EPD Optimization Assessment

Product: Low Embodied Carbon (LEC) Cold-Formed Steel Framing Systems

Manufacturer: ClarkDietrich

Current EPD: Low Embodied Carbon (LEC) Cold-Formed Steel Framing Systems. ClarkDietrich. EPD 12752 at EPD International via EPD North America. Valid 3/15/2024-3/15/2029.

Baseline EPD: Cold-Formed Steel Framing Systems. ClarkDietrich. EPD 4789752901.101.1 at UL Environment. Valid 1/1/2021-1/1/2026.

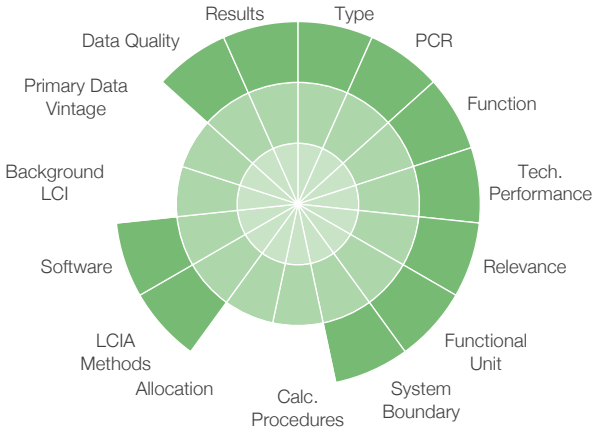
Comparison Type: Current EPD vs Baseline EPD

Scope of Comparison: Cradle-to-Gate (A1-A3)

LEED Credit: LEED v4.1, MR Credit EPDs, Option 2 @ 1.5 products

Period of Validity: 6/25/2024-3/15/2029

Comparison Summary



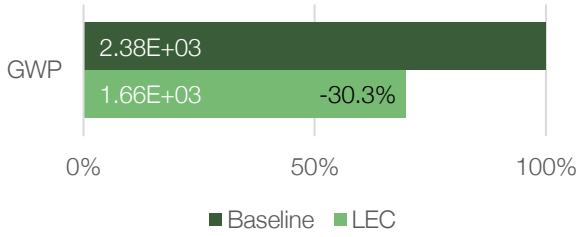
The current EPD was compared to the baseline EPD using 15 indicators. A single score of 0 (Not Comparable) or multiple scores of 1 (Problematic for Comparison) would result in the current and baseline EPDs not being able to be compared.

For this comparison, the current EPD from ClarkDietrich and the baseline EPD from ClarkDietrich meet the criteria for comparability per ISO 14025. The results presented in this optimization assessment compare results obtained directly from both EPDs.

Impact Category	Unit	Baseline Cold-Formed Steel Framing	LEC Cold-Formed Steel Framing
		A1-A3	A1-A3
GWP[1]	kg CO_2-eq	2.38E+03	1.66E+03
ODP[2]	kg CFC 11-eq	1.50E-07	5.74E+00
AP[2]	kg SO_2-eq	5.23E+00	2.14E+00
EP[2]	kg N-eq	2.61E-01	5.71E-05
SFP[2]	kg O_3-eq	8.42E+01	1.33E+02
ADP_f[3]	MJ surplus	1.91E+03	7.69E+03

Methodology used: 1. IPCC AR5 (2021), 2. Traci 2.1 (2012), 3. CML v4.2 (2016)

Embodied Carbon Comparison



Impact Reduction Sources

ClarkDietrich's Low Embodied Carbon (LEC) Cold-Formed Steel Framing Systems give architects and engineers greater freedom in designing sustainable buildings. The LEC portfolio includes ProSTUD® drywall framing system, structural framing, clips and connectors, floor framing, and more. The new offerings make ClarkDietrich the first steel framing manufacturer to offer LEC products nationwide, which "have less climate impact associated with mining, manufacturing and transportation," according to the Environmental Protection Agency. ClarkDietrich's LEC cold-formed steel is manufactured using coils from electric arc furnace (EAF) mills—as opposed to basic oxygen furnaces (BOFs), which are commonly used in steel production—resulting in products with 30 percent less embodied carbon than the baseline version of the product.

WAP SUSTAINABILITY CONSULTING
#24-133
Valid Jun 25, 2024 to Mar 15, 2029
LCA/EPD OPTIMIZATION
LEED v4.1
Environmental Product Declarations
Option 2 - 10+% GWP Reduction

COMPARABILITY ASSESSMENT

Per ISO 14025, "Type III environmental declarations are intended to allow a purchaser or user to compare the environmental performance of products on a life cycle basis. Therefore, comparability of Type III environmental declarations is critical. The information provided for this comparison shall be transparent in order to allow the purchaser or user to understand the limitations of comparability inherent in the Type III environmental declarations." The table below showcases the criteria utilized to determine if the two EPDs are comparable.

Criteria	Score	Description
Product Category		
Product Type	3	The product types are equivalent.
Product Category Rule	3	The same product category rule was followed for both assessments.
Function	3	The function is the same for both products.
Technical Performance	3	The technical performance is equivalent between the two products.
Relevant Comparison	3	The past and current EPDs are for the same product from ClarkDietrich.
Scope		
Functional Unit	3	The functional units for both products are equivalent.
System Boundary	3	As prescribed by the PCR, the system boundary is limited to A1-A3 in both assessments.
Calculation Procedures	2	The past and current EPDs were developed by practitioners from different organizations. All declared assumptions are equivalent, except for distance manufacturing waste travels to waste processing. The past EPD assumed 50 miles by truck, whereas the current EPD assumes 20 miles by truck per EPA WARM. However, waste transport represents less than 1% of cradle-to-gate impacts and assumptions are deemed to be reasonably identical.
Allocation	2	The past EPD considered no allocation of co-products. The current EPD considers co-products of LEC cold-formed steel framing systems and those made of BOF steel allocated by mass. Background LCI data in both assessments are allocated by mass.
LCIA Method	3	The same LCIA method was used, and the same indicators reported.
Data and Results		
Software	3	Both assessments utilized the LCA for Experts software, formerly GaBi.
Background LCI Data	2	Both assessments utilized the Managed Life Cycle Content, formerly GaBi, database of different vintages.
Primary Data Vintage	2	The past EPD utilizes 2019 primary data from ClarkDietrich while the current EPD uses data from April 2022-March 2023.
Data Quality	3	All data quality indicators for time, geography, technological representativeness, completeness, reliability, and consistency are equivalent in the modeling.
Results	3	Results were presented with the same groupings by LCIA indicator.

Based on this comparability assessment, the products in question are deemed comparable for the purposes of LEED credit achievement. It is WAP Sustainability's professional opinion that Low Embodied Carbon (LEC) Cold-Formed Steel Framing Systems from ClarkDietrich meet the following LEED Materials and Resource Credit, Environmental Product Declaration, Option 2 criteria: GWP Reduction 10+% (valued at 1.5 products for LEED v4.1).

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