

Product category rules Part B – for flat glass in building

General product category rules for environmental product declarations according to EN ISO 14025 and EN 15804

according to the programme operation for the preparation of
environmental product declarations (EPD) of the
ift Rosenheim

Key words: Environmental Product Declaration, Flat glass, Life Cycle Assessment,
Product Category Rules



Product category rules
PCR-Part B:
Flat glass in building
PCR-FG-2.0 : 2021

Note

The present document is only a rough translation. In case of doubt, the German version applies.

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1 Preliminary remark

The product category rules of the ift Rosenheim are divided into two parts and marked accordingly. Part A contains general product category rules, while this part B contains product group-specific rules. The valid versions can be obtained from ift Rosenheim.

The European standard EN 15804 and EN 17074 provide basic product category rules for building products and services of all kinds, and in particular for flat glass products. They provide the basis for ensuring that Environmental Product Declarations for construction products, construction works and construction processes are derived, verified and presented in a uniform manner in flat glass products.

This PCR provides supplementary product category rules for Type III Environmental Product Declarations (EPD) specifically for flat glass products. The requirements in EN 15804 and EN 17074 are therefore supplemented and not replaced by this PCR.

Note

EN 17074 sets out precise specifications for the life cycle assessment and EPD preparation of flat glass products within the various phases of the life cycle; these must be observed.

2 Product category rules

2.1 Content

This PCR defines for specific product groups:

- Rules for the preparation of environmental product declarations (EPD) for
 - Single glazing and single safety glass
 - Coated glass
 - Laminated and laminated safety glass
 - Heat strengthened soda lime silicate glass
 - Insulating glass unit with and without integrated systems
 - Glass ceramics

2.2 Verification, validation and release of the PCR

The committee of experts “ift-EPD and PCR” performs the validation and thus vouches for its correctness.

Interested Parties involved in the PCR assessment:

- Ift Rosenheim

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This PCR document with the document number PCR-FG-2.0 was validated and released by the committee of experts (CE) of the ift Rosenheim GmbH. The PCR document is valid according to ISO 14025, EN 15804 and the ift guideline NA-01, five years.

Tracking of the editing / revisions:

Serial No.	Date	Editing comment	CE	Declaration code
1	12/2011	Initial verification and release	released	PCR-FG-1.1 : 2011
2	03/2012	Editorial changes	released	PCR-FG-1.1 : 2012
3	01/2013	Revision of the PCR	released	PCR-FG-1.1 : 2013
4	11/2016	Revision of the PCR	released	PCR-FG-1.2 : 2016
5	07/2018	Editorial changes	released	PCR-FG-1.3 : 2016
6	09/2019	Editorial changes	released	PCR-FG-1.3 : 2016
7	09/2020	Revision	released	PCR-FG-1.4 : 2016
8	10/2021	Revision of the PCR	released	PCR-FG-2.0 : 2021

3 General product information

3.1 Product description / Product definition

The declared products must be described.

In doing so, the trade name of the products / product groups (including any product codes) to which the EPD applies must be stated in addition to a general product description. If it is not reasonably possible to name the products / product groups, e.g. in the context of association EPDs, the product description must clearly delimit the products / product groups to which the EPD applies.

Exemplary information:

- Basic soda-lime silicate glass products
- Coated glass
- Thermally toughened soda lime safety glass and heat strengthened soda lime silicate glass (TSG)
- Hot soaked thermally toughened soda lime silicate safety glass (TSGH)
- Laminated glass and laminated safety glass
- Insulating glass unit with and without integrated systems
- fire-resistant glass
- Glass ceramics

3.2 Scope

These product category rules (PCR-FG-2.0) can be applied to:

- Basic soda lime-silicate glass products according to EN 572-9:
 - Float glass according to EN 572-2
 - Polished wired glass according to EN 572-3
 - Drawn sheet glass according to EN 572-4
 - Patterned glass according to EN 572-5
 - Wire patterned glass according to EN 572-6
 - Wired or unwired channel shaped glass according to EN 572-7
- Coated glass according to EN 1096-4
- Thermally toughened soda lime safety glass according to EN 12150-2
- Hot soaked thermally toughened soda lime silicate safety glass (TSGH) according to EN 14179-1
- Heat strengthened soda lime silicate glass (TVG) according to DIN EN 1863
- Laminated glass according to EN 14449
- Laminated safety glass according to EN 14449
- Insulating glass unit according to EN 1279
- Insulating glass unit with inserts according to EN 1279-4
- Insulating glass unit with movable sun protection systems integrated in the cavity according to ift guideline VE-07/3
- Fire resistant glass according to EN 14449
- Glass ceramics according to DIN EN 1748-2

Supplementary also for deviating production processes, as follows:

Collection of waste glass in the form of panes and surfaces. Subsequent controlled breaking into glass granulates with certain shard shapes and sizes. Preparation of the granulate and subsequent sintering. Breakage pattern and characteristics correspond to DIN EN ISO 10545 (standard for ceramic tiles and sheets) due to the changed properties of the material. The processing is carried out with natural stone and ceramic-typical tools and methods and deviates from the usual processing methods of flat glass and other standard glass products.

3.3 Application

Brief description of the scope of the declared products.

Example:

Toughened safety glass is used in interior and exterior areas for glass doors, horizontal sliding walls, glass door constructions and other glazing due to its higher resistance to mechanical and thermal stresses.

3.4 Quality assurance and management systems (optional)

In order to guarantee the quality assurance of the product, certification systems can be used. Within the framework of the EPD, information can optionally be provided on quality assurance or QMS and EMS.

Exemplary information:

Inspection

- RAL-GZ 520 RAL-Quality assurance association: Insulating glass unit
- DS/SBC 1279 DS Certification: Specific regulations for DS certification of insulating glass units in accordance with EN 1279-5

ift product certification

- QM 308 Coated glass products for heat and sun protection
- QM 314 Burglar-inhibiting retrofitting-products
- QM 327 Insulating glass unit
- QM 332 Laminated glass and laminated safety glass
- QM 333 Thermally toughened soda lime safety glass
- QM 334 Hot soaked thermally toughened soda lime silicate safety glass
- QM 335 Heat strengthened soda lime silicate glass
- QM 339 ift-certified specialist company for calculation of heat transmission coefficient
- QM 359 VOC emissions from construction products

Management systems

- Quality management DIN EN ISO 9001
- Environmental management DIN EN ISO 14001
- Energy management DIN EN ISO 50001
- Occupational health and safety management BS OHSAS 18001
- Integrated Management system (IMS)

Note

Existing data, e.g. from EMSs (environmental balances), can facilitate data collection in life cycle assessments.

3.5 Technical data / performance of the product

- Basic soda lime silicate glass products according to EN 572-9:
 - Float glass according to EN 572-2
 - Polished wired glass according to EN 572-3
 - Drawn sheet glass according to EN 572-4
 - Patterned glass according to EN 572-5

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- Wire patterned glass according to EN 572-6
- Wired or unwired channel shaped glass according to EN 572-7
- Coated glass according to EN 1096-4
- Thermally toughened soda lime safety glass according to EN 12150-2
- Hot soaked thermally toughened soda lime silicate safety glass (TSGH) according to EN 14179-1
- Heat strengthened soda lime silicate glass (TVG) according to DIN EN 1863
- Laminated glass according to EN 14449
- Laminated safety glass according to EN 14449
- Insulating glass unit according to EN 1279
- Insulating glass unit with inserts according to EN 1279-4
- Insulating glass unit with movable sun protection systems integrated in the cavity according to ift guideline VE-07/3
- Fire resistant glass according to EN 14449
- Glass ceramics according to DIN EN 1748-2-1:2004-12

Table 1 Characteristics and performance in the product category

	Characteristics and performance*	Unit
Obligation	Material thickness	m
Obligation	Grammage	kg/m ²
Obligation	Area	m ²
Obligation	Gross density	kg/m ³
Optional	Structure	mm
Optional	Dimensions (height, length, width)	mm
Optional	Heat transmission coefficient (U-value)	W/(m ² K)
Optional	Weight	kg
Optional	Moisture absorption factor	-
Optional	Gas loss rate	% a ⁻¹
Optional	Gas concentration	%
Optional	Fogging	-
Optional	Direct airborne sound insulation	dB
Optional	luminous transmission index	-
Optional	Colour rendering index	-
	If applicable, further	

* The reference product is described in the EPD with the mandatory information. The product characteristics can be given in a range to describe the reference product.

4 Raw materials

4.1 Information on SVHC according to PCR Part A

If products to which this PCR applies contain substances of very high concern (SVHC), these must be indicated in the EPD.

4.2 Additional information

The essential technical information on the product(s) or a reference to it shall be provided for the architect.

When considering the entire life cycle (cradle to grave), the product characteristics must be stated on the basis of the physical properties of the building or a reference to them.

Within the framework of the EPD, further information on building certification systems can be provided.

Example:

The physical properties of the flat glass can be found in the CE label or in the accompanying documentation.

5 Life cycle assessment

For the preparation of an EPD, a life cycle assessment according to ISO 14040 and ISO 14044 is prepared as a basis. The data on which the life cycle assessment is based should be precise, complete and consistent. This life cycle assessment must be representative of the products presented in the declaration. The scope and limits of the life cycle assessment must be specified.

5.1 Functional unit

The functional unit indicates the quantified benefit of a product system used as a comparison unit (see EN 17074 and EN 15804).

5.2 Declared unit

Declared products must be described and optionally represented graphically (e.g. CAD drawing). A functional or declared unit to which the EPD data refer must be specified.

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The following declared unit must be specified:

- - Area in m²

Example:

The functional unit for flat glass is given as an area in m², with a material thickness in m, gross density in kg/m³ and a grammage in kg/m².

5.3 Geographical and time-related system boundaries

General information according to PCR Part A.

Example:

Reference period Year 2009-2010

Reference area Europe

5.4 Scope / System boundaries

Example flat glass:

Cradle to Gate according to EN 15804+A1:

The system boundaries include the extraction of raw materials, the manufacture of the flat glass and the assembly of the individual components to the finished packaged flat glass at the factory gate.

Cradle to Gate according to EN 15804+A2:

The system boundaries include the extraction of raw materials, the manufacture of the flat glass and the assembly of the individual components to the finished packaged flat glass at the factory gate as well as the use, deconstruction, disposal and material and energy recovery of the flat glass.

Note:

For building products and materials, which are permissible as exceptions according to EN 15804+A2, the information on disposal may be omitted.

Cradle to Grave according to EN 15804+A1:

The system boundaries also include the use, deconstruction, disposal and material and energy recovery of the flat glass and its individual parts.

Cradle to Grave according to EN 15804+A2:

The system boundaries also include the assembly and the stage of use.

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5.5 Reference service life (RSL)

Use and Corresponding maintenance is of

- Single glazing is estimated at 50 years
- Coated glass is estimated at 50 years
- Laminated and laminated safety glass is estimated at 50 years
- Heat strengthened soda lime silicate glass is estimated at 50 years
- Insulating glass unit is estimated at 30 years
- Glass ceramics is estimated at 50 years

(See tables of component useful lives of the BBSR).

If the reference service life deviates, the requirements of EN 15804 must be observed.

5.6 Information on the product life cycle

Regulations to be observed during the life cycle:

Exemplary information:

Product manufacture:

- Product standard
- Applicable certification programs

Construction stage:

- Assembly guideline / instruction

Use stage:

- Information on the useful life
- Information on VOC emissions (certification programmes)
- Information on use

End-of-Life stage:

- Recycling initiatives or normal recovery and disposal systems
- Recycling rates in line with the industry standard
- Legal requirements for recovery

6 Bibliography

- [1] Research project "EPDs für transparente Bauelemente" (EPDs for transparent building components), ift Rosenheim, 2011
- [2] DIN EN 572-2
Glass in building – Basic soda-lime silicate glass products –Part 2: Float glass
Beuth Verlag GmbH, Berlin
- [3] DIN EN 572-3
Glass in building – Basic soda-lime silicate glass products –Part 3: Polished wired glass
Beuth Verlag GmbH, Berlin
- [4] DIN EN 572-4
Glass in building – Basic soda-lime silicate glass products –Part 4: Drawn sheet glass
Beuth Verlag GmbH, Berlin
- [5] DIN EN 572-5
Glass in building – Basic soda-lime silicate glass products –Part 5: Patterned glass
Beuth Verlag GmbH, Berlin
- [6] DIN EN 572-6
Glass in building – Basic soda-lime silicate glass products –Part 6: Wired patterned glass
Beuth Verlag GmbH, Berlin
- [7] DIN EN 572-7
Glass in building – Basic soda-lime silicate glass products –Part 7: Wired or unwired channel shaped glass
Beuth Verlag GmbH, Berlin
- [8] DIN EN 572-9
Glass in building – Basic soda-lime silicate glass products –Part 9: Product standard
Beuth Verlag GmbH, Berlin
- [9] DIN EN 1096-4
Glass in building – Coated glass – Part 4: Product standard
Beuth Verlag GmbH, Berlin
- [10] DIN EN 12150-2
Glass in building – Thermally toughened soda lime silicate safety glass – Part 2: Product standard
Beuth Verlag GmbH, Berlin
- [11] DIN EN 1863
Glass in building – Heat strengthened soda lime silicate glass
Beuth Verlag GmbH, Berlin
- [12] DIN EN 14449
Glass in building – Laminated glass and laminated safety glass
Beuth Verlag GmbH, Berlin
- [13] DIN EN 1279
Glass in building – Insulating glass units
Beuth Verlag GmbH, Berlin
- [14] DIN EN 1279-4
Glass in building - Insulating glass units – Part 4: Methods of test for the physical attributes of edge seal components and inserts
Beuth Verlag GmbH, Berlin
- [15] DIN EN 1748-2-1
Glass in building – Special basic products – Glass ceramics – Part 2-1: Definitions and general physical and mechanical properties
Beuth Verlag GmbH, Berlin

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- [16] DIN EN 14179-1
Glass in building – Heat soaked thermally toughened soda lime silicate safety glass – Part 1: Definition and description
Beuth Verlag GmbH, Berlin
- [17] DIN EN 17074
Glass in building - Environmental product declaration - Product category rules for flat glass products
Beuth Verlag GmbH, Berlin
- [18] ift-Guideline VE-07/3
Insulating glass unit with movable sun protection systems integrated in the cavity
ift Rosenheim, Rosenheim

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