

Environmental Product Declaration

Rebar and spool rebar manufactured from steel scrap.

In accordance with ISO 14025:2006 and EN15804:2012+A2:2019/AC:2021
“EPD of multiple products, based on the average results of the product group.”



Programme:

The International EPD® System
EPD registered through the fully
aligned regional programme/
hub: Latin American Hub,
www.epd-latinamerica.com
info@environdec.com
EPD® Latin America

Programme operator:

EPD International AB
Regional Hub:
Latin American Hub of
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Mexico

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.



THE INTERNATIONAL EPD® SYSTEM



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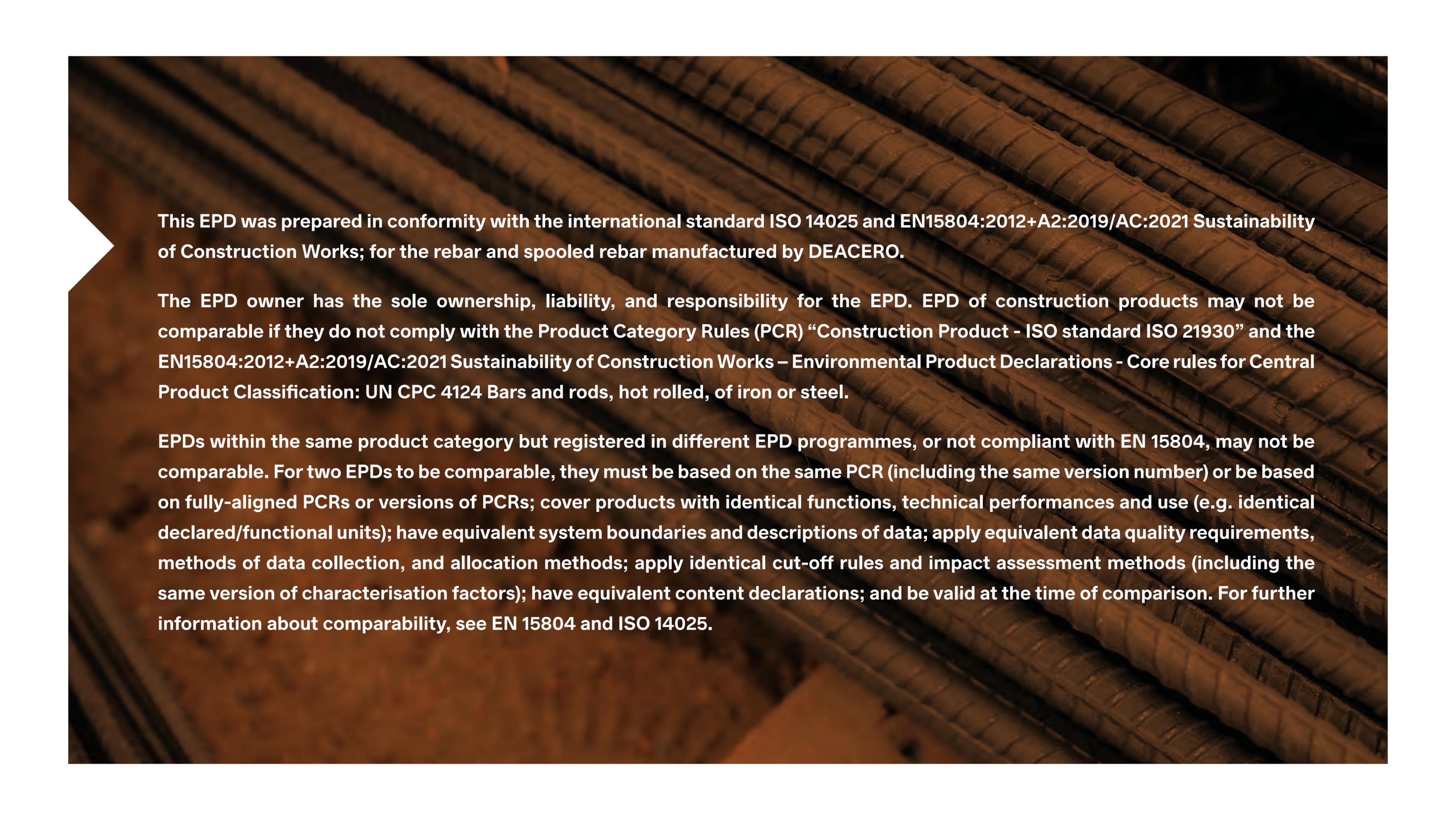
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The background of the slide is a close-up photograph of several parallel rebar rods. The rods are dark in color and feature a prominent, repeating diamond-shaped ribbed pattern along their length. They are arranged in a slightly overlapping, diagonal fashion, creating a strong sense of depth and texture. The lighting is somewhat dim, highlighting the metallic sheen and the shadows between the ribs.

This EPD was prepared in conformity with the international standard ISO 14025 and EN15804:2012+A2:2019/AC:2021 Sustainability of Construction Works; for the rebar and spooled rebar manufactured by DEACERO.

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPD of construction products may not be comparable if they do not comply with the Product Category Rules (PCR) “Construction Product - ISO standard ISO 21930” and the EN15804:2012+A2:2019/AC:2021 Sustainability of Construction Works – Environmental Product Declarations - Core rules for Central Product Classification: UN CPC 4124 Bars and rods, hot rolled, of iron or steel.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

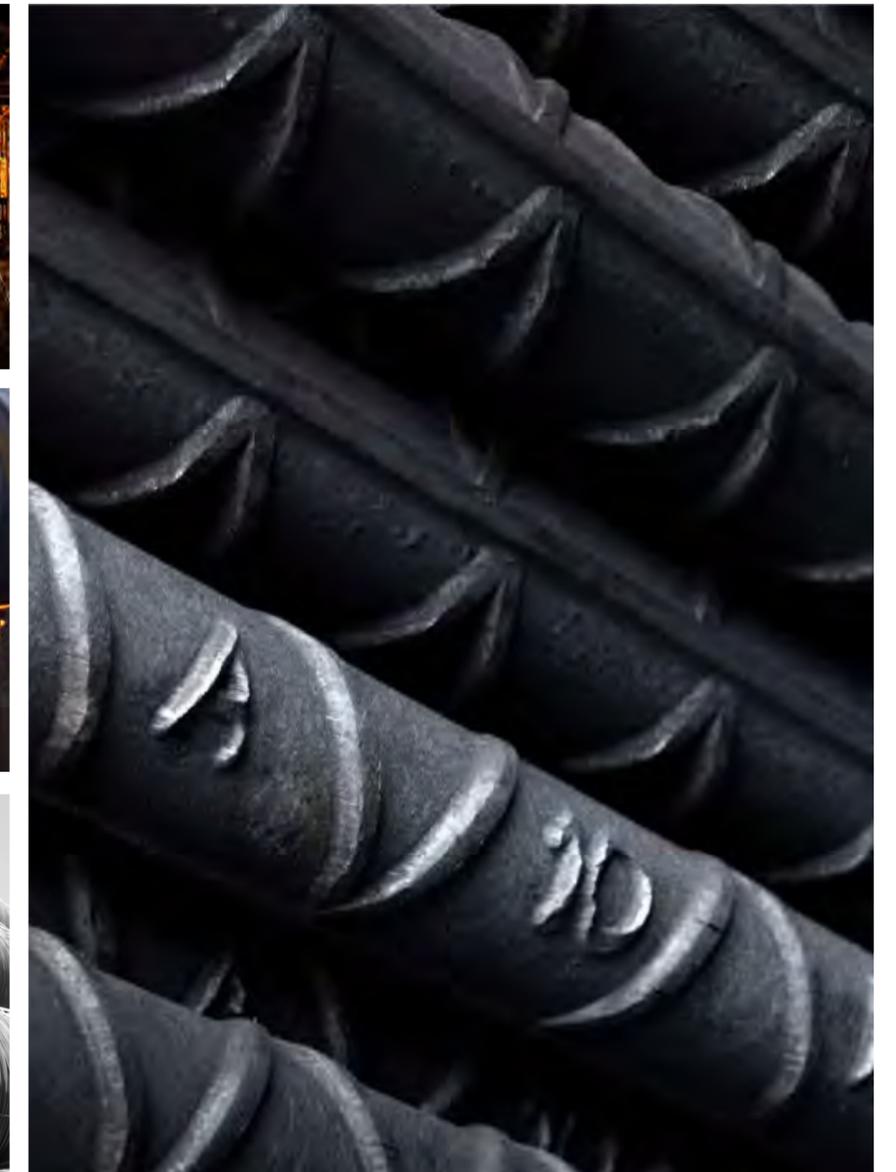
1. DEACERO

DEACERO S.A.P.I. de C.V. is a 100% Mexican company, founded in 1952 with the vision of becoming the most attractive producer of steel and its derivatives in the steel industry. With over 70 years of experience, a global presence, and strategic locations in Latin America and North America, they have consolidated their production and commercialization of long steels, reinforcing steels, wires, wire rods, and construction systems for various industries, notably agriculture, energy, manufacturing, and construction.

They are distinguished by their strong commitment to sustainability and social responsibility, implementing advanced recycling practices. They recover and recycle 97% of the scrap metal used in their process to reduce their environmental footprint and promote a cleaner production cycle. They produce steel and wire from scrap or recycled steel in electric arc furnaces (EAF), which generate nearly four times less CO2 emissions than the basic oxygen furnace (BOF) method. This approach allows them to reduce the consumption of natural resources and minimize carbon emissions.

Their innovation and commitment to sustainability have led them to integrate practices with a lower environmental impact in all their processes, remaining in constant evolution. DEACERO has an Environmental Management System Implementation Plan with the goal of obtaining ISO 14001:2015 certification at their steel mills in Coahuila and Guanajuato, as well as at the wire plants located in the State of Mexico, Guanajuato, and Nuevo León by the end of 2024.

Since 2022, DEACERO S.A.P.I. de C.V. has been committed to the United Nations Global Compact corporate responsibility initiative and its principles in the areas of human rights, labor, environment, and anti-corruption.



2. General information



PRODUCT:	REBAR AND SPOOLED REBAR
Name of the manufacturer:	DEACERO S.A.P.I. de C.V.
Description of the construction product:	Rebar and spooled rebar are products mainly used for the construction of structural elements.
Declared unit:	1000 kg of Rebar and spooled rebar manufactured from steel scrap.
Description of the main product components and or materials:	Steel manufactured using scrap steel as source of iron.
Life cycle stages not considered:	The modules: A4, A5, B1, B2, B3, B4, B5, B6, B7.
Statement content:	<p>This environmental product declaration is based on information modules that do not cover aspects of construction stage and use. It contains detailed information on the stage of input materials used for the generation of raw material and central process, modules A1, A2, A3, approximations of scenarios C1, C2, C3, C4 and D based on national statistics.</p> <ul style="list-style-type: none"> • Definition of the product. • System boundary. • Content declaration. • Environmental performance. • Declared unit. • Evidence and verifications.
Comparability of EPD of construction products	<p>a. EPD of construction products may not be comparable if they do not comply with EN 15804:2012+A2:2019/AC:2021.</p> <p>b. Environmental product declarations within the same product category from different programs may not be comparable</p>
For more information consult	www.deacero.com
Sites for which this EPD is representative	<p>Manufacturing Plant</p> <p>Ramos: Carretera Monclova Km. 4, Tramo Santa Cruz-Ojo Caliente #2125, Localidad El Mesón del Norte, Ramos Arizpe, del Esta de Coahuila, México. C.P. 25900.</p> <p>Celaya: Carretera 45 Panamericana, Tramo Celaya-Salamanca Km 64.8, El Chinaco, Villagrán, Guanajuato.</p>
Intended Public:	B2B (Business to Business)

2. General information



ACCOUNTABILITIES FOR PCR, LCA AND INDEPENDENT, THIRD-PARTY VERIFICATION	
Product Category Rules (PCR)	
CEN standard EN 15804 serve as the core Product Category Rules (PCR)	
Product category rules (PCR): PCR 2019:14 Construction products, version 1.3.4	
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact .	
LIFE CYCLE ASSESSMENT (LCA)	
LCA accountability:	Díaz Leandra, García Rene, Mireya González, Center for Life Cycle Assessment and Sustainable Design – CADIS.
THIRD-PARTY VERIFICATION	
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:	
<input checked="" type="checkbox"/> EPD verification by individual verifier Third-party verifier: Francisco Jesús Campo Rámila, IK Ingeniería SL.	
Approved by: The International EPD System	
Procedure for follow-up of data during EPD validity involves third-party verifier	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

3. The products



This EPD includes multiple products: Rebar and spooled rebar manufactured from steel scrap are mainly used for the construction of structural elements. The results within this EPD reflect the average results of all investigated products, thus this EPD is valid for multiple products.

The corrugated rebar is a rolled steel product designed to construct structural concrete elements such as footings, piles, piers, floors, columns, beams, slabs, walls, castles, enclosures, prefabricated elements, tunnels, pavements, bridges, channels, and many others. The surface of the rebar is provided with ribs or protrusions called corrugation, which inhibit longitudinal movement between the rebars and the surrounding concrete.

The rebar is strategically produced in two steel mills located in the north and the Bajío regions (Ramos Arizpe and Celaya), allowing for greater agility and cost-competitiveness in response to any requirement/work/project, thus ensuring extensive coverage for distribution. The rebar fully complies with the standards: NMX-B-506-CANACERO-2019 and ASTM A615/A615M-18, and has the following characteristics:

The characteristics of the rebar manufactured by DEACERO, including dimensions, forms, and tensile mechanical properties, are shown in Table 1 and Table 2.

N°	Diameter		Area	Weight
	plg	mm	cm ²	Kg/m
3	3/8	9.5	0.71	0.560
4	1/2	12.7	1.27	0.994
5	5/8	15.9	1.98	1.552
6	¾	19.0	2.85	2.235
8	1	25.4	5.07	3.973
10	1¼	31.8	7.94	6.225
12	1½	38.1	11.40	8.938

Table 1. Nominal dimensions of rebar (NMX).

N°	Diameter		Area	Weight
	plg	mm	plg ²	Lb/ft
3	3/8	9.5	0.11	0.376
4	1/2	12.7	0.20	0.668
5	5/8	15.9	0.31	1.043
6	¾	19.0	0.44	1.502
8	1	25.4	0.79	2.670
10	1¼	31.8	1.27	4.303

Table 2. Nominal dimensions of rebar (ASTM).



Figure 1. Rebar manufactured by DEACERO.

Mechanical properties	Grade 42 (NMX)	Grade 60 (ASTM)
Minimum yield strength	4200 kg/cm ²	60,000 Lb/plg ²
Minimum tensile strength	6300 kg/cm ²	90,000 Lb/plg ²
Minimum elongation in 20 cm		
3,4,5 y 6	9%	9%
8	8%	8%
10 y 12	7%	7%

Presentations		
Rebar	straight and bent	straight and rolled
3 y 4	9.15 m y 12 m	20, 40 / 60 ft
5, 6, 8, 10 y 12		

Table 3. Technical sheet of rebar.

4. Content declaration



Below is a summary table with the product contents and the breakdown of the identification of the contained chemical substances and their hazardousness. It is worth noting that the raw material for the rebar and the spooled rebar, is the billet; therefore, the table presented below shows the substance content of this input.

Product components	Weight, kg	Post-consumer recycled material, weight-% of product	CAS Number	Biogenic material, weight-% of product	Biogenic material, kg C/product or declared unit
Scrap steel	90	>90%	Not applicable	0	0
Pig iron	3	0%	Not applicable	0	0
Limestone	1.5	0%	471-34-1	0	0
Oxygen	4	0%	7782-44-7	0	0
Others	1	0%	Not applicable	0	0

Table 4. Content declaration of a product.

*Steel manufactured in the Industrial Center of DEACERO uses steel scrap as source of iron.

5. DISTRIBUTION PACKAGING

Packaging: None of the products have distribution packaging.

6. BIOGENIC CARBON CONTENT INFORMATION

Only the product reports biogenic carbon content since in the packaging the inputs that could account for impact represent less than 5% of the total weight of the packaging, therefore, following those described in the RCP “Annex 2: Guidelines for the calculation of biogenic GWP” (PCR Construction Products, version 1.3.4, 2024) is not declared. Details of the biogenic carbon content a presented later in this paper.

7. LCA Rules



Environmental potential impacts were calculated in conformity to EN15804:2012+A2:2019 /AC:2032 sustainability of construction works and PCR 2019:14 Construction products Version 1.3.4, UN CPC 4124 bars and rods, hot rolled, of iron or steel. This EPD is in accordance with ISO 14025:2006.

Environmental potential impacts were calculated through Life Cycle Assessment (LCA) methodology conformity to ISO 14040:2006 and ISO 14044:2006. An external third-party verification process of the EPD was conducted according to General Programme Instructions for the International EPD® System Version 4.0¹. Verification includes a documental review and a validation of both the underlying LCA study and documents describing additional environmental information that justify data provided in the EPD².

The EPD considers two products (rebar and spooled rebar) so a report based on weighted average results by production quantity was chosen as the option chosen to declare multiple products, within the framework of PCR 2019:14 Construction products. Version 1.3.4. The calculation of average results was developed considering the final

7.1 Declared unit

1000 kg of rebar and spooled rebar manufactured from steel scrap during the year 2022 by DEACERO in the Acería Ramos and Acería Celaya plants, used by the construction industry as reinforcement for concrete structures.

7.2 System boundary

The potential environmental impacts were calculated through LCA methodology to ISO 14040:2006 and ISO 14044:2006. This study went through a critical review process in accordance with ISO / TS 14071: 2014.

According to EN 15804 section 5.2 the following type of EPD is "cradle to gate with modules C1-C4 and module D (A1-A3+C+D). This EPD is based on information upstream processes and core processes, modules A1 to A3, and approximations of scenarios C1, C2, C3, C4, and

D based on construction sector statistics in Mexico (see Table 5). Does not include A4-A5 Construction stage and B Usage stage.

Life cycle stage	Information about the modules contained in the stages	EPD			
		Cradle-to-gate with modules C1-C4 and module D	Cradle-to-gate with modules C1-C4, module D and optional modules	From cradle to grave and module D	EPD construction services: Cradle to door with modules A1-A5 and optional modules
A1-A3 products stage	A1) Raw material procurement	Mandatory	Mandatory	Mandatory	Mandatory
	A2) Transport				
	A3) Manufacture				
A4-A5 Construction stage	A4) Transport	-	Optional for goods	Mandatory	Mandatory
	A5) Construction / installation		Required for services		
B Usage stage	B1) Use	-	Optional	Mandatory	Mandatory
	B2) Maintenance				
	B3) Reparation				
	B4) Replacement				
	B5) Remodeling				
	B6) Operational energy use				
	B7) Operational water use				
C End of life stage	C1) Deconstruction	Mandatory	Mandatory	Mandatory	Optional
	C2) Transport				
	C3) Waste processing				
	C4) Final disposition				
D Benefits and charges beyond the system limit	D) Reuse, recycling or energy recovery potential.	Mandatory	Mandatory	Mandatory	-

Table 5. System boundaries.

1. The "EN 15804 reference package" based on the Environmental Footprint (EF) 3.1 normalization and weighting values version has been used.
 2. "The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks."

7. LCA Rules

Direct data obtained from DEACERO records corresponds to the technology used in the rebar and spooled rebar production process. Data collection was carried out directly from Ramos and Celaya facilities. Information managed in an internal system and specialized software of CENACE (Centro Nacional de Control de Energía) consumption logs (meters) and invoices with municipal systems and waste generation logs.

7.3. Description of information modules.

A1) RAW MATERIALS SUPPLY	A2) TRANSPORTATION	A3) MANUFACTURING	C) END OF LIFE	D) BENEFITS AND CHARGES BEYOND THE SYSTEM LIMIT
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- Consumption and production of raw materials.
- Consumption and production of electrical energy.

- Transport distance of raw materials and supplies to the manufacturing site.
- Fuel consumption and emissions related to transportation requirements.
- Transportation distance for waste disposal and treatment.

- Consumption and production of water.
- Air emissions.
- Waste generation.
- Waste treatment processes, consumption of related materials and energy.

- Deconstruction.
- Transport final destination.
- What can be recycled.
- What goes to fill what is wasted and not recycled.

- The avoided loads, benefits of stopping the production of the mineral billet.

Module	Product stage					Usage stage						End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction facility	Use	Maintenance	Repair	Restoration	Operational energy use	Operational use of water	Demolition/Deconstruction	Transport	Waste processing	Disposal	
Module	A1	A2	A3	A4	A5	B1	B2	B4	B5	B6	B7	C1	C2	C3	C4	D
Declared modules	X	X	X	ND	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	MX	MX	MX	ND	ND	ND	ND	ND	ND	ND	ND	MX	MX	MX	MX	MX
Specific data used	>99%			-	-	-	-	-	-	-	-	-	-	-	-	-
Product variation	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-
Site variation	<10%*			-	-	-	-	-	-	-	-	-	-	-	-	-

X = Declared module; ND = No declared module; MX= México

Note. Infrastructure and capital goods are excluded for this evaluation, in upstream, core and downstream processes.

*This variation of sites corresponds to equal, unweighted products and processes.

i Table 6. Description of modules included in this EPD

i Table 7. Description of modules included in this EPD

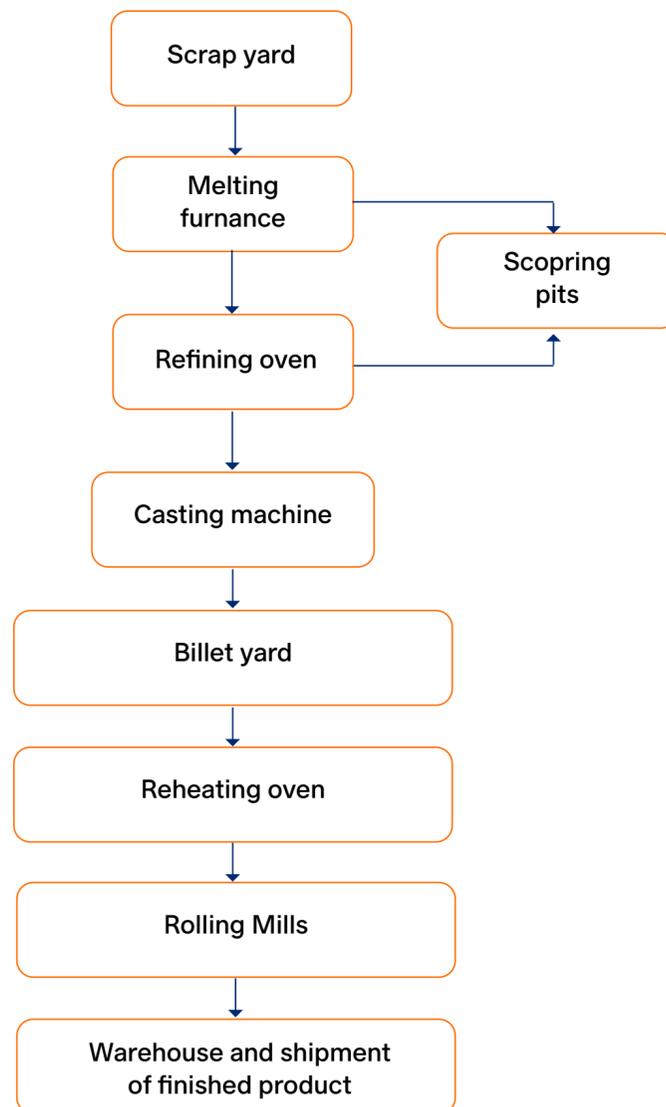
7. LCA Rules

7.4 Description of the manufacturing process

The manufacturing process is described in Figure 1:

INPUTS USE:

- Raw material.
- Electric power
- Diesel
- Natural gas
- Gas LP
- Water



INPUTS USE:

- Raw material.
- Electric power
- Diesel
- Natural gas
- Gas LP
- Water

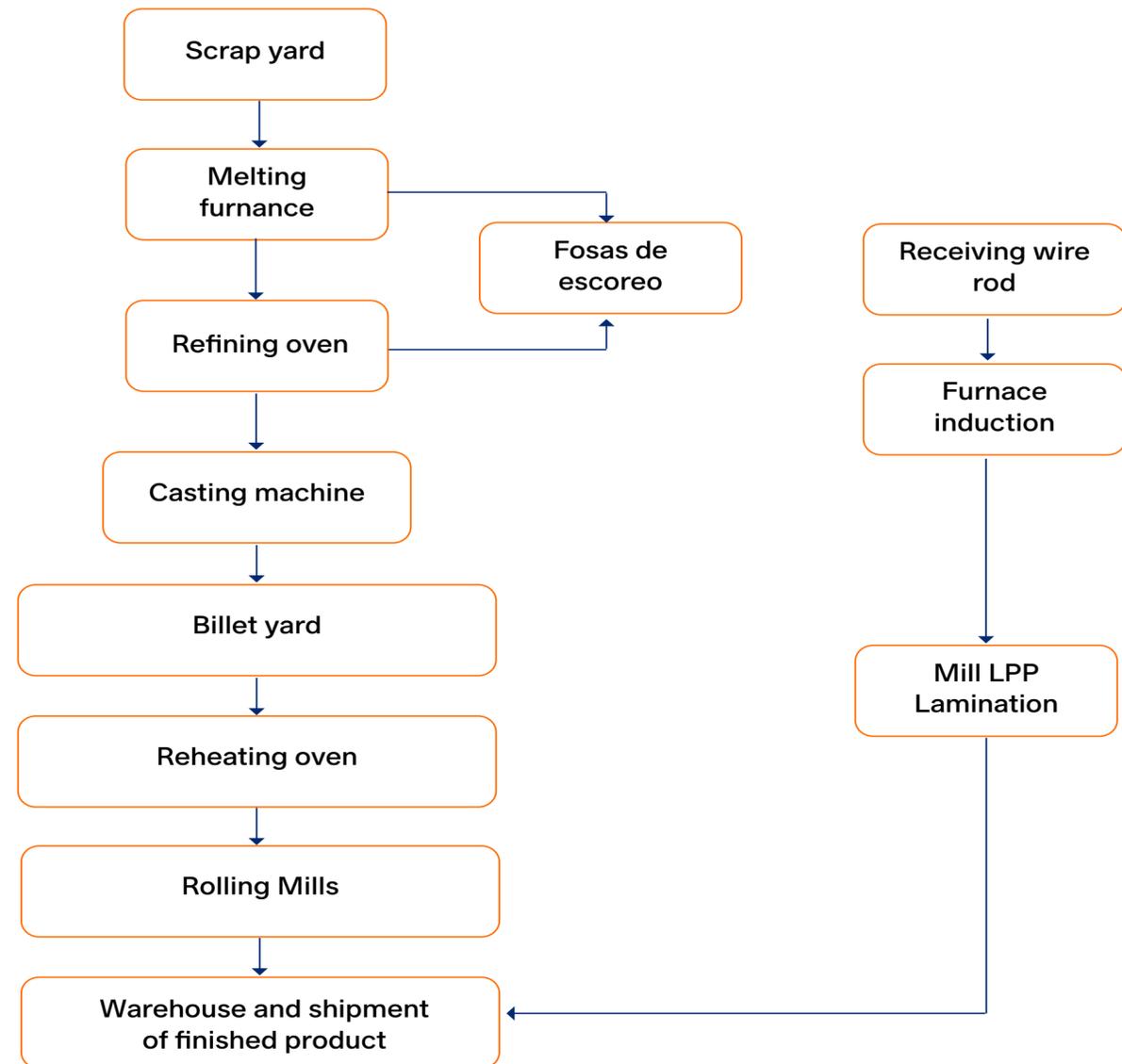


Figure 1. Celaya Steelworks flow process of rebar and spooled rebar (DEACERO, 2024).

Figure 2. Ramos Steelworks flow process of spooled (DEACERO, 2024).

7. LCA Rules



7.5 Assumptions

The assumptions related to the steel wire rod manufacturing process are presented below.

- The scenarios and distances associated with modules C1) Deconstruction, C2) Transport, C3) Waste processing, C4) Disposal and D) Potential for reuse, recycling or energy recovery in the future.
- According to the Latin American Steel Association (ALACERO, 2022), in Mexico, 98% of the steel generated during the demolition of construction buildings is recycled, and only 2% reaches the landfill.
- According to Javeriana University (Pontificia Universidad Javeriana, Faculty of Engineering, 2014) the fuel consumption involved during the demolition of buildings corresponds to 84liters for the use of a backhoe, 111 liters for the use of a backhoe loader, 98 liters for the use of a mobilecrusher. In this same process, the emissions of particulate matter associated with the demolition were obtained from Ecoinvent 3.9.1 “Steel and iron (waste treatment) {GLO}| recycling of steel and iron | Cut-off, U”.

7.6. Cut-off criteria

All flows of fuel, energy, materials and supplies necessary for the production of the rebar and spool rebar have been considered; materials that could be used in preventive or corrective maintenance of machinery and equipment were disregarded, as well as the use of uniforms and personal protective equipment or other auxiliary materials, leaving out textile impregnated with oils or plastics and the final disposal of these as hazardous waste.

7.7. Allocation

The production process of DEACERO rebar and spooled rebar begins with obtaining scrap and processing it in the scrap yard to obtain steel wire rod, which is the raw material for the products. The two products, are produced in the DEACERO Acería Ramos and Acería Celaya plants. The following tables present the allocation of by-products in the LCA, for each product.

By-product	Quantity	Units	Allocation
Allocation by yield	4,96E-02	Ton	4,73%
Rebar	1,05E+00	Ton	95,27%

Table 8. Allocation of by-products in the LCA of rebar.

By-product	Quantity	Units	Allocation
Allocation by yield	2,49E-02	Ton	2,43%
Spooled rebar	1,02E+00	Ton	97,57%

Table 9. Allocation of by-products in the LCA of spooled rebar.

7.8. Time representativeness

Direct data obtained from DEACERO is representative for 2022.

8. Environmental performance



SimaPro 9.5 and Ecoinvent 3.9.1 was used for Life Cycle Impact Assessment (LCIA).

8.1 Potential environmental impact

All information modules are reported and valued separately. However, in the present EPD presents itself the total impact across all stage.

As can be seen in the next graph the greatest environmental impacts are generated by stage A1 for obtaining raw materials, followed by stage A3 manufacturing, while the lowest environmental contributions are generated by stage A2 transportation.

In fact, practically all the basic and additional categories show a similar trend in materials. In the case of A1, the greatest environmental impacts are generated by the billet. On the one hand, the billet is a raw material that is obtained and transformed within the same DEACERO plants and requires different raw materials and auxiliary energy inputs that have an impact on practically all categories.

On the other hand, electricity has impacts associated with the generation and distribution of electrical energy in our country, within these activities different greenhouse gases are emitted that directly impact categories such as climate change, ozone layer depletion and photochemical ozone formation.

The variations of LCIA results between rebar and spooled rebar are not significant. For example, in the Global warming potential (GWP-GHG), the difference between both products is 8%.

Electricity impact

The rebar and spooled rebar manufactured by DEACERO use electrical energy generated in three different power plants. The combined cycle power plants are “El Carmen” and “Tamazunchale,” and the electrical energy of highvoltage.

As part of the requirements of the PCR, the climate impact as kg CO₂ eq/kWh of the electricity used in the manufacturing process of rebar and spooled rebar, is reported in the next table. This impact was calculated using the GWP-GHG indicator.

Impact Basic Category	Unit	Quantity
Global warming potential (GWP-GHG)	kg CO ₂ eq./kwh	3.86E-01

i Table 10. Electricity climate impact per kwh.

Scrap use climate impact

Another specific topic in accordance with the new requirements of the PCR is the report of the climate impact of the scrap inputs. These impacts were calculated using the GWP-GHG indicator.

Impact Basic Category	Unit	Quantity
Global warming potential (GWP-GHG)	kg CO ₂ eq./ton	6.76E-02

i Table 11. Scrap use, clime impact. Rebar and spooled rebar.

8. Environmental performance



Graph 1. A1-A3 Basic impact categories results

8. Environmental performance



Impact Basic Category	Unit	Total A1 – A3	C1) Demolition	C2) Waste transport	C3) Waste treatment	C4) Waste disposal	D) Benefits and charges beyond the system boundary
Global warming potential - fossil total (GWP-total)	kg CO ₂ eq.	4.06E+02	2.68E+00	1.91E+01	9.69E-03	6.69E+00	-3.51E+01
Global warming potential - fossil fuels (GWP-fossil)	kg CO ₂ eq.	4.06E+02	2.68E+00	1.91E+01	0.00E+00	6.68E+00	-3.62E+01
Global warming potential - biogenic (GWP-biogenic)	kg CO ₂ eq.	7.24E-02	3.76E-09	1.75E-07	9.69E-03	2.12E-07	9.53E-01
Global warming potential - land use and land use change (GWP-luluc)	kg CO ₂ eq.	2.05E-01	1.10E-04	7.52E-04	0.00E+00	1.92E-03	5.46E-02
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC-11 eq.	1.18E-05	4.23E-08	2.89E-07	0.00E+00	2.26E-08	-2.21E-06
Acidification potential, accumulated exceedance (AP)	mol H+ eq.	7.33E-01	2.57E-02	3.09E-02	0.00E+00	2.02E-02	-4.51E-02
Eutrophication potential - freshwater (EP-freshwater)	kg P eq.	5.32E-03	2.29E-06	4.58E-05	0.00E+00	8.03E-05	1.03E-02
Eutrophication potential - marine (EP-marine)	kg N eq.	1.94E-01	1.20E-02	7.18E-03	0.00E+00	5.97E-03	3.20E-03
Eutrophication potential - terrestrial (EP-terrestrial)	mol N eq.	2.12E+00	1.31E-01	7.18E-02	0.00E+00	6.76E-02	-3.12E-01
Photochemical ozone creation potential (POCP)	kg NMVOC eq.	1.16E+00	3.86E-02	4.42E-02	0.00E+00	1.86E-02	-3.32E-01
Abiotic depletion potential - non-fossil resources (ADPE)	kg Sb eq.	1.32E-04	1.13E-07	1.17E-06	0.00E+00	1.05E-05	1.58E-04
Abiotic depletion potential - fossil resources (ADPF)	MJ, net calorific value	6.46E+03	3.53E+01	2.64E+02	0.00E+00	3.24E+01	-2.32E+02
Water (user) deprivation potential (WDP)	m3 world eq. deprived	9.20E+01	4.52E-02	3.66E-01	0.00E+00	3.15E-01	-1.24E+02

Table 12. A1-A3 Basic impact categories results.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

8. Environmental performance



8.2. Use of resources

Parameters describing resource use were evaluated with the Cumulated Energy Demand method version 1.09 (Frischknecht et al. 2007) except for the indicator of use of net fresh water that was evaluated with Recipe 2016 Midpoint (H) version 1.00 (Huijbregts et al. 2017).

According to the EN15804:2012+A2:2019/AC:2021 standard, “Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products,” and Annex 3 of Product Category Rule 1.3.4 “Guidance for the calculation of primary energy use indicators,” considering scenario B outlined in the annex, the results of the environmental indicators evaluation describing resource use and others describing material and energy balance flows for modules A1-A3, C1-C4, and D are presented. A detailed description of the use of resources is provided in Table 14.

Indicators describing resource use	Unit	A1-A3	C1	C2	C3	C4	D
Use of renewable primary energy as energy carrier (PERE)	MJ, net calorific value	2.64E+02	6.87E-02	3.89E-01	1.21E-01	1.18E+00	5.21E+01
Use of renewable primary energy resources used as raw materials (PERM)	MJ, net calorific value	2.51E-01	0.00E+00	0.00E+00	-1.21E-01	1.30E-01	0.00E+00
Total use of renewable primary energy (PERT)	MJ, net calorific value	2.65E+02	6.87E-02	3.89E-01	0.00E+00	1.31E+00	5.21E+01
Use of non renewable primary energy as energy carrier (PENRE)	MJ, net calorific value	7.75E+03	3.75E+01	2.80E+02	3.68E+00	3.05E+01	-2.36E+02
Use of non renewable primary energy resources used as raw materials (PENRM)	MJ, net calorific value	7.58E+00	0.00E+00	0.00E+00	-3.68E+00	3.90E+00	0.00E+00
Total use of non renewable primary energy resource (PENRT)	MJ, net calorific value	7.76E+03	3.75E+01	2.80E+02	0.00E+00	3.44E+01	-2.36E+02
Use of secondary material (SM)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels (RSF)	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels (NRSF)	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water (FW)	m ³	1.80E+00	4.52E-02	3.66E-01	0.00E+00	3.15E-01	-1.24E+02

Table 13. Use of resources parameters.

8. Environmental performance



8.3. Other indicators describing waste categories

Environmental indicators describing waste generation were obtained from LCI except for background information which has been calculated using EDIP 2003 method (Hauschild and Potting, 2005). Environmental parameters describing waste generation are provided in Table 14.

Environmental information describing waste categories an output flows	Unit	A1-A3	C1	C2	C3	C4	D
Hazardous waste disposed (HWD)	kg	7.73E+01	2.36E-04	1.78E-03	0.00E+00	9.53E-05	-1.09E-02
Non-hazardous waste disposed (NHWD)	kg	5.51E+00	2.62E-03	6.73E-02	0.00E+00	4.00E+01	2.34E+01
Radioactive waste disposed (RWD)	kg	2.02E-03	1.72E-06	9.24E-06	0.00E+00	1.56E-05	8.38E-04
Components for re-use (CRU)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling (MFR)	kg	1.00E+00	0.00E+00	0.00E+00	0.00E+00	9.80E+02	1.00E+03
Materials for energy recovery (MER)	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported electrical energy (EEE)	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported thermal energy (EET)	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

*No radioactive waste is produced during DEACERO operations.

** The column "A3) Manufacturing direct and indirect, refers to direct data and background data regarding production of ancillary materials and other processes outside DEACERO's facilities".

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

Note: For the interpretation of results, the use of the results of modules A1-A3 (A1-A5 for services) without considering the results of module C.

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

8.4. Additional environmental information

Participation, alliances and badges.



DEACERO has an Environmental Management System Implementation Plan with the objective of obtaining ISO 14001:2015 certification in its steel mills located in Coahuila and Guanajuato, as well as in the wire plants located in the State of Mexico and Guanajuato and Nuevo León by the end of 2024.



Since 2022, DEACERO S.A.P.I. de C.V. has been committed to the corporate responsibility initiative of the United Nations Global Compact and its principles in the areas of human rights, labor, environment and anti-corruption.

Table 14. Other indicators describing waste categories.

9. Differences between EDP versions

The previous version of this EPD named Steel rebar manufactured from steel scrap was published on November 8, 2018, in accordance with PCR 2012:01 Construction products and construction services, Version 2.2 (2017-05-03).

This EPD was updated following EN 15804:2012+A2:2019/AC:2021 standard and Construction products PCR 2019:2014 V 1.3.4 (2024-04-30).

10. Verification and registration



CEN STANDARD EN 15804 SERVED AS THE CORE PCR

Programme	 International EPD® System www.environdec.com  EPD registered through the fully aligned regional programme/hub: EPD Latin America www.epdlatinamerica.com
Programme operator	Programme operator EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden EPD Latin America Chile: Alonso de Ercilla 2996, Ñuñoa, Santiago Chile. Mexico: Bosques De Bohemia 2 No. 9, Bosques del Lago. Cuautitlan Izcalli, Estado de México, México.
Revision date:	2024-10-15 (version 001)
EPD registration number:	EPD-IES-0001235:001 (S-P-01235)
Validity date:	2029-10-15
Issue date:	2018-11-08
Reference year of data:	2022
Geographical scope:	Mexico
Production Plant:	Acería Ramos and Acería Celaya
Central product classification:	UN CPC 4124 Bars and rods, hot rolled, of iron or steel
Product category rules:	PCR 2019:14 construction products, Version 1.3.4 (EN15804:2012+A2:2019/AC:2021)
PCR review was conducted by:	Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact.
Independent verification of the declaration data, according to ISO 14025:2006.	<input type="checkbox"/> EPD process certification (Internal) <input checked="" type="checkbox"/> EPD verification (External)
Third-party verifier: Approved by:	Rubén Carnerero Acosta Approved EPD verifier r.carnerero@ik-ingenieria.com The International EPD® System
Procedure for follow-up of data during EPD validity involves third-party verifier:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

11. Certifications



Since 2020, DEACERO has been re-recognized annually with the Socially Responsible Company Distinction awarded by the Mexican Center for Philanthropy (Cemefi).



DEACERO is evaluated annually on sustainability and social responsibility through EcoVadis, with the aim of aligning itself with ethical, sustainable and transparent practices in areas such as the environment, labor, human rights and business ethics.



DECAERO has had a Quality Management System certified under the international standard ISO 14001:2015 for its processes at Acería Celaya and Acería Ramos since 2021, and is currently in force.



Deacero has its testing laboratory located in Acería Celaya accredited in accordance with the requirements established in the standard, NMX-EC-17025-IMNC-2018 and ISO/IEC 17025:2017.

12. Contact information



EPD OWNER

LCA AUTOR

PROGRAMME OPERATOR



DEACERO S.A.P.I. de C.V.
Ramos: Carretera Monclova
Km. 4, Tramo Santa Cruz-Ojo
Caliente #2125, Localidad
El Mesón del Norte, Ramos
Arizpe, del Esta de Coahuila,
México. C.P. 25900

Celaya: Carretera 45
Panamericana, Tramo
Celaya-Salamanca Km
64.8, El Chinaco, Villagrán,
Guanajuato

www.deacero.com

Contact person:
María Laura Gutiérrez
Sauceda – subdirectora de
Sustentabilidad
sustentabilidad@deacero.com

Center for Life Cycle Assessment
and Sustainable Design
– CADIS

Bosques De Bohemia 2 No. 9,
Bosques del Lago.
Cuautitlan Izcalli, Estado de
Méxi-co, México.
C.P. 54766
www.centroacv.mx

LCA Study: Life Cycle
Assessment (LCA)
methodology of rebar and
spooled rebar manufactured
from steel scrap.

LCA Authors: Díaz Leandra,
García René, González Mireya.

Contact person:
Juan Pablo Chargoy
jpchargoy@centroacv.mx

EPD International AB
Box 210 60, SE-100 31,
Stockholm, Sweden.
www.environdec.com

info@environdec.com

EPD registered through the
fully aligned regional pro-
gramme/hub:



EPD Latin America
www.epd-latinamerica.com

Chile:
Alonso de Ercilla 2996,
Ñuñoa, Santiago Chile.

México:
Av. Convento de Actopan 24
Int. 7A, Colonia Jardines de
Santa Mónica, Tlalnepantla
de Baz, Estado de México,
México, C.P. 54050

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