



**Product Category Rule (PCR)
for Preparing an
Environmental Product Declaration (EPD)
for Product Group**

**Commercial Steel Doors and/or Steel Frames
UL 9005**

**VERSION (March 10th, 2015)
VALID THROUGH (March 10th, 2020)**

Product Category Rules for Part B: Commercial Steel Doors and/or Steel Frames, UL 9005

Dated March 10, 2015

Summary of Topics

Product Category Rules for Part B: Commercial Steel Doors and/or Steel Frames, UL 9005 has been issued.

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STEEL DOORS AND FRAMES

Versions overview

Version	Description	History
1	Version by UL Environment with input from a coalition was accepted by the review panel	

Editor's Notes:

This proposed **PCR** is based on modifications made to existing **PCRs** from other countries that address **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES**. In an effort to harmonize this **PCR** with existing **PCRs**, the **PCR** Guidance-Texts for doors, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), *Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, Sep 2011* and Part B: Requirements on the EPD for locks and fittings, and *Automatic Doors, Automatic Gates, and Revolving Door Systems* July 2013 were used as references.

This **PCR** was modified to reflect the North American circumstances, conformity with existing doors standards, and conformity with reference standards (ISO 21930, EN 15804). Revisions/discussion points to make this **PCR** applicable to the U.S. include: **UNITS, FUNCTIONAL UNIT**, impact assessment methods, testing methods and requirements, use phase options, references, and standards.

This **PCR** is intended to serve the global B2B and B2C markets, reflecting the global manufacturing and distribution networks for these products. It is expected that region-specific versions of this **PCR** will not differ significantly.

* * * * *

PROGRAM OPERATOR: *UL Environment*

The **PCR** has been prepared by UL Environment with input from a coalition of the following interested parties:

ASSA ABLOY
Builders Hardware Manufacturers Association
Steelcraft
Steel Door Institute

[2]

PRODUCT CATEGORY RULE

Commercial Steel Doors and/or Steel Frames
UL 9005

According to ISO 14025

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Definitions

For the purposes of this document, the following terms and definitions are per ANSI/SDI A250.7, ISO 14040:2006, ISO 14044, 14025: 2006, ISO 21930 and EN 15804 apply.

ANCILLARY INPUT – input material or product that is used by a **UNIT PROCESS** during the life cycle of the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product, but which does not constitute part of the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product [adjusted from ISO 14040 and EN 15804].

AVERAGE DATA – data representative of a product, product group or construction service, provided by more than one supplier [EN 15804].

COMPARATIVE ASSERTION – environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function [ISO 14044].

CO-PRODUCT – any of two or more products coming from the same **UNIT PROCESS** or **PRODUCT SYSTEM** [ISO 14044].

DECLARED UNIT – quantity of **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product for use as a **REFERENCE UNIT** in an EPD for an environmental declaration based on one or more **INFORMATION MODULES** [EN 15804 adapted from ISO 21930]; See also **FUNCTIONAL UNIT**. The **DECLARED UNIT** is used where the **FUNCTIONAL UNIT** and the reference scenario for the whole life cycle, on the building level, cannot be stated.

DOMINANCE ANALYSIS – an analytical quantitative (such as statistical) or qualitative ranking technique (such as ABC analysis), by means of the relative significance of contributions are examined [adjusted from ISO 14044].

DUMMY – term used by US LCI database that refers to “empty” LCI data sets in technosphere processes.

ESTIMATED SERVICE LIFE (ESL) – The average **ESL** of a building in North America is defined to be 60 years.

FUNCTIONAL UNIT – quantified performance of a **PRODUCT SYSTEM** for a building product for use as a **REFERENCE UNIT** in an EPD based on LCA [ISO 21930 adapted from ISO 14040].

INFORMATION MODULE – compilation of data to be used as a basis for a **TYPE III ENVIRONMENTAL DECLARATION** covering a **UNIT PROCESS** or a combination of **UNIT PROCESSES** that are part of the life cycle of a product [ISO 14025].

INTEGRATED BUILDING TECHNICAL SYSTEM (IBTS) – comprise installed technical equipment supporting operation of a building. This includes technical building system for HVAC, lighting, domestic hot water and other system for sanitation, security, fire safety, internal transport and building automation and control and IT communication [EN 15804]. Some **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** products may be part of the security, fire-safety, and other aspects of IBTS.

LIFE CYCLE ASSESSMENT, LCA – compilation and evaluation of the inputs, outputs and the potential environmental impacts of a **PRODUCT SYSTEM** throughout its life cycle [ISO 14044].

LIFE CYCLE INVENTORY, LCI – phase of **LIFE CYCLE ASSESSMENT** involving the compilation and quantification of inputs and outputs for a product throughout its life cycle [ISO 14040].

LIFE CYCLE IMPACT ASSESSMENT, LCIA – phase of **LIFE CYCLE ASSESSMENT** aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts for a **PRODUCT SYSTEM** throughout the life cycle of the product [ISO 14040].

NON-RENEWABLE ENERGY – energy from sources which are not defined as **RENEWABLE** energy sources [EN 15804]

NON-RENEWABLE RESOURCE – resource that exists in a finite amount that cannot be replenished on a human time scale [ISO 21930].

PCR REVIEW – process whereby a **THIRD PARTY** verifies the **PRODUCT CATEGORY RULE** [ISO 14025].

PRODUCT CATEGORY RULE, PCR – set of specific rules, requirements and guidelines for developing **TYPE III ENVIRONMENTAL DECLARATIONS** for one or more product categories [ISO 14025].

PRODUCT SYSTEM – collection of **UNIT PROCESSES** with elementary and product flows, performing one or more defined functions, and which models the life cycle of the product [ISO 14040]

PROGRAM OPERATOR– body or bodies that operate a **TYPE III ENVIRONMENTAL DECLARATION** program [ISO 14025].

*Note: A **PROGRAM OPERATOR** can be a company or a group of companies, industrial sector or trade association, public authorities or agencies, or an independent scientific body or other organization.*

REFERENCE UNIT- measure of the outputs from processes in a given **PRODUCT SYSTEM** required to fulfil the function expressed by the **FUNCTIONAL UNIT** [ISO 14044] over the **ESL** of the building or the **RSL** of the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product .

*Note: In ISO Standards, **REFERENCE UNIT** and **REFERENCE FLOW** are used interchangeably. In this **PCR** only **REFERENCE UNIT** is used.*

REFERENCE SERVICE LIFE, RSL – service life of a **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product which is known to be expected under a particular set, i.e., a reference set, of in-use conditions and which may form the basis of estimating the service life under other in-use conditions [ISO 21930].

REFERENCE SERVICE LIFE DATA, RSL DATA – Information that includes the **RSL** and any qualitative or quantitative data describing the validity of the **RSL**. Example- typical data describing the validity of the **RSL** include the description of the component for which it applies [ISO 15686-8].

RENEWABLE ENERGY – energy from **RENEWABLE** non-fossil sources [EN 15804].

Examples: wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases.

RENEWABLE RESOURCE – Resource that is grown, naturally replenished or naturally cleansed, on a human time scale [ISO 21930].

*Note: A **RENEWABLE RESOURCE** is capable of being exhausted, but may last indefinitely with proper stewardship. Examples include: trees in forests, grasses in grassland, fertile soil.*

SECONDARY FUEL – fuel recovered from previous use or from **WASTE**, which substitutes primary fuels [EN 15804].

*Note 1: Processes providing a **SECONDARY FUEL** are considered from the point where the **SECONDARY FUEL** enters the system from the previous system.*

*Note 2: Any combustible material recovered from previous use or from **WASTE** from the previous **PRODUCT SYSTEM** and used as fuel in a following system is a **SECONDARY FUEL**.*

Note 3: Examples for primary fuels are: coal, natural gas, biomass, etc.

*Note 4: Examples for **SECONDARY FUELS** recovered from previous use or as **WASTE** are: spent solvents, wood from demolition or forest slash or as bark or sawdust, tires, used motor or cooking oil, and animal fats.*

SECONDARY MATERIAL – material recovered from previous use or from **WASTE**, which substitutes primary materials [EN 15804].

*Note 1: **SECONDARY MATERIAL** is measured at the point where the **SECONDARY MATERIAL** enters the system from another system.*

*Note 2: Materials recovered from previous use or from **WASTE** from one **PRODUCT SYSTEM** and used as an input in another **PRODUCT SYSTEM** are **SECONDARY MATERIALS**.*

*Note 3: Examples for **SECONDARY MATERIALS** (to be measured at the system boundary) are recycled scrap metal, crushed concrete, glass cullet, recycled wood chips, recycled plastic.*

THIRD PARTY – person or body that is recognized as being independent of the parties involved, as concerns the issues in question. Note-"parties involved" are usually supplier ("first party") and purchaser ("second party") interests [ISO 14024].

TYPE III ENVIRONMENTAL DECLARATION – Environmental declaration providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information [EN 15804: adapted from ISO 14025].

Note: The calculation of predetermined parameters is based on the ISO 14040 series of standards, which is made up of ISO 14040, and ISO 14044. The selection of the predetermined parameters is based on ISO 21930.

UNIT - the set of the fewest **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** elements which comprise one complete **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** product. More than one **UNIT** may be required in use, but less than one **UNIT** cannot perform the required function.

UNIT PROCESS – the smallest element considered in the LCI for which input and output data are quantified [ISO 14040].

WATER CONSUMPTION – water removed from but not returned to the same drainage basin

*Note 1: **WATER CONSUMPTION** can be because of evaporation, transpiration, product integration or discharge into a different drainage basin or the sea. Evaporation from reservoirs can be included in **WATER CONSUMPTION** [ISO/DIS 14046].*

Note 2 Refer to ISO 14046 for all terms relating to types and classifications of water and water footprint assessment.

WASTE – substances or objects that the holder intends or is required to dispose of [ISO 14040].

References

1. General Standards for STEEL DOORS AND FRAMES Products

- ANSI/SDI A250.3-2007 (R2011) Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames
- ANSI/SDI A250.4-2011 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors
- ANSI/SDI A250.8-2003 (R2008) Recommended Specifications for Standard Steel Doors and Frames
- ANSI/ SDI A250.10-1998 (R2011) Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames
- ANSI/UL 1784-2001 Air Leakage Test of Door Assemblies
- ASTM E1332 Standard Classification for Rating Outdoor-Indoor Sound Attenuation
- ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- SDI 113-13 Standard Practice for Determining the Steady-State Thermal Transmittance of Steed Door and Frame Assemblies

2. General and Building Sector Specific ISO Standards and others for LCA, PCR and EPDs

ISO 14040: 2006 Environmental management -- Life cycle assessment -- Principles and framework

ISO 14044: 2006 Environmental management -- Life cycle assessment -- Requirements and guidelines

ISO 14025: 2006 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures

ISO/DIS 14046:2013, Environmental management- Water footprint- Principles, requirements and guidelines

ISO 15392:2008, Sustainability in building construction- General principles

ISO 15686-1:2011, Buildings and constructed assets- Service life planning- Part 1: General principles

ISO 15686-8:2008, Buildings and constructed assets- Service life planning Part 8: Reference service life and service life estimation

ISO 21930: 2007 Sustainability in building construction -- Environmental declaration of building products

EN 15804: 2012 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products

3. Federal Standards and SOPs

40 CFR 50 Protection of Environment - Part 50: National Primary and Secondary Ambient Air Quality Standards (U.S) (<http://www.epa.gov/air/criteria.html>)

CAA 112(r) Clean Air Act (U.S)
(http://www.epa.gov/oem/docs/chem/caa112_rmp_factsheet.pdf)

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CERCLA Hazardous Substances (U.S)

(<http://www.epa.gov/oem/content/hazsubs/cercsubs.htm>)

EPCRA 313 Toxic Release Inventory Reporting (U.S)

(<http://www.ecy.wa.gov/ePCRA/section313.html>)

OSHA 1910.1200 Hazardous Communication Standard—Toxic and Hazardous Substances (U.S)

(http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10099)

U.S EPA, ORD/NRMRL/Sustainable Technology Division, Systems Analysis Branch, SOP No. S-10637-OP-1-0- Tool for the Reduction and Assessment of Chemical and other Environmental Impacts (TRACI), Software Name and Version Number: TRACI version 2.1, USER'S MANUAL, 24 July, 2012

4. Relevant PCRS

Product Category Rules for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU): Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, Sep 2011

PCR Guidance-Texts for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), *Part B: Requirements on the EPD for locks and fittings*, July 2013

Institute Construction and Environment (IBU) e.V. 2012 Part B: Requirements on the EPD for Automatic Doors, Automatic Gates, and Revolving Door Systems

Institute Construction and Environment (IBU) e.V. 2012 Part B: Requirements on the EPD for Windows and Doors v1.1

List of Abbreviations

For the purposes of this document, the following abbreviations are per ANSI/SDI A250.7, ISO 14040:2006, ISO 14044, 14025: 2006, ISO 21930 and EN 15804:

ADPE – Abiotic Depletion Potential for Non-Fossil Resources
ADPF – Abiotic Depletion Potential for Fossil Resources
ANSI – American National Standards Institute
AP – Acidification Potential of Soil and Water
ASTM – American Society for Testing and Materials
BH – Builders Hardware
CAA – Clean Air Act (U.S)
CDM – Clean Development Mechanism
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
CFR – Code of Federal Regulations
CPS – Construction Process Stage
CRU – Components for Reuse
DIS – Draft International Standard
EEE – Exported Electrical Energy
EET – Exported Thermal Energy
EN – European Standard
EP – Eutrophication Potential
EPA – Environmental Protection Agency
EPCRA – Emergency Planning and Community Right-to-Know Act
EPD – Environmental Product Declaration
FW – Net Consumption of Water
GWP – Global Warming Potential
HVAC – Heating, Ventilation, and Air Conditioning
IBTS – Integrated Building Technical System
HWD – Hazardous Waste Disposed
IBU – Institute Construction and Environment
ISO – International Organization for Standardization
LCA – Product Life Cycle Assessment
LCI – Life Cycle Inventory
LCIA – Life Cycle Impact Assessment
LEED – Leadership in Energy and Environmental Design
LHV – Lower Heating Value (net caloric value)

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MET – Materials for Energy Recovery
MFR – Materials for Recycling
MSDS – Material Safety Data Sheet
NHWD – Non-Hazardous Waste Disposed
NRSF – Use of Non-Renewable Secondary Fuel
ODP – Depletion Potential of the Stratospheric Ozone Layer
PCR – Product Category Rule
PENRE – Non-Renewable Primary Energy and Energy Carrier
PENRM – Non-Renewable Primary Energy as Material Utilization
PERE – Renewable Primary Energy as Energy Carrier
PERM – Renewable Primary Energy as Material Utilization
PERT – Total Use of Renewable Primary Energy Resources
PM – Particulate Matter
POCP – Formation Potential of Tropospheric Ozone
RSF – Use of Renewable Secondary Fuel
RSL – Reference Service Life
RWD – Radioactive Waste Disposed
SM – Use of Secondary Material
SDI – Steel Door Institute
VER – Verified Emission Reduction

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Acknowledgements

This draft **PCR** has been prepared with input from the following organizations:

- ASSA ABLOY
- Builders Hardware Manufacturers Association
- Steelcraft
- Steel Door Institute

The following members comprised the **PCR** Peer Review Panel:

- Aaron Smith, ASSA ABLOY
- Don Baker, Allegion
- Jamie Meil, ATHENA Sustainable Materials Institute

1.0 Introduction to the PRODUCT CATEGORY RULES (PCR)

1.1 Purpose of the PCR

The intended application of this **PRODUCT CATEGORY RULE (PCR)** document is to provide a common set of specific rules, requirements and guidelines for developing ISO 14025 conformance Type III Environmental Product Declarations (EPDs) for **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** produced for use in North America and to specify the underlying requirements of the **LCA** in conformance with ISO 14040 series of **LCA** standards. This information is intended to complement existing environmental impact metrics in LEED. For example, these PCR facilitate the creation of Environmental Product Declarations that will satisfy optional criteria within the LEED V.4.0 standard.

The primary users of this **PCR** will be the Steel Door Institute (SDI) and its member companies. Other North American or global manufacturers could use this **PCR** as well.

This **PCR** document does not address either the economic or social aspects of **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES**.

1.2 Scope of the PCR

This PCR is valid for **COMMERCIAL STEEL DOORS OR FRAMES AS WELL AS DOORS WITH FRAMES** (frames for use with doors manufactured from wood, steel, or other materials) produced for use in North America. The Scope of this PCR includes products covered in ANSI/SDI A250.8-2003 (R2008).

Components such as hinges, exit devices, door controls, etc. are covered under the Builders Hardware PCR.

This PCR covers commercial steel doors and steel frames as defined by ANSI A250.8. UL Environment recognizes, under ISO 14025, PCRs are intended to be function/service specific as opposed to material specific. When forming the PCR committee, UL Environment reached out to other door associations in an effort to represent a broader range of materials in this PCR, intending to develop a comprehensive, material inclusive PCR for doors. However, no

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other door material associations agreed to participate in the development of this PCR and so it has been limited to steel. UL Environment remains open to greater inclusion and harmonization efforts in the future.

1.3 Period of Validity of the PCR

This PCR is valid for a period of 5 (five) years from the date of the publication. This PCR may be revised sooner by the primary users identified in Section 1.1.

1.4 Content of the PCR

This PCR specifies the rules for the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES PRODUCT CATEGORY** as regards to:

- the calculation criteria for the **LIFE CYCLE ASSESSMENT (LCA)**,
- the rules for the creation of a Background Report on the **LCA**, and
- the rules for the creation of the Environmental Product Declaration (EPD).

1.5 Harmonization

In developing this PCR, UL Environment took every effort to harmonize the PCR development work with existing PCRs for doors. The PCR development process, for instance, began with a search for existing valid PCRs on this particular product category. The following PCR documents from the German Institute for Construction and Environment (IBU) were valid and considered in the development of this PCR:

- Product Category Rules for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU): *Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report, Sep 2011*
- PCR Guidance-Texts for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU),

The IBU PCR was modified for North American circumstances for the following reasons:

- the IBU PCR strictly follows the EN 15804:2012 standard, developed by regulatory and policy organizations in the European Union and developed by European experts rightly

reflecting the interests, practices, and supply chain aspects in the EU. The **PCR** development team recognized the need for developing a separate **PCR**, compliant with ISO 14025 and ISO 21930, for **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** manufactured for use in North America;

- the **IBU PCR** requires applying European category-impact-characterization factors. Instead, the USA Environmental Protection Agency's Tools for the Reduction and Assessment of Chemical and other environmental Impacts (TRACI) system of characterization factors shall be applied for North American **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES LCA** reports and EPDs;
- the **IBU PCR** requires applying European based background **LCI** data sources. Instead, data sources representative of North American circumstance and conditions (e.g., US **LCI** database, US **EI** database, etc.) shall be used for North American **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES LCA** reports and EPDs;
- the **IBU PCR** is based on European technical requirements and reference standards which are different from North American standards. As specified in Section 2, North American reference standards and technical requirements shall be used to describe the North American **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** products;
- the **IBU PCR** documents follow a specific structure. It consists of a generic **IBU PCR** Part A document applicable for all **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** products and a product specific **IBU PCR** Part B. This North American **PCR** adopts a different structure and is a standalone document;
- the **IBU PCR** follows European regulations for hazardous and toxic materials and substances. North American regulations are different from European. This North American **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES PCR** specifies hazardous and toxic materials and substances in accordance with regulations applicable in the North American countries for which the **PCR** is to be valid;

Despite the above variations, the **PCR** team adopted almost all **LCA** technical aspects of the **IBU PCR**, for instance -

- the modular approach,
- **PRODUCT SYSTEM** boundary,
- life cycle stages definition and processes,
- environmental parameters derived from **LCA** including parameters describing environmental impacts, parameters describing resource use, and parameters describing different **WASTE** categories and output flows,

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- additional technical information for the optional “construction, use and end-of-life” life cycle stages,
- additional environmental information during the use stage which is not covered by the **LCIA**,
- allocation rules,
- the EPD content template, etc. -

in order to develop this North American **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES PCR** and maintain a comparable level of harmonization.

2.0 Rules for Completing the LCA and Background Report

A **LIFE CYCLE ASSESSMENT (LCA)**, **LIFE CYCLE INVENTORY (LCI)** and/or **INFORMATION MODULES**, complying with ISO 14040/14044, describing the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** and based on transparent and credible data, must be presented in the Background Report to support the EPD. Additionally, model assumptions with a significant influence on the declared results must be clearly stated in the Background Report and the EPD.

The **LCA** Background Report shall be made available to the verifier with the requirements on confidentiality stated in ISO 14025. The Background Report is not part of the public communication.

The life-cycle stages which are taken into account in the Assessment must be thoroughly presented in relation to the considered processes. The Product Stage must always be thoroughly presented. Construction Process, Use, and End-of Life Stages are defined as optional. If included, assumptions and key parameters considered in these optional stages must be clearly stated.

COMPARATIVE ASSERTIONS with other products are inadmissible. The Background Report and EPD structures shall comply with the structure specified in Section 2.2 of this document.

2.1 Rules for Completing the LIFE CYCLE ASSESSMENT

2.1.1 Product Category Definition

COMMERCIAL STEEL DOORS AND STEEL FRAMES PRODUCT CATEGORY encompasses commercial doors and frames manufactured from steel. These products, in combination with builders hardware, are used to provide access to a building.

2.1.2 DECLARED UNIT/ FUNCTIONAL UNIT

The declared unit is defined as:

A. One commercial steel door of nominal dimensions of 3-feet by 7-feet considered in isolation.

OR

B. One commercial steel door of nominal dimensions of 3-feet by 7-feet used in conjunction with one three-sided steel frame that can fit a door with nominal dimensions of 3-feet by 7-feet.

OR

C. One commercial three-sided steel frame that can fit a door with nominal dimension of 3-feet by 7-feet.

- For A and B, a scaling factor based on one square foot of commercial steel door shall be provided
- For B and C, a scaling factor based on one linear foot of steel frame shall be provided
- Doors with dimensions other than 3-feet by 7-feet may be reported
- Frames capable of supporting dimensions other than 3-feet by 7-feet may be reported

Builders hardware such as hinges or exit devices shall not be included. The **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** shall conform to ANSI/SDI A250.8-2003 (R2008) and include a prime painted finish per ANSI A250.10.

The Background Report and EPD must clearly state whether both door and frame are included in the declared unit or if the analysis is for the frame only.

The REFERENCE UNIT is the total mass of material in one declared unit. The declared unit and the mass reference in kg must be indicated.

As required in ISO 21930, Clause 6.2.3, information provided using a **DECLARED UNIT** shall not be used for purposes of comparing **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** EPDs. To make such comparisons between EPDs, a **FUNCTIONAL UNIT** must be defined and a “cradle to grave” LCA of **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** must be conducted.

A **DECLARED UNIT** is used instead of a **FUNCTIONAL UNIT** when the precise function of the product or scenario(s) at the building level is not stated or is unknown [EN 15804] throughout the cradle-to-grave life cycle. A **DECLARED UNIT** provides a reference by means of which the material flows of the **INFORMATION MODULES** of **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES** are normalized (in a mathematical sense) to produce data, expressed on a common basis [ISO 21930, EN 15804], to one unit.

Based on ISO 14044, a **PRODUCT SYSTEM** may fulfil a number of possible functions and the one(s) selected for a LCA study depend(s) on the goal and scope of the LCA.

For a particular LCA, not all functions may be relevant and the relevant ones must be identified. The **FUNCTIONAL UNIT** quantifies the performance characteristics of the identified functions of the **COMMERCIAL STEEL DOORS AND/OR STEEL FRAMES**, for use as a **REFERENCE UNIT** (Reference Unit) in an EPD.

If the **FUNCTIONAL UNIT** covers only one function, and additional functions are not taken into account then these omissions shall be explained and documented.

For purposes of defining the **FUNCTIONAL UNIT** and the **REFERENCE UNIT**, an average **ESTIMATED SERVICE LIFE (ESL)** of a building in North America of 60 years shall be applied.

2.1.3 Product Description

The product to be assessed shall be described in reference to its technical and functional properties and its application ranges.

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