BELTER TECH®
Sustainable Building Solutions

climate earth™

Environmental Product Declaration **for**
DRY MIX CEMENT & MORTARS

ATLANTA PLANT

Belter Tech Inc.
3020 commerce way, Atlanta, GA 30354
(844) 914-1200 ▪ https://beltertech.com/

EPD

ATLANTA PLANT

General Information

This cradle to gate Environmental Product Declaration covers dry mix products produced at the Belter Tech Plant. The Life Cycle Assessment (LCA) was prepared in conformity with ISO 21930, ISO 14025, ISO 14040, and ISO 14044. This EPD is intended for business-to-business (B-to-B) audiences.

Belter Tech Inc.
3020 Commerce Way, Units C & D,
Atlanta, GA 30354

Program Operator
ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428
610-832-9500
https://www.astm.org

EPD #662
June 1, 2025
Valid for 5 years

LCA/EPD Developer
Climate Earth, Inc.
137 Park Place, Suite 204
Pt Richmond, CA 94801
415-391-2725
https://www.climateearth.com

ISO 21930:2017 Sustainability in Building Construction-Environmental Declaration of Building Products serves as the core PCR

PCR review was conducted by
Thomas P. Gloria, PhD. (t.gloria@industrial-ecology.com) • Industrial Ecology Consultants

Independent verification of the declaration, according to ISO 21930:2017 and ISO 14025:2006:
☐ internal ☑ external

Third party verifier
Thomas P. Gloria, PhD. (t.gloria@industrial-ecology.com) • Industrial Ecology Consultants

For additional explanatory material
Manufacture Representative: Kevin Shepherd (kevin@beltertech.com)
This LCA EPD was prepared by Hossein Tavakoli, Director of North American LCA/EPD Services• Climate Earth (www.climateearth.com)

EPDs are comparable only if they comply with ISO 21930 (2017), use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works.

General Information

Producer

Belter Tech is the purpose-built pioneer of sustainable building solutions, protecting the planet in how we build, live and work. At Belter Tech, we are more than builders; we are aviators of innovation, navigating the skies of sustainable construction with resilience and a commitment to change. Our journey began with a mission to address the environmental impact of global construction – nearly 15% of greenhouse gas emissions and 30% of landfill waste stem from these vital industries. In the realm of construction, we don't just follow industry norms; we challenge them. Belter Tech stands as a testament to pioneering solutions, and our focus on sustainability has led us to the forefront of the industry. Our team, comprising builders, engineers, and manufacturers, has set out to redefine the construction landscape by developing high-performing products from post-industrial and post-consumer waste.

While others may falter, we remain resilient in our pursuit of eco-friendly practices. Acknowledging that 90% of manufacturing processes in construction lack environmental friendliness, we have crafted a different narrative. Our engineers ensure that our manufacturing doesn't compromise the delicate balance of our environment – no harmful chemicals, no disruptive machines. By 2025, Belter Tech is committed to being a net-zero carbon neutral manufacturer, a testament to our unwavering dedication to sustainability. With manufacturing plants strategically located in Atlanta, GA, and the New York Tri-state area, we are not just building products; we are constructing a sustainable legacy. Belter Tech believes in creating products that transcend the ordinary, fundamentally changing the way we build and inhabit our spaces. Our flagship innovation: Low-Embodied Carbon Concrete. This revolutionary material doesn't just build structures; it builds a greener tomorrow. By significantly reducing carbon emissions associated with construction materials, we're charting a course toward a more sustainable future. It's a commitment to environmental stewardship that resonates with our company slogan: "Innovation, stewardship, sustainability."

Our products, made from up to 100% recycled content, boast superior insulation, fire-resistant, acoustic, and mold-resistant properties. Choosing Belter Tech isn't just a construction decision; it's a statement of intent to contribute to LEED, WELL, ENV SP, and Passive House credits for your project.

In an era marked by inflated material prices, raw material shortages, and supply chain issues, we see an opportunity to redirect, reclaim, and reuse landfill diversion waste. Belter Tech is here to lead the charge in developing sustainable construction products that will redefine the way we build for generations to come.

Concrete and other building materials' Environmental Product Declarations (EPDs) are poised to revolutionize the construction industry's approach to assessing environmental impacts in both present and future projects. These EPDs offer a robust, science-driven framework that not only facilitates environmental improvement across Belter Tech but also empowers customers striving to pioneer sustainable practices in infrastructure and building development. By leveraging EPDs, we can collectively elevate standards, foster innovation, and propel the industry toward a greener, more sustainable future. Belter Tech – where pioneering meets resilience, and where every construction project is a step toward a greener future.

Products

This EPD reports environmental information for the products produced by Belter Tech at its Atlanta facility. The products covered in this EPD meet the following standards:

Product Name	Applicable Standard	Images
Belter Yield	ASTM C-39- Compressive Strength ASTM C-29 - Dry Density ASTM C-185 – Wet Density ASTM E136 Non-Combustible	
Belter LITE	ASTM C-39 Compressive Strength ASTM C-29 Dry Density ASTM E-119 Fire Test ASTM C-666 Freeze Thaw Resistance	
Belter Repair Mortar	ASTM C-666 Freeze Thaw Resistance ASTM C-882 Shear Bond Strength ASTM C-348 Flexural Strength ASTM C-109 Compressive Strength ASTM C-157 Shrinkage	
Belter Mortar	ASTM C-270	

Belter Yield

Description: Belter Yield EPD blends sustainability with strength. This high strength concrete is now infused with 40% reclaimed materials, making it an eco-conscious choice for your projects. With a robust 5500+ PSI strength, it outperforms traditional mixes, ensuring durability and reliability. Boasting 58% more coverage, Belter Yield EPD excels in efficiency. The enhanced bonding adhesion provides superior strength, allowing for thinner pours while resisting cracking, particularly suitable for metal decking or structure infills where weight loads are a concern. Embrace the future of concrete with Belter Yield EPD, a low embodied carbon solution that aligns performance with environmental responsibility. Belter Yield EPD is suitable for: Metal Decks, Floor Screeds, Patios, Metal Pan Stairs, Sidewalks Parking Decks, Ramps & Roofs

Benefits:

- Contains 58% More Volume Than Traditional Concrete
- 40% Recycled Content
- Exceptional Crack Resistance
- Low Embodied Carbon Concrete
- Meets ASTM C-109: 7 days = 5,500 psi ■
- Lightweight
- Air content (ASTM C231) – 5.6%
- Dry Density 72lbs /cu.ft (ASTM C-29)
- Wet Density 117lbs /cu.ft (ASTM C-185) ■ Cured Density 115lbs +/- 5lbs / cu.ft
- Superior Adhesion to Substrates

Belter LITE

Description: Belter LITE EPD is a cement-based fill system that utilizes 44% post-consumer recycled content to create best in class, lightweight, fire retardant, and highly insulative fill. Product Use: Belter LITE EPD is particularly suitable as a leveling screed especially in refurbishment of buildings, heated floor assemblies and sloped roof toppings. The low weight and good thermal insulating properties fully satisfy static requirements, providing structural leveling while minimizing insulation material thicknesses.

Benefits:

- Weight per cubic foot 38lbs dry
- Thermal insulating R6.8 in a 4" slab
- Stable, very light spherical grain
- Good pourability
- ASTM C39 Compressive Strength 7 days = 2500
- Slump ranges 8-9 inches
- Superior fire suppression tested to ASTM E119
- Meets ASTM E136 non-combustible
- Not a host for pests or rodents
- Does not provide a bed for mold growth
- Contaminant-free, odorless, anti-allergen
- Tested and recommended by the Institute of Building Biology + Sustainability
- Long-term stable, no material fatigue

Belter Repair Mortar

Description: Belter Repair Mortar EPD is a cement-based, polymer modified material for vertical and overhead repair concrete and masonry surfaces. Belter Repair Mortar EPD is high strength, low shrinkage and fast setting making is a cost-efficient solution. Belter Repair Mortar EPD is suitable for cracks in curbs, steps, and floors. Parking structures, walkways, bridges, and tunnels. Fast repairs for bridges, pilings, and buildings. Vertical and overhead repairs, and repairs for precast concrete panels

Benefits:

- Vertical & Overhead Repairs
- Fast Repair; 6–20-minute Initial Set
- ASTM C-666 Freeze Thaw Resistance = 50 cycles
- ASTM C-882 Shear Bond Strength 28 days = 1800 psi
- ASTM C-348 Flexural Strength 28 days = 1680 psi
- ASTM C-109 Compressive Strength 28 days = 7025 psi
- ASTM C-157 Very Low Shrinkage
- Can be installed 1⁄4" to 1⁄2" Lifts 2" Max Per Day
- Enhanced with Belter Corrosion Inhibitor

Belter Mortar

Description: Belter Mortar EPD Type N, M, S is a dry, preblended mortar fusion, seamlessly integrating masonry cement with dried sand. Unveiling superior bonding, optimal water retention, and extended board life. Establishing robust bonds. Bricklaying, Stone Veneer Non-load bearing Walls Chimney Repair Repointing Decorative masonry

Benefits

- Balance of Strength and Flexibility
- Easy application/handling
- 800 PSI
- Meets ASTM C270 Specifications
- Meets CSA A179 Property Specification
- Cost-Effective
- Long-term stable, no material fatigue

Product Components

The main product components used in the manufacturing of Portland plant products are:

Main Materials	Input range
Cement	19-58%
Sand	36-42%
SCM	5-34%
eco-sand	0-13%

Declared Unit

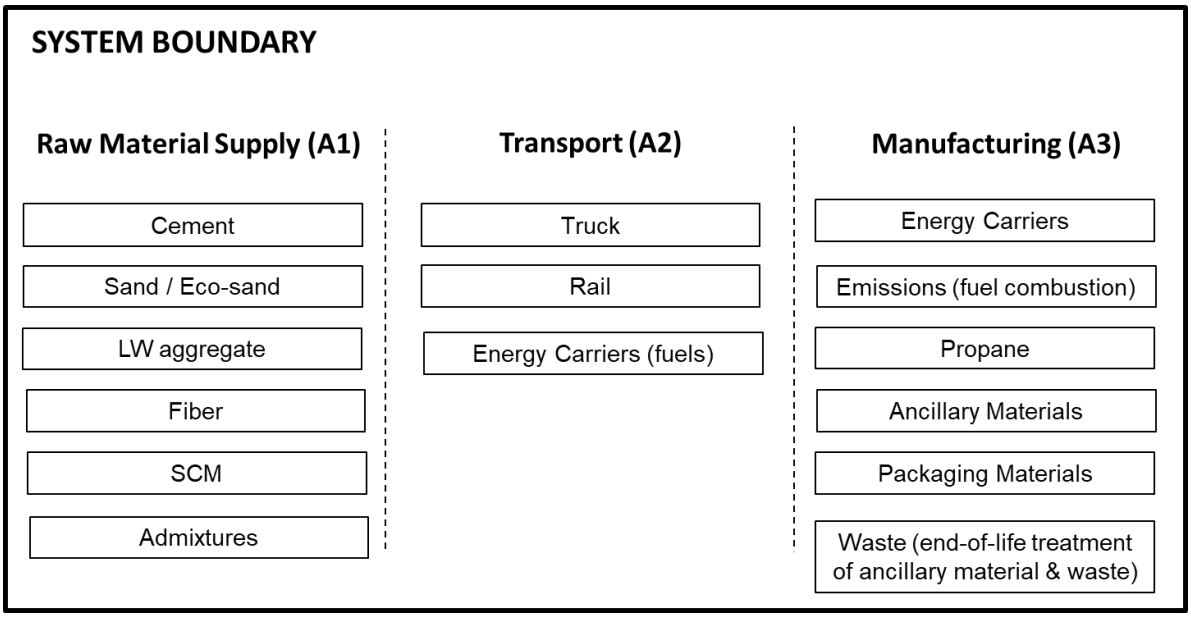
The declared unit is one metric tonne of finished product.

System Boundary

This EPD is a cradle-to-gate EPD covering A1-A3 stages of the life cycle.

PRODUCTION Stage (Mandatory)			CONSTRUCTION Stage		USE STAGE					END-OF-LIFE Stage			
Extraction and upstream production	Transport to factory	Manufacturing	Transport to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	De-construction/ Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**C1**	**C2**	**C3**	**C4**
X	**X**	**X**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**	**MND**
Note: MND = module not declared; X = module included.													

The production stages and primary unit processes included in the study by product stage are:



Cut-Off

Items excluded from system boundary include:

- production, manufacture and construction of manufacturing capital goods and infrastructure.
- production and manufacture of production equipment, delivery vehicles, and laboratory equipment.
- personnel-related activities (travel, furniture, and office supplies); and
- energy and water use related to company management and sales activities that may be located either within the factory site or at another location.

Allocation Procedure

Allocation follows the requirements and guidance of ISO 14044:2006, Clause 4.3.4; and ISO 21930:2017 section 7.2. Recycling and recycled content is modeled using the cut-off rule.

Belter Tech Products[1] per 1 metric tonne.*

Impact Assessment	Unit	Belter Yield	Belter Lite	Belter Repair Mortar	Belter Mortar
Global warming potential (GWP)	kg CO_2 e	270.8	371.1	594.4	411.9
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 e	3.34E-06	1.66E-05	8.45E-04	6.16E-05
Eutrophication potential (EP)	kg N e	0.25	0.26	0.30	0.28
Acidification potential of soil and water sources (AP)	kg SO2 e	5.0	8.1	9.5	6.1
Formation potential of tropospheric ozone (POCP)	kg O_3 e	36.8	41.7	54.0	32.5
Resource Use					
Abiotic depletion potential for non-fossil mineral resources (ADPelements)**	kg Sb eq	4.27E-03	7.46E-03	8.62E-03	8.18E-03
Abiotic depletion potential for fossil resources (ADPfossil)	MJ, NCV	2144.5	2879.2	7151.0	2771.4
Renewable primary energy resources as energy (fuel), (RPRE)**	MJ, NCV	863.3	827.5	883.8	924.3
Renewable primary resources as material, (RPRM)**	MJ, NCV	0.5	0.0	0.0	0.86
Non-renewable primary resources as energy (fuel), (NRPRE)*	MJ, NCV	2770.3	3100.1	7485.9	3019.5
Non-renewable primary resources as material (NRPRM)**	MJ, NCV	30.3	0.0	0.0	7.99
Consumption of fresh water	m3	3.6	3.6	8.5	4.1
Secondary Material, Fuel and Recovered Energy					
Secondary Materials, (SM)**	kg	125.0	0.0	0.0	0.0
Renewable secondary fuels, (RSF)**	MJ, NCV	0.0	0.0	0.0	0.0
Non-renewable secondary fuels (NRSF)**	MJ, NCV	0.0	0.0	0.0	0.0
Recovered energy, (RE)**	MJ, NCV	0.0	0.0	0.0	0.0
Waste & Output Flows					
Hazardous waste disposed**	kg	1.36E-03	1.69E-03	1.95E-03	3.05E-03
Non-hazardous waste disposed**	kg	14.4	19.6	22.7	25.9
High-level radioactive waste**	m3	4.53E-03	9.19E-08	4.00E-04	1.79E-03
Intermediate and low-level radioactive waste**	m3	6.18E-07	4.44E-07	7.18E-07	5.42E-07
Components for reuse**	kg	0.0	0.0	0.0	0.0
Materials for recycling**	kg	64.5	0.0	90.1	0.0
Materials for energy recovery**	kg	0.0	0.0	0.0	0.0
Recovered energy exported from the product system**	MJ	0.0	0.0	0.0	0.0
Emissions from calcination	kg CO2 eq	73.5	125.2	144.4	94.7

* Emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in these categories.
** Calculated as per ACLCA ISO 21930 Guidance (ACLCA, 2019)

[1] These products contain no materials that are considered hazardous as defined by the PCR.

Results are presented as the secondary operational unit for Belter Tech Products per 1 m^3 of concrete mixed with batch water*

Impact Assessment	Unit	Belter Yield	Belter Lite	Belter Repair Mortar	Belter Mortar
Global warming potential (GWP)	kg CO_2 e	323.4	443.3	710.0	492.1
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 e	3.99E-06	1.99E-05	1.01E-03	7.36E-05
Eutrophication potential (EP)	kg N e	0.30	0.31	0.36	0.33
Acidification potential of soil and water sources (AP)	kg SO2 e	6.03	9.64	11.31	7.27
Formation potential of tropospheric ozone (POCP)	kg O_3 e	43.9	49.9	64.5	38.9
Resource Use					
Abiotic depletion potential for non-fossil mineral resources (ADPelements)**	kg Sb eq	5.10E-03	8.91E-03	1.03E-02	9.78E-03
Abiotic depletion potential for fossil resources (ADPfossil)	MJ, NCV	2.56E+03	3.44E+03	8.54E+03	3.31E+03
Renewable primary energy resources as energy (fuel), (RPRE)**	MJ, NCV	1.03E+03	9.89E+02	1.06E+03	1.10E+03
Renewable primary resources as material, (RPRM)**	MJ, NCV	0.58	0.00	0.00	1.03
Non-renewable primary resources as energy (fuel), (NRPRE)*	MJ, NCV	3.31E+03	3.70E+03	8.94E+03	3.61E+03
Non-renewable primary resources as material (NRPRM)**	MJ, NCV	36.2	0.0	0.0	9.5
Consumption of fresh water	m3	4.35	4.30	10.20	4.90
Secondary Material, Fuel and Recovered Energy					
Secondary Materials, (SM)**	kg	149	0.0	0.0	0.0
Renewable secondary fuels, (RSF)**	MJ, NCV	0.0	0.0	0.0	0.0
Non-renewable secondary fuels (NRSF)**	MJ, NCV	0.0	0.0	0.0	0.0
Recovered energy, (RE)**	MJ, NCV	0.0	0.0	0.0	0.0
Waste & Output Flows					
Hazardous waste disposed**	kg	1.62E-03	2.02E-03	2.33E-03	3.64E-03
Non-hazardous waste disposed**	kg	17.2	23.4	27.1	30.9
High-level radioactive waste**	m3	5.41E-03	1.10E-07	4.78E-04	2.14E-03
Intermediate and low-level radioactive waste**	m3	7.39E-07	5.30E-07	8.58E-07	6.48E-07
Components for reuse**	kg	0.0	0.0	0.0	0.0
Materials for recycling**	kg	77.1	0.0	107.6	0.0
Materials for energy recovery**	kg	0.0	0.0	0.0	0.0
Recovered energy exported from the product system**	MJ	0.0	0.0	0.0	0.0
Emissions from calcination	kg CO2 eq	87.8	149.5	172.4	113.1

* Emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in these categories.

** Calculated as per ACLCA ISO 21930 Guidance (ACLCA, 2019)

References

ACLCA. (2019). *ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017.*

ASTM. (April 2020). *General Program Instructions.*

ecoinvent. (2021). *The ecoinvent Database v.3.8.* Zurich, Switzerland: The Swiss Centre for Life Cycle Inventories.

ISO 14020. (2000). *Environmental labels and declarations – General principles.*

ISO 14025. (2006). *Environmental labels and declarations, Type III environmental declarations, Principles and procedures.*

ISO 14040. (2006). *ISO 14040: Environmental Management – Life Cycle Assessment – Principles and Framework.*

ISO 14044. (2006/Amd 1:2017/Amd 2:2020). *Environmental management – Life cycle assessment – Requirements and guidelines*

ISO 21930. (2017). *ISO 21930; Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services.*

Long Trail Sustainability. (2021). *DATASMART (ES-EI Database).* Huntington, VT: Long Trail Sustainability.

National Renewable Energy Laboratory. (2015). *U.S. Life-Cycle Inventory (LCI) database.*

PRé Sustainability. (2020). *SimaPro Vers. 9.1.0.8.* www.pre-sustainability.com/simapro.

US EPA. (2014). *Tool for the Reduction of Assessment of Chemical and Other Environmental Impacts (TRACI).*

US EPA. (2022). *Emissions & Generation Resource Integrated Database (eGRID).*