

Addendum for Adapting the IBU PCR Part B for use in North America

Guidance to the IBU Part B: *Requirements on the EPD for System floors*

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Version: 1.0, November 27, 2017

Valid Until:
November 26, 2020

1.0 Introduction

This PCR Addendum was developed following ISO 14025, Section 6.7.1, and provides guidance for EPDs in North America, based on the existing PCR from the Institut Bauen und Umwelt e.V. - PCR Part B: Requirements on the EPD for System floors (henceforth referred to as “IBU Part B PCR for System floors”)¹. This PCR Addendum is a ‘living document’, and is subject to periodic updates. Please note, this PCR Addendum may be superseded, once a North American-specific Product Category Rule for system floors is developed.

This PCR Addendum provides the requirements to adapt the IBU Part B PCR for System floors for use in North America, and includes guidance for:

- conducting the Life Cycle Assessment (LCA), and
- creating the Environmental Product Declaration (EPD).

This PCR Addendum was reviewed by LCA expert, Tom Gloria, of Industrial Ecology Consultants, prior to initial publication.

Scope of Validity of this PCR Addendum

The PCR applies to system floors, which are standardized modular systems raised by means of a substructure such as elevated and hollow floors for interior applications. Further applicable reporting requirements are given in Product Category Rules for Building-Related Products and Services Adapted for UL Environment from the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU) Part A (v1.3). Adaptions listed in this Addendum make the PCR applicable to North America and rely on the previously adapted IBU Part A by UL Environment to North America, which include, but are not limited to: units, functional unit, impact assessment methods, testing methods and requirements, use phase options, references, datasets, and standards. The intent is to follow ISO 14025, Section 6.7.1, and utilize the existing PCR from the Institut Bauen und Umwelt e.V. Part B: Requirements on the EPD for System floors, justifying differences based on region, rather than origin. Ultimately, the revisions are not modifications to the overall methodology or structure of the IBU PCR Part A, but are intended to reflect practices, methods and requirements that are specific to North America.

¹ Institut Bauen und Umwelt e.V., (IBU). PCR Guidance-Texts for Building-Related Products and Services. Part B: Requirements on the EPD for System floors. Version 1.0, 2016.

2.0 Specific Adaptions to the IBU Part B PCR for System floors

Product-group-specific LCA calculation rules from PCR part B

The following provides North American specific guidance to the IBU Part B for System floors. For ease of use, *the section numbering below follows the same section number in the Part B.*

2.1 Product description / Product definition: The declared products shall be described. For the use and application of the product in North America, the respective national provisions at the place of use apply. For example, International Code Council Evaluation Services' (ICC-ES) AC300 Access Floors² for the United States market or the National Research Council (NRC) of Canada³ for the Canadian market, or their equivalent.

2.3 Technical Data: The product specifications and performance to the following standard shall be declared:

- Ceilings & Interior Systems Construction Association (CISCA) – Recommended Test Procedures for Access Floors⁴

2.5 Base materials / Ancillary materials: Materials and substances according to government regulations adversely affecting human health and the environment, in all stages of the life cycle shall be included in the LCA, independent of the cut-off rules. The use of raw materials in manufacture of the system floor based on the criteria below shall be disclosed, regardless of their amounts:

- Any material or chemical agent that is required to be disclosed on a product safety data sheet (SDS) as required by OSHA Hazardous Communication Standard⁵, or other applicable national regulation.
- Any material or chemical agent emitted to the atmosphere subject to the requirements of US EPA regulation⁶ including Criteria Air Pollutants and Hazardous Air Pollutants⁷ emitted at levels requiring an Air Operating Permit.
- For products manufactured in the US, any material or chemical agent required to be reported by the US EPA toxic release inventory (TRI)⁸.

² <http://shop.iccsafe.org/ac300-access-floors-approved-oct-2010-editorially-revised-march-2014-pdf-download.html>

³ <http://nparc.cisti-icist.nrc-cnrc.gc.ca/eng/view/object/?id=49ffad95-b6db-47ae-a4f6-c6588e825357>

⁴ http://www.asmproducts.com/cisca_standards.htm

⁵ 29 CFR Part 1910, Occupational Safety and Health Standards, Toxic and Hazardous Substances, 1910: 1200, Hazard Communication. www.gpo.gov

⁶ US EPA Clean Air Act 1990 <http://www.epa.gov/airquality>

⁷ US EPA criteria and hazardous air pollutants, <http://www.epa.gov/airquality>

⁸ US EPA Toxics Release Inventory (TRI) Program <https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals>

- Any material or chemical agent which requires disclosure according to the US EPA including: EPCRA Section 302 Extremely Hazardous Substances (EHSs)⁹, CERCLA Hazardous Substances¹⁰, EPCRA Section 313 Toxic Chemicals, CAA 112(r) Regulated Chemicals For Accidental Release Prevention¹¹.
- Any waste material or agent meeting the requirements of a RCRA¹² waste (including chemicals listed as a P-listed; K-listed; and U-listed).
- Any material or chemical agent which requires disclosure according to California State Proposition 65: Safe Drinking Water and Toxic Enforcement Act of 1986¹³.
- Any material or chemical agent which has been identified by the Stockholm Convention as a Persistent Organic Pollutant¹⁴.
- For products manufactured in Canada, any material or chemical agent required to be reported by Canada's National Pollutant Release Inventory (NPRI)¹⁵.
- For products manufactured in Mexico, any material or chemical agent required to be reported by Mexico's Ministry of Environment and Natural Resources' (SEMARNAT) Pollutant Release and Transfer Register (Registro de Emisiones y Transferencia de Contaminantes)¹⁶.

2.12 Reference service life: The RSL must refer to the declared technical and functional quality of the product. It must be established in line with all of the specific rules in the US product standards and must also take into consideration the ISO 15686-1, -2, -7 and -8 standards. Where information is available for deriving the RSL from North American product standards, such data has priority. If North America and/or U.S. product standards are unavailable, the relevant ISO standards should be used. If ISO standards are also unavailable, use European standard from IBU PCR.

2.13 Extraordinary effects: If relevant, information on fire performance according to the International Code Council (ICC) and National Fire Protection Association (NFPA) should be provided.

⁹ US EPA Emergency Planning and Community Right-to-Know Act 1986. <http://www.epa.gov/oem/content/epcra>

¹⁰ US EPA Comprehensive Environmental Response, Compensation and Liability Act 1980.

<http://www.epa.gov/superfund/policy/cercla.htm>

¹¹ US EPA Clean Air Act Section 112(r): Accidental Release Prevention / Risk Management Plan Rule.

<https://www.epa.gov/rmp/fact-sheet-clean-air-act-section-112r-accidental-release-prevention-risk-management-plan-rule>

¹² US EPA Resource Conservation and Recovery Act 1986 <http://www.epa.gov/lawsregs/rcra.html>

¹³ <https://oehha.ca.gov/proposition-65/proposition-65-list>

¹⁴ Secretariat of the Stockholm Convention, 11-13 Chemin des Anémones – 1219 Chatelaine, Switzerland. <http://www.chm.pops.int>

¹⁵ Environment Canada. National Pollutant release Inventory (NPRI).

<https://www.canada.ca/en/services/environment/pollution-waste-management/national-pollutant-release-inventory.html>

¹⁶ SEMARNAT *Registro de Emisiones y Transferencia de Contaminantes*.

<http://www.semarnat.gob.mx/temas/gestion-ambiental/calidad-del-aire/registro-de-emisiones-y-transferencia-de-contaminantes-retc>

Fire resistance and combustibility of an access floor system should be assessed and reported in accordance with the ASTM E-84¹⁷ and ASTM E-136¹⁸ test methods, respectively.

2.15 Disposal: The possible disposal channels shall be indicated even if the end-of-life stage is not included in the scope of the LCA. If end-of-life is included, assumptions used for the LCA modeling shall be stated. For disposal of products in the U.S., the US EPA Waste disposal statistics¹⁹ should be used to inform the scenario.

3.5 Background Data: For modeling the electricity use at a manufacturing facility in the United States, the U.S. EPA eGRID electricity supply mixes should be used, accounting for losses due to transmission and distribution. For regions outside the US, comparable sub-national electricity supply mixes should be used. If this information is not available at a sub-national basis, then an electricity supply mix representative of the country should be used. Any deviations from this guidance shall be justified.

3.9 Comparability: Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of system floors should use EPD information and shall consider the building context, such as the product’s use and impacts at the building level, as well as its technical performance. Essentially, full conformance with the PCR for system floors allows EPD comparability only when all stages of a life cycle have been considered. Variations and deviations are possible when different LCA software and background LCI datasets are used, which may lead to differences in results.

5. LCA: Results: The following information on environmental impacts is expressed by the impact category indicator results using characterization factors based on the current version of U.S. Environmental Protection Agency’s Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI)²⁰. These predetermined parameters are required and shall be included in the EPD, at a minimum, as follows:

Global Warming Potential (IPCC 2013 AR5,GWP 100 years) (Fossil)	kg CO ₂ equiv.
Ozone Depletion Potential (stratospheric)	kg CFC 11 equiv.
Acidification Potential (land and water)	kg SO ₂ equiv.
Eutrophication Potential (land and water)	kg N equiv.
Smog Formation Potential	kg O ₃ equiv.
Abiotic Resource Depletion Potential of Non-renewable (fossil) energy resources	MJ, LHV

Number reporting format shall use decimals instead of commas.

¹⁷ <https://www.astm.org/Standards/E84.htm>

¹⁸ <https://www.astm.org/Standards/E136.htm>

¹⁹ <https://www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures-report>

²⁰ <https://www.epa.gov/chemical-research/tool-reduction-and-assessment-chemicals-and-other-environmental-impacts-traci>

In addition, to achieve conformance with EN 15804, results shall additionally be reported as follows using the characterization factors CML-IA version 4.1 (baseline method) from October 2012²¹. These predetermined parameters shall be included in the EPD as follows:

Global Warming Potential (GWP) (Fossil)	kg CO ₂ equiv.
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 equiv.
Acidification Potential of soil and water (AP)	kg SO ₂ equiv.
Eutrophication Potential (EP)	kg (PO ₄) ³⁻ equiv.
Photochemical Oxidant Creation Potential (POCP)	kg ethane equiv.
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb equiv.
Abiotic depletion potential (ADP-fossil fuels)	MJ (lower calorific)

In addition to reporting the life cycle impact assessment, the following environmental parameters shall be reported:

- Reported parameters shall be declared per EN 15804 Section 7.2, Tables 3, 4, 5 and 6
 - Parameters describing environmental impact
 - Parameters describing resource use
 - Other environmental information describing waste categories
 - Other environmental information describing output flows

US conventional spelling shall be used in inventory names.

7 Requisite Evidence: If relevant to the scope of the declared product, or due to the product material composition, it is recommended to provide sufficient supporting documentation in the EPD and LCA Report. When providing documentation, testing protocols and other relevant information shall be indicated. If supporting documentation is not provided, the reasons shall be indicated in the EPD and LCA Report.

As a general rule, all statements shall be documented and supported as established by the Federal Trade Commission’s Green Guides, 16 CFR Part 260. For Canadian manufacturers, all statements shall also be documented and supported as established by Competition Bureau Canada’s Environmental Claims: A Guide for Industry and Advertisers. In the case of non-verifiable substances, the limit of detection shall be included in the declaration. Interpreting statements such as “...free of...” or “...are entirely harmless...” are not permissible.

7.1 Formaldehyde: For wood materials whose adhesive system contain formaldehyde, the measurement method shall be indicated. Measurement in accordance with one of the following or its equivalent:

²¹ https://www.universiteitleiden.nl/en/science/environmental-sciences/tools-and-data#CML_IA

- U.S Environmental Protection Agency Formaldehyde Emission Standards for Composite Wood Products²²
- California Air Resources Board Airborne Toxic Control Measure (ATCM) for formaldehyde requirements²³
- Test method following ISO 16000-3: 2010, ISO 16000-6: 2011, ISO 16000-9: 2006, ISO 16000-11:2006

7.2 MDI: For wood materials whose adhesive system contains MDI, the measurement method shall be indicated. Measurement in accordance with the following or its equivalent:

- Occupational Safety and Health Administration (OSHA) Method ORG-47²⁴

7.3 Testing pretreatment of substances used: For system floors containing base materials indicated as “waste wood” as a resource, the measurement method shall be indicated. Measurement in accordance with one of the following or its equivalent:

- California Code of Regulations, Title 22, Division 4.5, Chapter 11²⁵
- American Wood Protection Association (AWPA) Standards²⁶

7.4 Fire gas toxicity: This is optional information; this measurement is specified for wood materials used in meeting venues. Measurement in accordance with the following or its equivalent:

- ASTM E1678-15²⁷

7.5 VOC emissions: For products used in indoor applications, the measurement method shall be indicated. Measurement in accordance with the following or its equivalent:

- California Department of Public Health (CDPH)/Environmental Health Laboratory Branch (EHLB) Standard Method v.1.2-2017 (CA 01350), using the applicable exposure scenario²⁸

3.0 Reporting Requirements

The information below shall be reported when creating an EPD using this Addendum.

The following general information shall be declared:

- Name of program operator
- Reference to General Program Instruction and version number
- Manufacturer(s) name and address

²² <https://www.gpo.gov/fdsys/pkg/FR-2016-12-12/pdf/2016-27987.pdf>

²³ <https://www.arb.ca.gov/regact/2007/compwood07/fro-final.pdf>

²⁴ <https://www.osha.gov/dts/sltc/methods/organic/org047/org047.html>

²⁵ <http://www.dtsc.ca.gov/LawsRegsPolicies/Title22/>

²⁶ <http://www.awpa.com/standards/index.asp>

²⁷ <https://www.astm.org/Standards/E1678.htm>

²⁸ https://www.scsglobalservices.com/files/program_documents/cdph-iaq_standardmethod_v1_2_2017.pdf

- Declaration number
- The site(s), manufacturer or group of manufacturers or those representing them for whom the results of the LCA are representative.
- Designation as Industry Wide or Company Specific EPD
- Product identification by name (including production code) and a simple visual representation of the product to which the EPD is developed
- Declaration date of issue and period of validity
- Reference PCR and version number
- Market(s) of applicability
- EPD scope: cradle to gate, cradle to gate with options (specify options), or cradle to grave
- Range of dataset variability (industry-wide EPDs only; mean, median, and standard deviation)
- Year(s) of reported manufacturer primary data (Manufacturer specific data shall be no more than five years old)
- LCA software used and version number
- LCI database(s) used and version number
- LCIA methodology and version number
- Green Building Certification Schema, if applicable
- PCR, LCA, and EPD verification information
- The following statements or equivalent statements:
 - Environmental declarations from different programs (ISO 14025) may not be comparable.
 - “Comparison of the environmental performance of system floors using EPD information shall be based on the product’s use and impacts at the building level, and therefore EPDs may not be used for comparability purposes when not considering the building context”.
 - “Full conformance with the PCR for system floors allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible”. Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.
- Any comparability limitations

The following technical information shall be declared:

- Product image
- Description of the product’s use and the functional or declared unit of the product
- A general specification for the composition of the products

- Description of product reference service life (RSL), if applicable
- A diagram of the life cycle stages and information modules included in the LCA
- Cut-off criteria statement
- Declaration of environmental parameters derived from LCA, specified in “5. LCA: Results” of this Addendum

4.0 References

- EN 15804: 2012+Appendix1-2013 – Sustainability of Construction works – Environmental Product Declarations – Core rules for the product category of construction products.
- ISO 14025: 2006 – Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- 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 System floors”
- Product Category Rules for Building-Related Products and Services, Adapted for UL Environment 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 Project Report,” v1.3, July 2014
- Product Category Rules for Building-Related Products and Services, Institute Construction and Environment e.V. (IBU), “Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report,” v1.5, November 2016
- SCS Type III Environmental Declaration Program: Program Operator Manual v8.0. April 2017. SCS Global Services.