Knowledge Brief

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Consistent treatment in the reporting for covered products

COLLEGE OF BUILT ENVIRONMENTS
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CLF Carbon Leadership Forum

This knowledge brief addresses the following requirement from RCW 39.116.050:

(5)(b) Recommendations for consistent treatment in the reporting for covered products;

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1. Introduction

This brief describes the current state of BCBF reporting and recommends ways to improve the reporting consistency across covered products. To set the stage, we first provide an overview of our approach to this topic through the lens of the three major terms in the bill language: *consistent treatment*, *reporting*, and *covered products*.

In Section 2, we assess how product category rules (PCRs) and related reporting requirements compare for the different product types covered under BCBF.

In Section 3, we present recommendations to make reporting more consistent across the different covered products in the BCBF program.

Approach to this brief

We used the following principles and assumptions in our review and recommendations.

A. "**Consistent treatment**" should follow these principles:
    a. Treatment should address consistency both within and across product categories.[1]
    b. Consistent treatment should mean equivalent (and not necessarily identical)[2] requirements across product categories, acknowledging that different products have different supply chains, ingredients, and manufacturing processes.

B. We focus on aspects of BCBF **reporting** that are…
    a. significant for specification and procurement decision-making, prioritizing topics raised in previous BCBF technical work group discussions; and
    b. not already addressed in other UW/CLF BCBF briefs and reports.[3]

C. BCBF's **covered product** categories are:
    a. Concrete products: ready-mixed concrete and shotcrete mixtures; precast concrete; concrete masonry units (CMU)
    b. Steel products: reinforcing steel products; structural steel products — hot-rolled sections (HRS), hollow structural sections (HSS), metal deck, and plate[4]
    c. Wood: including softwood lumber and engineered wood products

Table 1 summarizes key reporting components in BCBF, including items that are currently required or requested and items that the technical work group has discussed for potential future inclusion.

Table 1. Key current and potential BCBF reporting components.

[1] The forthcoming UW/CLF BCBF Report #1 on EPD data quality will dive deeper into the consistency and comparability of EPDs, within and across categories.
[2] Example from ISO 21930: "The scenarios…for two products could be **equivalent**…but **not identical**, because of, for example, different ancillary material requirements...The products could show different impacts but could still be compared."
[3] For recommendations around consistency related to EPD data and calculations (rather than reporting), see the forthcoming UW/CLF BCBF Report #1 on data quality.
[4] We recommend considering the addition of open-web steel joists (OWSJ) to the list of covered products.

Reporting component	Current BCBF treatment
GWP and other environmental impacts	Required (via EPD)
Manufacturing location of the final product	Required
LCA disclosures: scope, data sources, and specificity	Partially covered in EPDs; discussed in the technical work group for potential future inclusion.
Sourcing location(s) of upstream materials	None; discussed in the work group for potential future inclusion as “actual production facilities.”
Worker conditions (not in Brief 4’s scope)	Requested
Health impacts (not in Brief 4’s scope)	Requested

2. The current state of reporting for covered products

Manufacturers report on many aspects of their products and supply chains. The following subsections focus on reporting that is relevant to specification and procurement decisions.

- PCR comparison and EPD system boundaries (Section 2.3)
- Sourcing disclosure of key inputs (Section 2.2)
- EPD specificity (Section 2.3)

2.1 PCR comparison and EPD system boundaries

EPDs are BCBF's primary required reporting mechanism, and PCRs provide the reporting rules for EPDs. Table 2 assesses the PCRs for the covered product types in relation to key reporting elements.

Table 2. Elements of consistent reporting and their current treatment in PCRs for BCBF product categories.
See Appendix A for PCR references.

Element for consistent reporting		Concrete	Precast	CMU	Steel	Wood
System Boundary	Covers (at least) A1-A3?	✓	✓	✓	✓	✓
	Do EPDs include additional life cycle modules beyond A3?	Optional	✗	Optional	Optional	Optional
	Start of A1–A3 system boundary? (See Figure 1 for more details.)	Quarry	Quarry	Quarry	Quarry; steel scrap	Forestry[a]
	End of A1–A3 system boundary = construction product?	✓	✓	✓	✓	✓
EPD specificity	Requires facility-specific EPDs?	✗	✗	✗	✗	✗
	PCR has requirements for product specificity beyond ISO 21930?	✗	✗	✗	✗	✗
	Supply chain specificity score reporting required?	✗	✗	✗	✓	✗
Reporting	Requires separate reporting of GWP from fossil and biogenic carbon?	✓	✗	✗	✗	✗
	Can an EPD include contributions from energy attribute certificates (EACs) in its main results?	✓	✗	✗	✓	✗
	If including EACs in any results, does the EPD need to separately disclose the EAC contribution?	✓	✓	✓	✓	✓
	LCA data source disclosure required?	✓	✓	✓	✓	✓
	Reporting of raw materials sourcing (location) required?	✗	✗	✗	✗	✗

[a] In this context, forestry includes "growing seedlings, site preparation, planting, fertilization (where applicable), and final harvest… Non-merchantable slash is generally left at a landing to decay in-situ."[5,6]

Notes and findings

- **Updates are currently under development for the PCRs** for ready-mixed concrete and shotcrete,[7] precast, CMU, and wood, so the rules reflected here may change once updated.
- There are **many areas of consistency across PCRs**, such as: a system boundary that covers (at least) A1–A3, from raw material extraction to finished construction product; required disclosure of LCA data sources; and no required disclosure of raw material origins (discussed more below).
- Notable **areas of inconsistency**:
    - reporting of supply-chain-specificity score (See "EPD specificity" and recommendations sections.)
    - reporting of (i) biogenic carbon and (ii) EACs in EPD results. (See recommendations in the forthcoming UW/CLF Report 1 on data quality and Brief 3 on Scope 2 emissions.)

Figure 1 details EPD system boundaries for the covered product types, showing what is typically included in each life cycle module A1, A2, and A3. It also provides some examples of what is typically not included in EPD system boundaries. For instance, EPDs of all categories generally exclude landscape-level impacts related to resource extraction.[8]

[5] Puettmann, M. (2024). *Life Cycle Assessment of Softwood Lumber Production – Pacific Coast Region*. https://corrim.org/wp-content/uploads/2024/08/LCA-Report-Pacific-Coast-Lumber-Report-Final.pdf

[6] When slash is not extracted from the forest, slash emissions affect forest (landscape) carbon stocks, so they are categorized as land use/land-use change emissions. The wood PCR prescribes alignment with ISO 21930:2017, which states: "Wood from sustainably managed forests may be accounted for as having zero emissions concerning land-use change." This allows ISO 21930-conformant wood product EPDs from "sustainably managed forests" to assume forestry slash emissions are carbon-neutral.

[7] Table 2's concrete data reflects the recently approved (but not yet published) update to the concrete PCR. Most current concrete EPDs conform to the current concrete PCR v2.3, which has several differences from the forthcoming update. The current version optionally allows additional LCA stages beyond A1-A3, while the new version optionally allows module A4 and prohibits any further modules. And the updated version specifies separate reporting of GWP-fossil and GWP-biogenic, as well as rules for energy attribute certificates (EACs), unlike the current version.

[8] The wood PCR requires EPDs to include the statement: "While this EPD does not address landscape level forest management impacts, potential impacts may be addressed through requirements put forth in regional regulatory frameworks, ASTM 7612-15 guidance, and ISO 21930 Section 7.2.11 including notes therein. These documents, combined with this EPD, may provide a more complete picture of environmental and social performance of wood products."

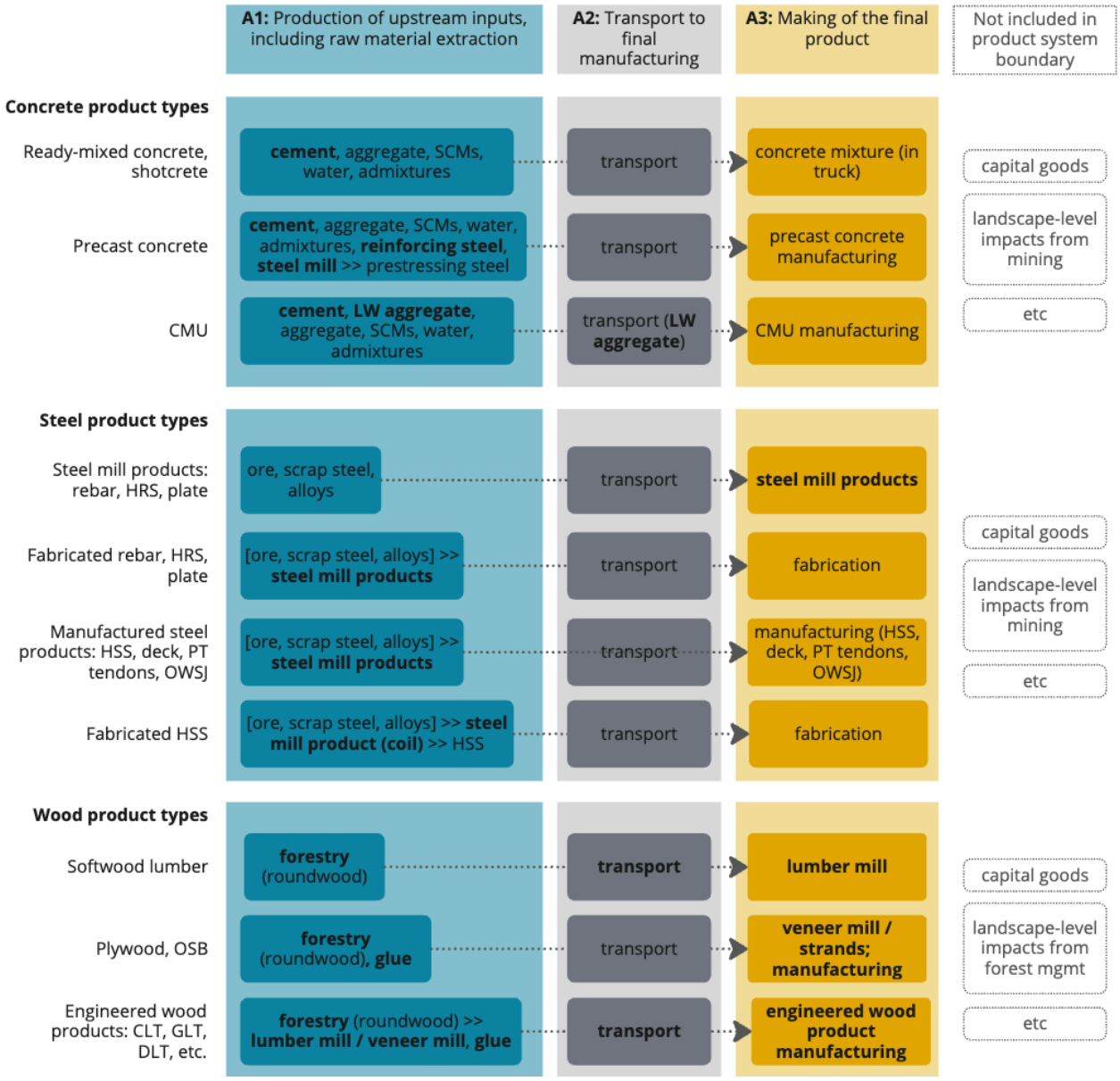


Figure 1. EPD system boundaries and substantial steps in the supply chains of BCBF-covered product types. Bold text refers to key inputs (see Figure 3). The >> symbol refers to the transport of the input to a different facility.

Figure 2 shows rough contributions by stage to total A1–A3 carbon emissions for the covered products. Notably, the covered product types vary significantly in terms of which steps in the supply chain contribute the most to their cradle-to-gate GWP.

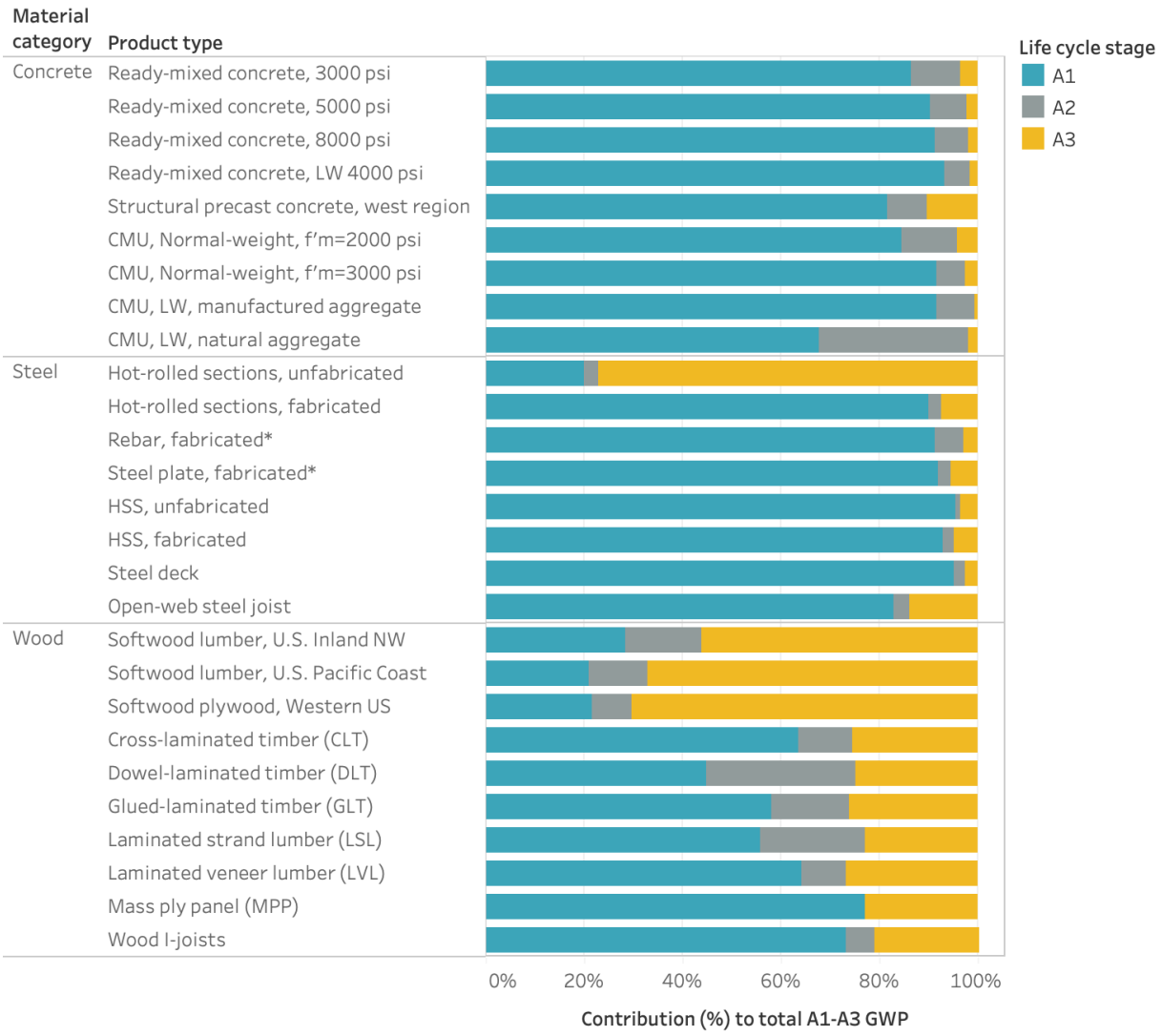


Figure 2. Contribution to covered products' total A1–A3 GWP by life cycle stage. For most of the covered product types, the production of input ingredients (A1) contributes the most to total A1–A3 emissions. *There are no published industry-wide GWP results separated by A1, A2, and A3 for unfabricated rebar and unfabricated steel plate, so they are not shown here. Their production is similar to that of unfabricated hot-rolled structural steel sections, so we expect similar contributions by stage (dominated by A3). See Appendix A for a list of data sources.

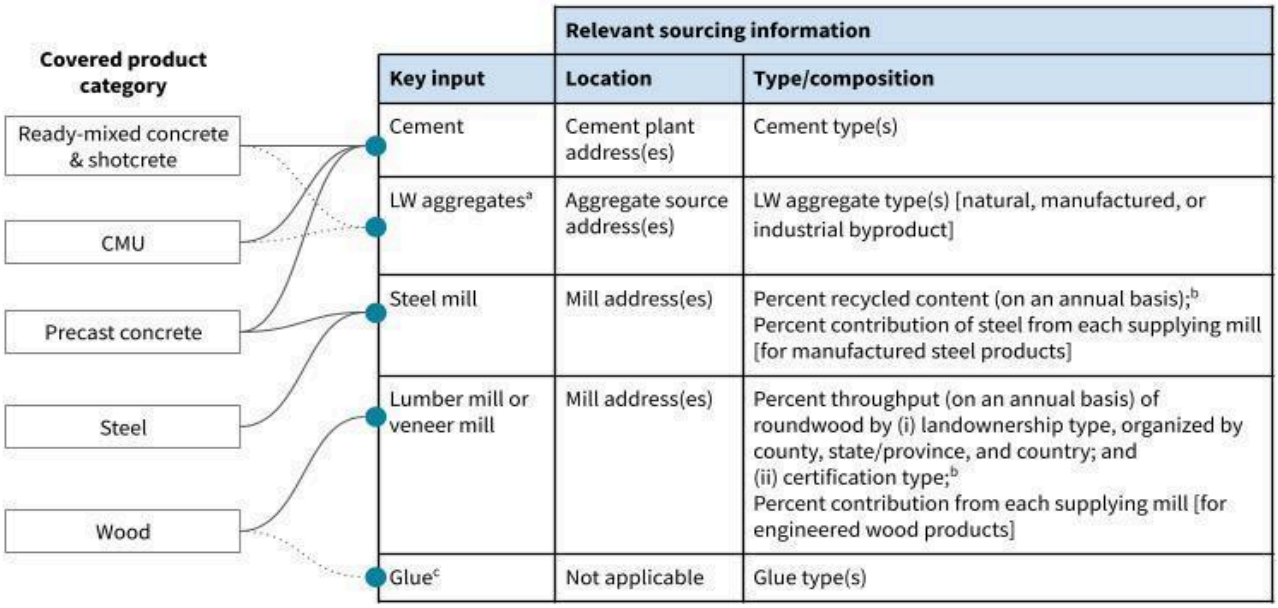
2.2 Sourcing disclosure of key inputs

A "key input" here means a process or upstream product that can be important for specification and procurement-based decisions because it contributes significantly to the product's carbon emissions[9] or affects other project values. For example, project teams may want to buy local to support targeted sectors of the Washington economy, procure wood from small landowners, or use concrete with

[9] For this brief, we consider processes that cumulatively contribute at least 70% of the product's total A1–A3 GWP to be "significant," in alignment with the BCBF bill language on supply-chain-specific EPDs.

cement from plants with EPA Energy Star certification. “Sourcing disclosure” here refers to the reporting of information that may be relevant to such decisions, including: (a) the location where the key inputs were produced and (b) the type and/or composition of the key inputs.

Figure 3 lists the BCBF product categories, key inputs, and relevant sourcing information.



	Relevant sourcing information	
Key input	**Location**	**Type/composition**
Cement	Cement plant address(es)	Cement type(s)
LW aggregates[a]	Aggregate source address(es)	LW aggregate type(s) [natural, manufactured, or industrial byproduct]
Steel mill	Mill address(es)	Percent recycled content (on an annual basis);[b] Percent contribution of steel from each supplying mill [for manufactured steel products]
Lumber mill or veneer mill	Mill address(es)	Percent throughput (on an annual basis) of roundwood by (i) landownership type, organized by county, state/province, and country; and (ii) certification type;[b] Percent contribution from each supplying mill [for engineered wood products]
Glue[c]	Not applicable	Glue type(s)

Figure 3. Key inputs for BCBF-covered products and relevant sourcing information. Dashed lines mean some products in the category include the listed input.

Figure notes:

a. Lightweight (LW) aggregates are relevant for medium- and light-weight concrete and CMU products. For manufactured LW aggregates, their production can have a significant impact. For natural LW aggregates, their transport can have a significant impact.
b. This value can be a snapshot of the mill’s source locations (called the “wood basket” for wood mills) over the course of a year; it does not need to be the actual steel or wood used on the project. The BCBF’s first legislative report mentions similar requirements, though only for engineered wood products, and in the EPD, rather than in separate documentation as discussed below.[10]
c. One study found that glue contributed 37% of mass timber’s A1–A3 GWP. Arup. (2023). *Embodied Carbon: Timber.* https://www.istructe.org/IStructE/media/Public/Resources/ARUP-Embodied-carbon-timber-v2.pdf

None of the covered PCRs requires EPDs to report the sourcing locations of key inputs (see Table 2), and EPDs rarely include this. These source locations can be confidential business information, making it inappropriate to include them in a publicly accessible EPD. However, we recognize that for some project teams, this information helps inform their purchasing decisions to support their goals that are separate from GWP and other metrics reported in EPDs.

[10] Washington State Department of Commerce. (2026). *Buy Clean and Buy Fair Low-carbon manufacturing plan*. https://deptofcommerce.app.box.com/s/d5ng5t320ntw7q73qdn7iyzp66fo30m8

If State agencies want information not typically included in EPDs (such as sourcing information for key inputs), they could potentially request this as part of the submittal package. A **submittal** contains information about a selected product to demonstrate that it meets the project's specifications. A contractor provides submittals to the design team for approval, typically during a project's preconstruction or construction phase.[11] Suppliers of some BCBF-covered product types already typically include the source location of key inputs in project submittal packages.

Typical disclosures of sourcing of key inputs for each of the BCBF-covered product types are summarized below:

- **Ready-mixed concrete and shotcrete:** Submittals typically include sourcing information for cement, aggregate, sand, and water to ensure materials meet ASTM standards for project use. Concrete submittals sometimes include cement and/or aggregate EPDs.[12]
- **Precast concrete:** Precast submittal packages include material mill certifications that provide plant origin information for cement and reinforcing steel, among other ingredients.[13]
- **CMU:** Manufacturers generally do not disclose sources for key inputs in EPDs or submittals.[14]
- **Steel products:** Mill-specific EPDs are common for mill products. For manufactured steel products like HSS or deck, a mill test certificate (MTC, also called "mill test report") follows the mill product (e.g., coil) to the manufacturer, and should be available for submittals.
- **Wood products:** EPDs and submittals do not generally disclose sourcing of upstream inputs — sawmill locations (for relevant engineered wood products) or forest locations.[15]

A submittal is a "project-backward" format for source disclosure, where reporting originates with the construction product (e.g., HSS, CLT) manufacturer who collects upstream data from their suppliers (e.g., steel or lumber mills), to provide the project submittal. This approach supports the near-term goal of **transparency** — it helps the project team to know more about the products that will be used on the project.

The longer-term goal is **intentional sourcing**, where source disclosure information can directly inform specification and procurement decisions. Rather than a submittal (which typically happens too late in the process to affect decisions), suppliers could provide a submittal-like "representative product data package" (an unofficial term) to the design team before formal specification. A "material-forward" format, where reporting originates at the upstream supplier and gets passed downstream to manufacturers, would best support this approach.[16]

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[11] https://www.newforma.com/what-is-a-submittal-in-construction/
[12] D. Davies, personal communication, April 2026.
[13] T. Ketron, personal communication, May 4, 2026.
[14] Submittals typically include test reports for the CMU but not the individual ingredients (H. Jandris, personal communication, May 1, 2026).
[15] This sourcing information can be important since, as the wood PCR states, "national or regional life cycle averaged data for raw material extraction does not distinguish between extraction practices at specific sites and can greatly affect the resulting impacts."
[16] Climate Smart Wood Group. (2026). *Climate Smart Wood Procurement Guidance version 3.* https://www.climatesmartwood.net/wp-content/uploads/2026/01/CSWG-Procurement-Guidance-v5.pdf

2.3 EPD specificity

Why EPD specificity is important: Generally, the more an EPD uses specific (rather than average or generic) data, the more reliably it reflects the product's actual environmental impacts. The ACLCA[17] defines three types of data specificity in EPDs:

- Manufacturing specificity: EPD covers one final manufacturing facility (*facility-specific*) vs. a manufacturer's multiple facilities (*manufacturer-average*) vs. *industry-average*.
- Product specificity: EPD covers one or a family of very similar products (*product-specific*) or a range of products with greater variation (*product average*).
- Supply-chain specificity (SCS): the degree to which the EPD's A1–A3 processes are represented by data specific to the actual supply chain, rather than generic, average, or proxy data. The ACLCA addendum provides a method for EPDs to calculate their SCS score as the proportion of their A1–A3 processes (0-100%, by GWP contribution) represented by SCS data.

The typical treatment of specificity and reporting for BCBF-covered products is summarized below:

- **Ready-mixed concrete and shotcrete:** EPDs are typically mix- (i.e., product-) and facility-specific. Because cement is the major contributor to GWP, overall supply-chain specificity depends mostly on whether the EPD uses supplier-specific or industry-average data to model their cement. EPDs must report the percentage of their cement represented by supplier-specific data.
- **Precast concrete:** Many structural precast products are made to order for a specific project, where project requirements dictate the quantities of concrete ingredients and reinforcing steel. This potentially affects how well an EPD represents the actual product.[18] Precast concrete EPDs do not have to report any percentage of supplier-specific data.
- **CMU:** EPDs must report the percentage of their cement represented by supplier-specific data. Since most of the CMU impact is in the production of cement and aggregates, specific upstream data (which the PCR prefers but does not require) contributes more to EPD specificity than CMU-facility-specific data.
- **Steel products:** The current steel PCR requires all EPDs to report their supply-chain specificity score. EPDs for mill products (with or without fabrication) typically report mill-specific GWP results. EPDs for manufactured products may or may not use mill-specific data.[19]
- **Wood products:** Many wood products have GWP impacts that are more evenly distributed across A1, A2, and A3, compared with concrete and steel products. EPDs for engineered wood products may or may not use lumber data specific to the supplying mill(s).

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[17] ACLCA. (2025). *Guidance for Determining EPD Types and Calculating and Communicating Data Specificity Through the Supply Chain*. https://www.aclca.org/initiatives#PCR-Open-Standard

[18] The precast PCR could improve product specificity by encouraging project-specific ("made-to-order") EPDs and/or general EPDs for similar products, where an EPD covers products within a narrow range of values for significant variables (e.g., cement and steel quantities).

[19] The descriptions here generally still apply to EPDs that include off-site fabrication as A3. These EPDs are typically produced and owned by the mill or manufacturer that made the unfabricated product — they use their own mill- or manufacturer-specific data and then apply downstream industry-average fabrication impacts.

Findings and discussion

Why reporting of EPD specificity is important:

- Reporting an EPD's specificity supports transparency: it helps Washington agencies and other EPD users know how much of the EPD's scope is represented by data specific to the actual product and supply chain. Higher data specificity in EPDs more accurately represents the actual product impacts. This supports informed decision-making.[20]
- BCBF already requests supply-chain-specific EPDs. Reporting SCS scores will allow agency staff to know if an EPD meets the program's definition of a "supply-chain-specific EPD."
- The SCS score can address the variation in relative impacts by stage across the covered product types; it provides an equivalent and holistic approach to assess data specificity along the supply chain. (The designation of "facility-specific," on the other hand, only addresses the final step of the manufacturing process, which contributes relatively little to overall impacts for many of the covered products.)
- The ready-mix concrete (recently approved update) and CMU PCRs (but not the precast concrete PCR) require reporting the percentage of cement represented by manufacturer-specific data. Since cement accounts for most of concrete's A1–A3 GWP, the use of manufacturer-specific data for (only) cement would result in a high supply-chain specificity score for a concrete product EPD.

[20] For example, if Product A's EPD has a slightly lower GWP compared to Product B, but Product B's EPD has a much higher SCS score, it may be appropriate to choose in procurement the product whose EPD result we're more confident in (B) rather than one with the slightly lower — but less reliable — value (A).

3. Recommendations

Based on our assessment above, we make the following recommendations for more consistent reporting for covered products in the BCBF program:

1. **Require or request the disclosure of the sourcing location(s) and type/composition of key inputs** (per Figure 3)**, consistently across the covered products.**
    a. Near-term: **Require/request the sourcing disclosures as part of submittal packages.** This supports transparency — it allows project teams to know more about the materials used on the project.
    b. Long-term: **Require/request the disclosures as "representative product data packages" that can be made available to the design team before specification.** This supports intentional sourcing by informing specification and procurement.
    c. **Consider updating the BCBF model specifications** to incorporate lessons learned from sourcing disclosures.
2. **Require manufacturers to report their EPD's supply-chain-specificity (SCS) score per ACLCA's *EPD types and data specificity* addendum methods.** Currently, some of the covered product PCRs require this reporting, and some do not. Requiring all BCBF EPDs to report their SCS score, following the same method, will support more consistent treatment of reporting across the covered products.
    a. This should ideally be reported in the EPD itself. (Washington State agencies can advocate for PCRs to include this requirement.)
    b. Where this isn't available in the EPD, the BCBF program could require it to be included as a separate attachment.
3. **Engage in current PCR efforts to promote more consistency across PCRs.** PCR committees are currently developing new versions of the PCRs for precast concrete, CMU, and wood. Washington state agency representatives can join those committees and/or submit public comments in support of more consistent reporting.

Appendix A: References for PCRs and EPDs

PCR references

Concrete (including ready-mixed concrete and shotcrete: Table 2's information for concrete comes from an approved draft of the forthcoming NSF PCR for Concrete. [No citation available]. The current version: NSF International. (2024). *NSF PCR for Concrete v2.3*. https://www.nsf.org/nsf-standards/product-category-rules

Precast concrete: NSF International. (2021). *Product Category Rule for Environmental Product Declarations: PCR for Precast Concrete v3.0*. https://www.nsf.org/nsf-standards/product-category-rules

NSF is currently developing a new version of the precast PCR.

Concrete masonry units (CMU): UL. (2022). *PCR Part B: Concrete Masonry and Segmental Concrete Paving Product EPD Requirements v1.1*.
https://www.shopulstandards.com/ProductDetail.aspx?productId=ULE10010-29_2_S_20220301.

Smart EPD is currently developing a new version of the concrete masonry PCR. (https://smartepd.com/pcr-library/)

Steel (including reinforcing, prestressing, and structural steel products): Smart EPD. (2025). *Smart EPD Part B PCR for Designated Steel Construction Products (1000-008) v3*. https://smartepd.com/pcr-library and

Smart EPD. (2024). *Smart EPD Part A Product Category Rules for Building and Construction Products and Services, v1.01*. https://smartepd.com/assets/SmartEPD_Part_A_PCR_v1.01_FINAL_01-15-2024.b1588041.pdf

Wood (including sawn lumber and engineered wood products): UL Environment. (2020). *Product Category Rules for Building-Related Products and Services - Part B: Structural and Architectural Wood Products EPD Requirements*. UL. https://www.shopulstandards.com/ProductDetail.aspx?UniqueKey=36412.

UL Environment. (2018). *Product Category Rules for Building-Related Products and Services - Part A: Life Cycle Assessment Calculation Rules and Report Requirements, v3.2*.
https://www.shopulstandards.com/ProductDetail.aspx?productId=ULE10010_6_S_20220328 [Edition 5]

UL is currently developing a new version of the wood PCR.

Data sources for Figure 2

Ready-mixed concrete: The Athena Sustainable Materials Institute. (2022). *A Cradle-to-Gate Life Cycle Assessment of Ready-Mixed Concrete Manufactured by NRMCA Members—Version 3.2*.
https://www.nrmca.org/wp-content/uploads/2022/02/NRMCA_LCAReportV3-2_20220224.pdf. Data based on USA national benchmark mixes.

Precast concrete: Precast/Prestressed Concrete Institute. (2025). *Structural Precast Concrete Regionalized Industry Average EPD*. ASTM International.
https://www.pci.org/PCI_Docs/Design_Resources/Sustainability/2025-PCI-Structural-EPD.pdf

CMU: Concrete Masonry and Hardscapes Association. (2024). *Environmental Product Declaration for Concrete Masonry Units as Manufactured by Members of Concrete Masonry & Hardscapes Association (CMHA)*. ASTM.
https://www.cmha.org/wp-content/uploads/2024/11/EPD_CMHA_v5.pdf

Hot-rolled structural sections (unfabricated and fabricated): American Institute of Steel Construction. (2025). *Environmental Product Declaration: Hot-Rolled Structural Steel Sections*. Smart EPD.
https://www.aisc.org/aisc/sustainability/environmental-product-declarations/

Rebar: Concrete Reinforcing Steel Institute (CRSI). (2022). *Environmental Product Declaration: Steel Reinforcement Bar*. ASTM. https://www.crsi.org/wp-content/uploads/CRSI_Industry-Wide_EPD_Sep2022.pdf

Steel plate: American Institute of Steel Construction (AISC). (2021). *Environmental Product Declaration: Fabricated Steel Plate*. UL. https://www.aisc.org/media/5izbk2ac/epd-aisc-plate-2021.pdf

HSS, unfabricated: Steel Tube Institute (STI). (2021). *Environmental Product Declaration: Hollow Structural Sections*. UL. https://steeltubeinstitute.org/wp-content/uploads/2026/01/sti-epd-industry-average-hss.pdf
Fabricated: American Institute of Steel Construction (AISC) & Steel Tube Institute (STI). (2022). *Environmental Product Declaration: Fabricated Hollow Structural Sections*. UL. https://www.aisc.org/media/kjkfgf4j/aisc_epd_fab-hss-1.pdf

Steel deck: Steel Deck Institute (SDI). (2022). *Environmental Product Declaration: Steel Roof and Floor Deck*. UL. https://sdi.org/publications/publications/misc-publications/sdi-environmental-product-declaration-epd/

OWSJ: Steel Joist Institute (SJI). (2022). *Environmental Product Declaration: Open Web Steel Joists and Joist Girders*. UL. https://steeljoist.org/wp-content/uploads/2022/02/101.1_SJI_EPD_2022-Steel-Joist_022122.pdf

Softwood lumber: American Wood Council. (2024). *Environmental Product Declaration: U.S. Inland Northwest Softwood Lumber*; and American Wood Council. (2024). *Environmental Product Declaration: U.S. Pacific Coast Softwood Lumber*. https://awc.org/priorities/sustainability/environmental-product-declarations/

Softwood plywood: American Wood Council. (2025). *Environmental Product Declaration: U.S. Western Softwood Plywood*. ASTM International. https://web-media.awc.org/wp-content/uploads/2025/05/23191048/Western-Plywood-EPD-Final2-07222025.pdf

CLT: average of two Washington CLT manufacturer EPDs: Mercer Mass Timber. (2025). *Environmental Product Declaration: Cross-laminated Timber and Glue-laminated Timber (Mercer Spokane)*. https://mercermasstimber.com/resources/#documents; Vaagen Timbers. (2021). *Environmental Product Declaration: Cross Laminated Timber produced by Vaagen Timbers in Colville, WA*. ASTM International. https://pcr-epd.s3.us-east-2.amazonaws.com/643.EPD_FOR_Vaagen_Timbers_CLT_EPD_20210414.pdf

DLT: StructureCraft. (2020). *EPD for Dowel Laminated Timber produced by StructureCraft in Abbotsford, BC Canada*. ASTM International. https://structurecraft.com/assets/main/pdf/structurecraft_dlt_epd_20200910_.pdf

GLT: American Wood Council. (2025). *Environmental Product Declaration: U.S. Glued Laminated Timber*. ASTM International. https://web-media.awc.org/wp-content/uploads/2021/12/11163300/Glulam-EPD-2025.pdf

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