

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

## Guidance to the IBU Part B: *Requirements on the EPD for Mineral panels*

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## 1.0 Introduction

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This PCR Addendum was developed following ISO 14025<sup>1</sup>, clause 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 Mineral panels Version 1.0 (henceforth referred to as “IBU Part B PCR for Mineral panels”)<sup>2</sup>. 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 Please note, this PCR Addendum may be superseded, once a North American-specific Product Category Rule for Mineral panels is developed.

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

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

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

### Scope of validity of this PCR Addendum

This PCR Addendum applies to mineral panels, including wet-felted panels comprising of mineral wool fillers and binding agents mixed with water (or other auxiliaries) to form a paste before being shaped as a panel and dried. 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 Mineral panels, 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.

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<sup>1</sup> ISO 14025: 2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures

<sup>2</sup> Institut Bauen und Umwelt e.V., (IBU). PCR Guidance-Texts for Building-Related Products and Services. Part B: Requirements on the EPD for Mineral panels. Version 1.0, 2013, or most current version.

## 2.0 Specific Adaptions to the IBU Part B PCR for Mineral panels

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

The intent of the PCR Addendum is to augment the IBU Part B with guidance, as applicable, for products manufactured in North America. Where noted, the guidance of the PCR Addendum supersedes the IBU PCR Part B.

The following provides North American specific guidance to the IBU Part B for Mineral panels. 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)<sup>3</sup> for the United States market or the National Research Council (NRC) of Canada<sup>4</sup> for the Canadian market, or their equivalent.

**2.3 Technical Data:** The following guidance supersedes IBU Part B (Section 2.3): The product specifications and performance to the relevant national standards, as applicable, shall be declared.

**2.5 Base materials / Ancillary materials:** Declaration of substances in the product must also include the following, 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 Standard<sup>5</sup>, or other applicable national regulation.
- Any material or chemical agent emitted to the atmosphere subject to the requirements of US EPA regulation<sup>6</sup> including Criteria Air Pollutants and Hazardous Air Pollutants<sup>7</sup> 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)<sup>8</sup>.
- Any material or chemical agent which requires disclosure according to the US EPA including: EPCRA Section 302 Extremely Hazardous Substances (EHSs)<sup>9</sup>, CERCLA Hazardous Substances<sup>10</sup>,

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<sup>3</sup> [http://shop.iccsafe.org/catalogsearch/result/?form\\_key=UwvlsnHDXdpD2SJG&scope=0&q=mineral+boards](http://shop.iccsafe.org/catalogsearch/result/?form_key=UwvlsnHDXdpD2SJG&scope=0&q=mineral+boards)

<sup>4</sup> [https://www.nrc-cnrc.gc.ca/eng/publications/codes\\_centre/codes\\_guides.html](https://www.nrc-cnrc.gc.ca/eng/publications/codes_centre/codes_guides.html)

<sup>5</sup> 29 CFR Part 1910, Occupational Safety and Health Standards, Toxic and Hazardous Substances, 1910: 1200, Hazard Communication. [www.gpo.gov](http://www.gpo.gov)

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

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

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

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

<sup>10</sup> US EPA Comprehensive Environmental Response, Compensation and Liability Act 1980.

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

EPCRA Section 313 Toxic Chemicals, CAA 112(r) Regulated Chemicals For Accidental Release Prevention<sup>11</sup>.

- Any waste material or agent meeting the requirements of a RCRA<sup>12</sup> 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 1986<sup>13</sup>.
- Any material or chemical agent which has been identified by the Stockholm Convention as a Persistent Organic Pollutant<sup>14</sup>.
- For products manufactured in Canada, any material or chemical agent required to be reported by Canada's National Pollutant Release Inventory (NPRI)<sup>15</sup>.
- 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)<sup>16</sup>.

**2.7 Environment and health during manufacturing:** Information on the Environment Management System or similar (if available).

**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 specific rules of North American 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 national product standards are unavailable, relevant ISO standards shall be used. If ISO standards are also unavailable, the European standard from IBU PCR shall be used.

**2.13 Extraordinary effects:**

#### Fire

If relevant, fire performance information according to the International Code Council (ICC) or National Fire Protection Association (NFPA) should be provided. Fire resistance and combustibility of mineral panels should be assessed and reported in accordance with the ASTM E-84<sup>17</sup>.

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<sup>11</sup> 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>

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

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

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

<sup>15</sup> Environment Canada. National Pollutant release Inventory (NPRI).

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

<sup>16</sup> 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>

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

**2.15 Disposal:** For disposal of products in North America, the US EPA<sup>18</sup> and Environment Canada<sup>19</sup> waste disposal classifications and statistics should be used to inform the scenario.

**3.5 Background Data:** Regionally specific inventory data on electricity shall be based on subnational U.S. and Canadian consumption mixes that account for power trade between the regions. If such regional data are not available, production mixes of the three continental interconnections (East, West, Texas) as well as those of Hawaii and Alaska may be used. In the case of a Cradle-to-grave EPD the North American average grid mix shall be used for the construction and use stages if the use location is not known. A comparable approach shall be taken for electricity consumption in the case of materials or input products imported from outside the U.S. or Canada. The sources for electricity (calculation procedure) shall be documented.

**3.9 Comparability. The following guidance supersedes IBU Part B (Section 3.9):** Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of mineral panels 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 mineral panels 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 guidance supersedes IBU Part B (Section 3.9):** 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)<sup>20</sup>. 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 <sub>2</sub> equiv.
Ozone Depletion Potential (stratospheric)	kg CFC 11 equiv.
Acidification Potential (land and water)	kg SO <sub>2</sub> equiv.
Eutrophication Potential (land and water)	kg N equiv.
Smog Formation Potential	kg O <sub>3</sub> equiv.
Abiotic Resource Depletion Potential of Non-renewable (fossil) energy resources	MJ, LHV

Number reporting format shall use decimals instead of commas.

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 2012<sup>21</sup>. These predetermined parameters shall be included in the EPD as follows:

<sup>18</sup> <https://www.epa.gov/smm/advancing-sustainable-materials-management-facts-and-figures-report>

<sup>19</sup> Statistics Canada. <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/envir32a-eng.htm>

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

<sup>21</sup> [https://www.universiteitleiden.nl/en/science/environmental-sciences/tools-and-data#CML\\_IA](https://www.universiteitleiden.nl/en/science/environmental-sciences/tools-and-data#CML_IA)

Global Warming Potential (GWP) (Fossil)	kg CO <sub>2</sub> equiv.
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 equiv.
Acidification Potential of soil and water (AP)	kg SO <sub>2</sub> equiv.
Eutrophication Potential (EP)	kg (PO <sub>4</sub> ) <sup>3-</sup> equiv.
Photochemical Oxidant Creation Potential (POCP)	kg ethylene 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. The following guidance supersedes IBU Part B (Section 7):** 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 Bio-persistence:** Evidence must be provided of compliance with the Toxics Release Inventory (TRI) Program of Persistent Bioaccumulative Toxic (PBT) Chemicals covered by the TRI program<sup>22</sup>.

**7.2 Formaldehyde and VOC Emissions. The following guidance supersedes IBU Part B (Section 7.2):** For products used in indoor applications, the measurement method shall be indicated. Measurement shall be made in accordance with the following or its equivalent:

<sup>22</sup> <https://www.epa.gov/toxics-release-inventory-tri-program/persistent-bioaccumulative-toxic-pbt-chemicals-covered-tri>

- California Air Resources Board Airborne Toxic Control Measure (ATCM) for formaldehyde requirements<sup>23</sup>
- Test method following ISO 16000-3: 2010, ISO 16000-6: 2011, ISO 16000-9: 2006, ISO 16000-11:2006
- California Department of Public Health (CDPH)/Environmental Health Laboratory Branch (EHLB) Standard Method v.1.2-2017 (CA 01350), using the applicable exposure scenario<sup>24</sup>

**7.3 Radioactivity:** Measures of radioactivity should be performed based on the requirements of the US Nuclear Regulatory Commission<sup>25</sup>

### 3.0 Reporting Requirements

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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
- 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

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

<sup>24</sup> [https://www.scsglobalservices.com/files/program\\_documents/cdph-iaq\\_standardmethod\\_v1\\_2\\_2017.pdf](https://www.scsglobalservices.com/files/program_documents/cdph-iaq_standardmethod_v1_2_2017.pdf)

<sup>25</sup> <https://www.nrc.gov/about-nrc/radiation/health-effects/measuring-radiation.html>

- 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 mineral panels 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 mineral panels 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

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- 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 Mineral panels”
- 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.