| Adhesion test EN ISO 2409                                                                  | no delamination                                 | -                    |
| Salt spray test (AASS) EN ISO 9227, ISO 4628                                               | 1000 h max ≤ S2                                 | h                    |
| Condensation water test EN ISO 6270-2 CH, ISO 4628                                         | 1000 h max ≤ S2                                 | h                    |
| Gloss stability accelerated weathering QUV-B EN ISO 16474-3                                | 1000 h ≥ 50%                                    | RG**                 |
| Gloss stability accelerated weathering WOM EN ISO 16474-2                                  | 1000 h ≥ 90%                                    | RG                   |
| Florida outdoor exposure Gloss stability as per GSB, Qualicoat ISO 2810                    | 5 years ≥ 50%                                   | RG                   |
| Florida outdoor exposure Gloss stability as per AAMA 2604 ASTM D 523                       | 5 years ≥ 30%                                   | RG                   |
| Color Stability as per Qualicoat and GSB limit values, CIELAB color space ISO 11664-4; D65 | LV*** : QC: App. A12; GSB: AL631-4: App. 2, 2.4 | QC: ΔE, GSB: ΔL*, C* |
| Color Stability as per AAMA 2604, Hunter color space ASTM D 2244, Sect. 6.3                | ≥ 5                                             | ΔE                   |
| Scratch resistance Martindale 32 revolutions, 200 gr CEN/TS 16611                          | ≥ 60%                                           | RG                   |

\* R' - Reflectometer values at a 60° angle of measurement

\*\* RG - Residual gloss

\*\*\* LV - Limit Values ' QC- Qualicoat

### Base materials/Ancillary materials

The declaration refers to the following composition of coating material from the **IGP-HWFSuperior 57** series:

| Name                                 | Value       | Unit |
|--------------------------------------|-------------|------|
| Binders (resins and hardeners)       | 59.5 - 78.0 | %    |
| Pigments (color and effect pigments) | 1.0 - 25.1  | %    |
| Extender                             | 2.0 - 27.5  | %    |
| Additives                            | 4.9 - 7.0   | %    |

The weighted average composition consists of binders (70 %), extenders (12 %), additives (7 %) and pigments (11 %). All articles of series 57 comply with *REACH Regulation (EG) No. 1907/2006*.

Substances of very high concern (SVHC) as per the current ECHA Candidate List and substances listed in Annex XIV of *REACH Regulation (EG) No. 1907/2006* are not contained

## LCA: Calculation rules

### Declared Unit

The declared unit is 1 kg.

### Details of the declared unit

| Name                       | Value | Unit              |
|----------------------------|-------|-------------------|
| Gross density (mean value) | 1450  | kg/m <sup>3</sup> |
| Declared unit              | 1     | kg                |

The EPD declares an average composition for all analyzed products.

The weighted average composition of the declared product is calculated in relation to the production volume shares of a total of 12 variants, manufactured at the IGP production locations in Wil, Switzerland.

The production process is identical for all products of all the analyzed variants.

With regard to the variability of the LCA results, slight fluctuations can occur due to different product compositions. A single-score evaluation based on *EN15804+A2* (EF 3.1) normalization is conducted on all 12 products (Module A1-A3) to assess the range in variation of their corresponding environmental impacts relative to the weighted average. The range varies between +6 % and -11 % relative to the declared weighted average results. The LCA values are estimated to be robust.

### System boundary

Type of EPD:

Cradle to plant gate with modules C1-C4 and module D (A1-A3, C, D). The life cycle assessment covers:

#### A1-A3

- Module A1, A3: Raw material provision and powder coating manufacturing processes (Electricity: 0.66 kg

above the legally defined threshold value of 0,1 %. Articles of series **IGP-HWF<sup>superior</sup> 57** also comply with *Directive (EU) 2015/863 (RoHS 3)*.

### Reference service life

Provided the surfaces coated with **IGP-HWF<sup>superior</sup> 57** are cared for properly, the period of use corresponds to the life of the building. Changes to the shade and gloss caused by weathering do not impair the protective effect.

CO<sub>2</sub>e/kWh; Thermal Energy: 0.22 kg CO<sub>2</sub>e/kWh), including the packaging. The biogenic CO<sub>2</sub> emissions from the packaging material are declared in A1-A3 and the stored carbon is taken into account as 'CO<sub>2</sub>-neutral'.

- Module A2: Transport to the production facility

#### C1- C4, D

- Module C1: Manual dismantling (no environmental loads).
- Module C2: An average transport distance of 200 km by truck is assumed.
- Module C3: No Incineration considered in End of life scenario. Therefore it is set to 0.
- Module C4: As a disposal scenario, it is assumed that the coating powder, which is located on an aluminium surface during disposal is thermally disposed of during the recycling of the aluminium (melting/burning)
- Module D: No benefits are generated from module C4, it is set to 0.

### Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product's lifespan: Europe

### Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. Background database: *Sphera LCA FE (GaBi ts)* software, *CUP 2024.2*.

## LCA: Scenarios and additional technical information

### Characteristic product properties of biogenic carbon

The calculation of the biogenic carbon content is based on the assumption that the absolutely dry wood and cardboard mass consists of 50 % biogenic carbon.

None of the analyzed products contain biogenic carbon, only the packaging material.

The uptake and release of biogenic CO<sub>2</sub> emissions from the packaging material are declared in A1-A3. The stored carbon is therefore taken into account in A1-A3 as 'CO<sub>2</sub>-neutral'.

| Name                                              | Value  | Unit |
|---------------------------------------------------|--------|------|
| Biogenic carbon content in product                | -      | kg C |
| Biogenic carbon content in accompanying packaging | 0.0182 | kg C |

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO<sub>2</sub>.

### Installation into Building (A5)

The end-of-life stage of the product packaging is not declared in Module A5, but is instead presented as a technical scenario

information.

| Name              | Value    | Unit |
|-------------------|----------|------|
| Carton            | 4.18E-02 | kg   |
| Polyethylene Foil | 4.58E-02 | kg   |
| Wooden pallets    | 6.53E-04 | kg   |

**Life Span**

The IGP guarantees the declared service life for full film integrity at a high UV-radiation intensity (280-400nm) of 120 J/cm<sup>2</sup> per day. Adhesion (film adhesion) is the responsibility of the coating company and depends on the suitable pretreatment

of the substrate.  
According to the manufacturer's specifications, the fully cross-linked paint film corresponds to the service life of the building according to *BBSR* (BBSR, Federal Institute for Research on Building, Urban Affairs and Spatial Development, Germany).

| Name                          | Value | Unit |
|-------------------------------|-------|------|
| Life Span (according to BBSR) | 50    | a    |

**End of life/ Disposal Scenario (C4)**

| Name                                            | Value | Unit |
|-------------------------------------------------|-------|------|
| For thermal utilization without energy recovery | 1     | kg   |

## LCA: Results

The following tables show the results according to EN 15804+A2 (EF3.1).

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)**

| Product stage       |           |               | Construction process stage          |          | Use stage |             |        |             |               |                        |                       | End of life stage          |           |                  |          | Benefits and loads beyond the system boundaries |
|---------------------|-----------|---------------|-------------------------------------|----------|-----------|-------------|--------|-------------|---------------|------------------------|-----------------------|----------------------------|-----------|------------------|----------|-------------------------------------------------|
| Raw material supply | Transport | Manufacturing | Transport from the gate to the site | Assembly | Use       | Maintenance | Repair | Replacement | Refurbishment | Operational energy use | Operational water use | De-construction demolition | Transport | Waste processing | Disposal | Reuse-Recovery-Recycling-potential              |
| A1                  | A2        | A3            | A4                                  | A5       | B1        | B2          | B3     | B4          | B5            | B6                     | B7                    | C1                         | C2        | C3               | C4       | D                                               |
| X                   | X         | X             | MND                                 | MND      | MND       | MND         | MNR    | MNR         | MNR           | MND                    | MND                   | X                          | X         | X                | X        | X                                               |

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 kg IGP-HWFSuperior Series 57

| Parameter                                                               | Unit                             | A1-A3    | C1 | C2       | C3 | C4       | D |
|-------------------------------------------------------------------------|----------------------------------|----------|----|----------|----|----------|---|
| Global Warming Potential total (GWP-total)                              | kg CO <sub>2</sub> eq            | 4.65E+00 | 0  | 2.09E-02 | 0  | 2.52E+00 | 0 |
| Global Warming Potential fossil fuels (GWP-fossil)                      | kg CO <sub>2</sub> eq            | 4.62E+00 | 0  | 2.01E-02 | 0  | 2.52E+00 | 0 |
| Global Warming Potential biogenic (GWP-biogenic)                        | kg CO <sub>2</sub> eq            | 2.72E-02 | 0  | 4.42E-04 | 0  | 0        | 0 |
| Global Warming Potential luluc (GWP-luluc)                              | kg CO <sub>2</sub> eq            | 1.68E-03 | 0  | 3.33E-04 | 0  | 1.62E-04 | 0 |
| Depletion potential of the stratospheric ozone layer (ODP)              | kg CFC11 eq                      | 1.63E-11 | 0  | 2E-15    | 0  | 9.16E-13 | 0 |
| Acidification potential of land and water (AP)                          | mol H <sup>+</sup> eq            | 7.46E-03 | 0  | 7.45E-05 | 0  | 4.26E-04 | 0 |
| Eutrophication potential aquatic freshwater (EP-freshwater)             | kg P eq                          | 1.01E-05 | 0  | 8.46E-08 | 0  | 2.13E-07 | 0 |
| Eutrophication potential aquatic marine (EP-marine)                     | kg N eq                          | 2.15E-03 | 0  | 3.48E-05 | 0  | 9.41E-05 | 0 |
| Eutrophication potential terrestrial (EP-terrestrial)                   | mol N eq                         | 2.38E-02 | 0  | 3.9E-04  | 0  | 1.98E-03 | 0 |
| Formation potential of tropospheric ozone photochemical oxidants (POCP) | kg NMVOC eq                      | 8.56E-03 | 0  | 6.94E-05 | 0  | 2.63E-04 | 0 |
| Abiotic depletion potential for non fossil resources (ADPE)             | kg Sb eq                         | 5.33E-06 | 0  | 1.69E-09 | 0  | 8.29E-09 | 0 |
| Abiotic depletion potential for fossil resources (ADPF)                 | MJ                               | 8.47E+01 | 0  | 2.59E-01 | 0  | 1.25E+00 | 0 |
| Water use (WDP)                                                         | m <sup>3</sup> world eq deprived | 5.79E-01 | 0  | 2.95E-04 | 0  | 2.36E-01 | 0 |

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 kg IGP-HWFSuperior Series 57

| Parameter                                                         | Unit           | A1-A3    | C1 | C2       | C3 | C4        | D |
|-------------------------------------------------------------------|----------------|----------|----|----------|----|-----------|---|
| Renewable primary energy as energy carrier (PERE)                 | MJ             | 2.46E+01 | 0  | 2.19E-02 | 0  | 4.51E-01  | 0 |
| Renewable primary energy resources as material utilization (PERM) | MJ             | 7.02E-01 | 0  | 0        | 0  | 0         | 0 |
| Total use of renewable primary energy resources (PERT)            | MJ             | 2.53E+01 | 0  | 2.19E-02 | 0  | 4.51E-01  | 0 |
| Non renewable primary energy as energy carrier (PENRE)            | MJ             | 6.03E+01 | 0  | 2.59E-01 | 0  | 2.35E+01  | 0 |
| Non renewable primary energy as material utilization (PENRM)      | MJ             | 2.44E+01 | 0  | 0        | 0  | -2.23E+01 | 0 |
| Total use of non renewable primary energy resources (PENRT)       | MJ             | 8.47E+01 | 0  | 2.59E-01 | 0  | 1.25E+00  | 0 |
| Use of secondary material (SM)                                    | kg             | 3.85E-02 | 0  | 0        | 0  | 0         | 0 |
| Use of renewable secondary fuels (RSF)                            | MJ             | 0        | 0  | 0        | 0  | 0         | 0 |
| Use of non renewable secondary fuels (NRSF)                       | MJ             | 0        | 0  | 0        | 0  | 0         | 0 |
| Use of net fresh water (FW)                                       | m <sup>3</sup> | 2.49E-02 | 0  | 2.46E-05 | 0  | 5.66E-03  | 0 |

### RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 kg IGP-HWFSuperior Series 57

| Parameter                           | Unit | A1-A3    | C1 | C2       | C3 | C4       | D |
|-------------------------------------|------|----------|----|----------|----|----------|---|
| Hazardous waste disposed (HWD)      | kg   | 2.58E-08 | 0  | 8.37E-12 | 0  | 1.05E-09 | 0 |
| Non hazardous waste disposed (NHWD) | kg   | 1.01E+00 | 0  | 4.02E-05 | 0  | 2.52E-01 | 0 |
| Radioactive waste disposed (RWD)    | kg   | 1.09E-03 | 0  | 3.34E-07 | 0  | 3.94E-05 | 0 |
| Components for re-use (CRU)         | kg   | 0        | 0  | 0        | 0  | 0        | 0 |
| Materials for recycling (MFR)       | kg   | 0        | 0  | 0        | 0  | 0        | 0 |
| Materials for energy recovery (MER) | kg   | 0        | 0  | 0        | 0  | 0        | 0 |
| Exported electrical energy (EEE)    | MJ   | 0        | 0  | 0        | 0  | 0        | 0 |
| Exported thermal energy (EET)       | MJ   | 0        | 0  | 0        | 0  | 0        | 0 |

### RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 kg IGP-HWFSuperior Series 57

| Parameter                                       | Unit              | A1-A3    | C1 | C2       | C3 | C4       | D |
|-------------------------------------------------|-------------------|----------|----|----------|----|----------|---|
| Incidence of disease due to PM emissions (PM)   | Disease incidence | 8.26E-08 | 0  | 4.89E-10 | 0  | 4.91E-09 | 0 |
| Human exposure efficiency relative to U235 (IR) | kBq U235 eq       | 1.45E-01 | 0  | 4.67E-05 | 0  | 4.19E-03 | 0 |
| Comparative toxic unit for ecosystems (ETP-fw)  | CTUe              | 4.88E+01 | 0  | 1.9E-01  | 0  | 4.8E-01  | 0 |

|                                                              |      |          |   |          |   |          |   |
|--------------------------------------------------------------|------|----------|---|----------|---|----------|---|
| Comparative toxic unit for humans (carcinogenic) (HTP-c)     | CTUh | 1.21E-09 | 0 | 3.82E-12 | 0 | 3.9E-11  | 0 |
| Comparative toxic unit for humans (noncarcinogenic) (HTP-nc) | CTUh | 4.7E-08  | 0 | 1.7E-10  | 0 | 2.95E-09 | 0 |
| Soil quality index (SQP)                                     | SQP  | 1.1E+01  | 0 | 1.28E-01 | 0 | 4.12E-01 | 0 |

Disclaimer 1 - for the indicator "Potential human exposure efficiency relative to U235."

This impact category deals mainly with the possible impact of low-dose ionizing radiation on human health in the nuclear fuel cycle. It does not give consideration to effects due to possible nuclear accidents, occupational exposure, or radioactive waste disposal in underground facilities. Nor is potential ionizing radiation from the soil, radon, or from certain construction materials measured by this indicator.

Disclaimer 2 -for the indicators "Abiotic depletion potential for non-fossil resources," "Abiotic depletion potential for fossil resources," "Water (user) deprivation potential," "Potential comparative toxic unit for ecosystems," "Potential comparative toxic unit for humans - carcinogenic," "Potential comparative toxic unit for humans - non-carcinogenic," "Potential soil quality index." The results of this environmental impact indicator must be used with care, as the uncertainties surrounding these results are high because only limited experience with the indicator is available.

## References

### Standards

#### DIN CEN/TS 16611, Martindale Test

The Martindale test was originally an abrasion test for textiles. Since 2020, this test has been used as part of the Qualicoat tests to test the abrasion resistance of powder coatings.

#### DIN EN 12206-1

German version EN 12206-1:2021, Paints and varnishes - Coating of aluminium and aluminium alloys for architectural purposes - Part 1: Coatings prepared from thermosetting coating powder

#### DIN EN 13501-1

German version DIN EN 13501-1:2018, Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests

#### DIN EN 15804

German version EN 15804:2012+A2:2019 + AC:2021, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

#### ISO 1519

German version EN ISO 1519:2011 Paints and varnishes - Bend test (cylindrical mandrel)

#### ISO 1520

EN ISO 1520:2006 Paints and varnishes - Cupping test

#### ISO 2409

German version EN ISO 2409:2020 Paints and varnishes - Cross-cut test

#### ISO 2810

German Version EN ISO 2810:2004 Paints and varnishes - Natural weathering of coatings - Exposure and assessment

#### ISO 2813

DIN EN ISO 2813:2015, Paints and varnishes - Determination of gloss value at 20 degrees, 60 degrees and 85 degrees (ISO 2813:2014); German version EN ISO 2813:2014

#### ISO 2815

EN ISO 2815:2003, Paints and varnishes - Buchholz indentation test

#### ISO 4628-2

German version EN ISO 4628-2:2016, Paints and varnishes - Evaluation of degradation of coatings - Designation of quantity and size of defects, and of intensity of uniform changes in appearance - Part 2: Assessment of degree of blistering

#### ISO 6270-2 AT

German version EN ISO 6270-2:2018, Paints and varnishes - Determination of resistance to humidity - Part 2: Condensation (in-cabinet exposure with heated water reservoir)

#### ISO 6272-2

DIN EN ISO 6272-2: ISO 6272-2:2011, Paints and varnishes - Rapid-deformation (impact resistance) tests - Part 2: Falling-weight test, small-area indenter

#### ISO 8130-2

ISO 8130-2:2021, Coating powders - Part 2: Determination of density by gas comparison pycnometer (referee method)

#### ISO 9227

German version EN ISO 9227:2022, Corrosion tests in artificial atmospheres; Salt-spray tests

#### ISO 11664-2

German version EN ISO/CIE 11664-2:2022, Colorimetry- Part 2: CIE standard illuminants; D65 is defined as a standard illuminant with a color temperature of 6,504 Kelvin

#### ISO 14001

German and English version EN ISO 14001:2015, Environmental management systems - Requirements with guidance to use

#### ISO 14025

German and English version EN ISO 14025:2011, Environmental labels and declarations -Type III environmental declarations -Principles and procedures

#### ISO14680-2

German version EN ISO 14680-2:2006, Paints and varnishes - Determination of pigment content -Part 2: Ashing method

#### ISO 16474 Parts 1 - 3

DIN EN ISO 16474 Part 1 -3:2014, Paints and varnishes - Methods of exposure to laboratory light sources  
DIN EN ISO 16474-1:2014-03: Part 1: General guidance  
DIN EN ISO 16474-2:2014-03: Part 2: Xenon-arc lamps (e.g., WOM); irradiation, temperature cycles  
DIN EN ISO 16474-3:2014-03: Part 3: Fluorescent lamps (e.g., QUV-B); Irradiation, temperature, cycles

#### Further references

#### AAMA 2604

AAMA 2604-22, Voluntary Standards, Performance Requirements; requirements and test procedures for highly weather resistant organic coatings on aluminum profiles and

sheet metal aluminum; according to the test design of the American Architectural Manufacturers Association (AAMA)

#### **ASTM D2244**

Standard ASTM D2244-22, Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

#### **ASTM D 2794**

Standard ASTM D 2794-1993, Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)

#### **BBSR**

Federal Institute for Research on Building, Urban Affairs and Spatial Development.

[www.bbsr.bund.de](http://www.bbsr.bund.de)

#### **CIELAB or CIE**

The CIELab system is a color space defined by the International Commission on Illumination (CIE) in 1976. Color differences are determined numerically. The model attempts to adapt the geometric distance between two colors in the color space to human perception.

#### **GRM**

Quality Association for the Cleaning of Facades and Metal Facade Renovation.

[www.grm-online.de](http://www.grm-online.de)

#### **GSB International**

Certification body for assuring the quality of the coating of workpieces and the pretreatment and coating materials used in the process; [www.gsb-international.com](http://www.gsb-international.com)

#### **Hunter color space**

Color space defined by Richard Sewall Hunter in 1948 that describes color ranges using "Lab" coordinates. Like CIELAB, it was designed in such a way that color values can be transferred from the CIE-XYZ model with simple formulae, but is more uniform than the CIELAB model in terms of perception.

#### **IBU 2022**

Institut Bauen und Umwelt e.V.: General Program Instructions for the Preparation of EPDs of Institut Bauen und Umwelt e.V. (IBU). Version 2.1, Berlin: Institut Bauen und Umwelt e.V., 2022.

[www.ibu-epd.com](http://www.ibu-epd.com).

#### **PCR Part A**

PCR- Part A: Calculation Rules for the Life Cycle Assessment and Requirements for the Project Report, Berlin: Institut Bauen und Umwelt e.V., [www.ibu-epd.com](http://www.ibu-epd.com), Version 1.4 2024

#### **PCR Part B**

PCR -Part B: Requirements for the EPD for Coatings with Organic Binders, Institut Bauen und Umwelt e.V. (IBU), v7, 2024

#### **Qualicoat**

Certification body for industrial painting and coating, quality assurance, and specifications of processes, products, and quality tests [www.qualicoat.net](http://www.qualicoat.net)

#### **REACH**

Regulation (EG) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

#### **SZFF Guideline 61.01**

SZFF-Guideline 61.01, edition 2021, guideline for the maintenance and cleaning of metal facades according to the Swiss Window and Facade Center SZFF.

#### **Directive (EU) 2015/863 (RoHS 3)**

based on Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances.

#### **RoHS 2011/65/EU**

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment supersedes Directive 2002/95/EC.

#### **Sphera LCA FE (ehemals GaBi)**

Sphera LCA For Experts (formerly GaBi software system) with the respective databases Managed LCA Content MLC (formerly GaBi databases), Sphera Solutions GmbH. CUP Version: 2024.2. University of Stuttgart, Leinfelden Echterdingen, MLC data documentation at <https://sphera.com/product/sustainability-gabi-data-search/> (March 2025).

#### **Regulation (EU) 528/2012 (EU BPR)**

The Biocidal Products Regulation (BPR, Regulation (EU) 528/2012) concerns the making available on the market and use of biocidal products which are used to protect humans, animals, materials, or articles against harmful organisms such as pests or bacteria.



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