

Environmental Product Declaration

In accordance with ISO 14025 and ISO 21930 for:

Cement Mortar Lined Welded Steel Pipes

from

Northwest Pipe Company



Program operator:	UL Solutions www.ul.com – spot.ul.com
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1. Introduction

This document is a Type III environmental product declaration (EPD) for Cement Mortar Lined Welded Steel pipe, as manufactured at the Northwest Pipe Company (NWP) Adelanto, California facility for the reference year 2022.

This declaration has been prepared according to the requirements of ISO 14040 [1], ISO 14044 [2], ISO 14025 [3], and ISO 21930 [4].

The intent of this document is to further the development of environmentally compatible and more sustainable construction methods by providing comprehensive environmental information related to the potential impacts of Cement Mortar Lined Welded Steel pipe in accordance with international standards.

2. General information

Program information

Program operator:	UL Solutions 333 Pfingsten Road Northbrook, Illinois 60062 USA www.ul.com For any explanatory material regarding this EPD, please contact the program operator.
EPD commissioner and owner:	Northwest Pipe Company Headquarters: 201 NE Park Plaza Drive, Suite 100 Vancouver, Washington 98684 USA www.nwpipe.com Northwest Pipe Company is a leading manufacturer of engineered steel pipe systems for water infrastructure. Based in Vancouver, Washington, the company provides durable, high-quality solutions for water transmission and wastewater systems across North America, supporting critical infrastructure projects with a focus on reliability, innovation, and sustainability.
Manufacturer and production facility:	Northwest Pipe Company – Adelanto Plant 12351 Rancho Road Adelanto, California 92301 USA
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EPD information

LCA report:	A Cradle-to-Gate Life Cycle Assessment of Cement Mortar Lined Welded Steel Pipes, Prepared for: Northwest Pipe Company, February 2025.
Product name:	Cement Mortar Lined Welded Steel pipe (UN CPC code: 41287)
Product applicability:	Cement Mortar Lined Welded Steel pipe is used for water, stormwater, and wastewater conveyance systems.
Product Category Rules (PCR):	ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services [4].
Declared unit:	1,000 linear feet of pipe <i>The declared unit may have different functionality depending on the specifications of the product that is declared.</i>
Declaration type:	A “cradle-to-gate” production stage EPD for Cement Mortar Lined Welded Steel pipe. Production stage activities covered include the raw material supply, transport, and manufacturing (modules A1 to A3). The declaration is intended for Business-to-Business (B-to-B) communication.
Geographical scope:	United States
This EPD was independently verified by and in accordance with ISO 14025 and ISO 21930:	Cooper McCollum, UL Solutions IK-Kim, SmartEco  

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programs 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.

3. Product information

3.1. Product description

Since 1966, Northwest Pipe Company has manufactured Cement Mortar Lined Welded Steel Pipe—the industry standard for gravity-flow drainage systems. This pipe (UN CPC code: 41287) features a smooth interior for superior hydraulic performance and a corrugated exterior for added strength. Constructed with application-specific high-density polyethylene, it offers excellent resistance to corrosion and abrasion. Available in soil-tight (ST), water-tight (WT), and plain-end configurations, it supports a variety of joint options, including bell and spigot, gasket, bell wrap, or a 10.8 psi pressure-rated coupler. Combining the strength of corrugated pipe with the flow efficiency of a smooth interior, it delivers long-lasting performance. While primarily used in storm sewers, it is also suitable for culverts, cross drains, detention/retention systems, ditch enclosures, athletic fields, railroads, landfills, mining, industrial, and forestry applications. This EPD covers multiple types of Cement Mortar Lined Welded Steel Pipe (see Table 1). For product specifications and installation guidance, visit: nwpipe.com.

Table 1. Declared Cement Mortar Lined Welded Steel pipe dimensions

Pipe	Diameter (in)	Wall Thickness of Steel (in)	Wall Thickness of Inner Diameter Lining (in)	Wall Thickness of Outer Diameter Coating (in)	lb/ft	lb/1000ft	kg/1000ft
6.625" pipe weighs 31.7 lb/ft (comes in 40 ft lengths)	6.625	0.432	0.375	1.000	31.7	31,746	14,400
17.375" pipe weighs 33.8 lb/ft (comes in 40 ft lengths)	17.375	0.188	0.500	0.750	33.8	33,824	15,342
19.781" pipe weighs 39.2 lb/ft (comes in 40 ft lengths)	19.781	0.188	0.500	0.750	39.2	39,189	17,776
21.781" pipe weighs 43.6 lb/ft (comes in 40 ft lengths)	21.781	0.188	0.750	0.750	43.6	43,590	19,772
25.750" pipe weighs 51.4 lb/ft (comes in 40 ft lengths)	25.750	0.188	0.750	0.750	51.4	51,408	23,319
30.000" pipe weighs 196.2 lb/ft (comes in 40 ft lengths)	30.000	0.625	0.625	--	196.2	196,219	89,005
31.875" pipe weighs 84.5 lb/ft (comes in 40 ft lengths)	31.875	0.250	0.688	0.750	84.5	84,496	38,327
37.875" pipe weighs 75.8 lb/ft (comes in 40 ft lengths)	37.875	0.188	0.375	0.750	75.8	75,758	34,364
38.000" pipe weighs 101.4 lb/ft (comes in 40 ft lengths)	38.000	0.250	0.750	0.750	101.4	101,437	46,012
61.000" pipe weighs 323.3 lb/ft (comes in 20 ft lengths)	61.000	0.500	0.500	1.000	323.3	323,315	146,656
61.000" pipe weighs 328.4 lb/ft (comes in 10 ft lengths)	61.000	0.500	0.500	1.000	328.4	328,358	148,943
94.000" pipe weighs 487.8 lb/ft (comes in 20 ft lengths)	94.000	0.500	0.500	--	487.8	487,805	221,268

3.2. Product specifications

Table 2 shows the product specifications for the declared products.

Table 2. Cement Mortar Lined Welded Steel pipe specifications

Specifications
AWWA C200, Pipe Cylinders
AWWA C205, Cement Mortar Lining and/or Coating
AWWA C222, Polyurethane Lining and/or Coating

3.3. Material composition

Table 3 provides the material composition by input material (in %) for Cement Mortar Lined Welded Steel pipes.

Table 3. Material composition per Cement Mortar Lined Welded Steel pipes (in %)

Material composition	Cement Mortar Lined Welded Steel pipes
Steel	33-80%
Cement mortar	20-67%

4. Declared unit

The declared unit is defined as the quantity of a construction product for use as a reference unit in an EPD based on a life cycle assessment (LCA) for the expression of environmental information in information modules [2]. The declared unit for Cement Mortar Lined Welded Steel pipes as manufactured at NWP’s Adelanto, California facility is defined as 1,000 linear feet of piping [5, 6].

5. Life cycle stages

Figure 1 shows the life cycle stages and information modules that are included within the cradle-to-gate LCA system boundary of this EPD. The boundary is “cradle-to-gate,” which includes the *Production stage* (modules A1 to A3). *Construction, Use, and End-of-Life stages* are excluded from the system boundary. The *Production stage* system boundary is shown in

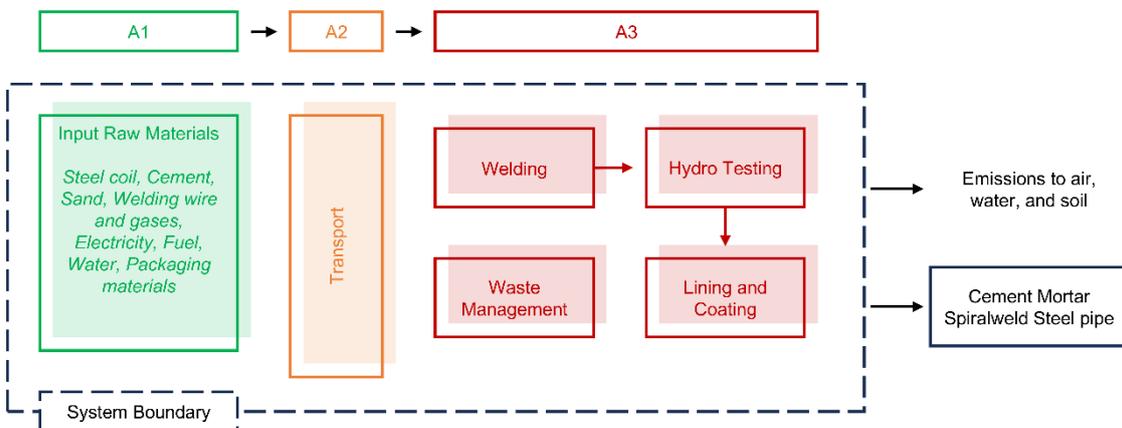


Figure 2. Per ISO 21930, 7.1.7.2.1 [4], the system boundary with nature (natural environment) includes those technical processes that provide the material and energy inputs into the system and the

subsequent manufacturing and transport processes up to the to the factory gate, as well as the processing of any waste arising from those processes.

Production stage			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	Operational Energy Use	Operational Water Use	De-Construction/ Demolition	Transport to waste processing or disposal	Waste processing	Disposal of waste
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
X			MND												
X: module is included in system boundary; MND: module is not declared (excluded from system boundary)															

Figure 1. Life cycle stages and modules

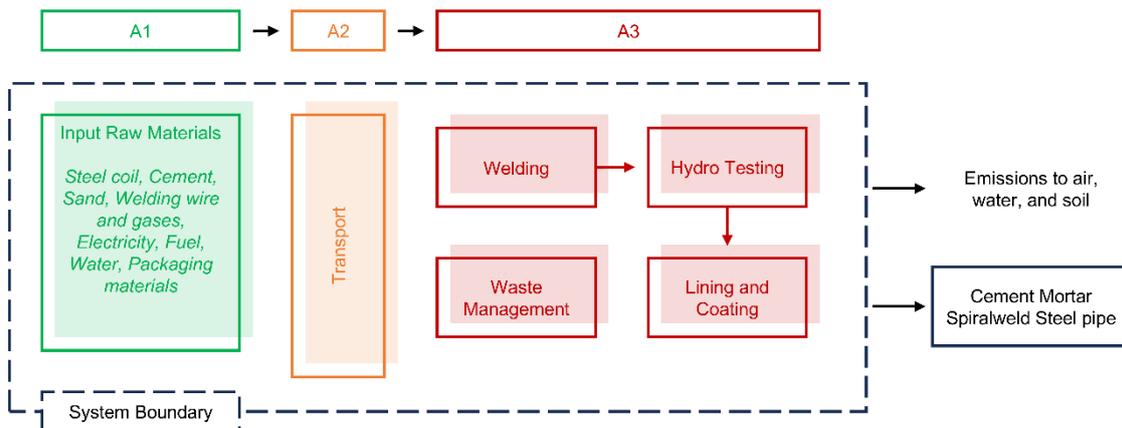


Figure 2. Production stage (modules A1 to A3) system boundary for Cement Mortar Lined Welded Steel pipe

This EPD excludes the following processes:

- 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.

6. Life cycle inventory

6.1. Data collection, sources, and calculations

Life cycle inventory (LCI) data collection was based on one customized LCI survey. The LCI survey covered the primary data for the NWP Adelanto, California facility for the 2022 reference year (12 consecutive months).

Data calculation procedures follow ISO 14044 [2] and ISO 21930 [4]. The LCA model was developed using openLCA v2.0.3, 2023 [8]. The openLCA software contains recognized databases (e.g., ecoinvent v3.9.1, 2023 database, Allocation, Cut-off by classification and US LCI Database, 2024) that provide LCI datasets for upstream, core, and downstream material and processes. The openLCA software also contains the US EPA Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), version 2.2, 2021 [10] life cycle impact assessment (LCIA) methodology and the Cumulative Energy Demand, version 1.01, 1997 LCIA methodology, which are used for this LCA study. Per ISO 21930, 7.2.2 [4], when transforming the inputs and outputs of combustible material into inputs and outputs of energy, the net calorific value (lower heating value) of fuels is applied according to scientifically based and accepted values specific to the combustible material.

6.2. Data quality requirements and assessments

A detailed description of collected data and the data quality assessment regarding ISO 14044 [2] and ISO 21930 [4] is provided in the LCA report [9]. Data quality is assessed based on its representativeness (technology coverage, geographic coverage, time coverage), completeness, consistency, reproducibility, transparency, and uncertainty (see Table 4).

Table 4. Data quality requirements and assessments

Data Quality Requirements	Description
Technology Coverage	<p>The data represents the prevailing technology at NWP’s Adelanto, California facility. Whenever available, technological-specific or average industry LCI datasets were utilized for all upstream and core materials and processes.</p> <p><i>Technological representativeness is characterized as “good” to “very good.”</i></p>
Geographic Coverage	<p>The geographic region considered is the US. Whenever available, for all upstream and core materials and processes, geographically specific LCI datasets were utilized.</p> <p><i>Geographical representativeness is characterized as “good” to “very good.”</i></p>
Time Coverage	<p>Activity data are representative.</p> <ul style="list-style-type: none"> • Cement Mortar Lined Welded Steel pipe manufacturing process primary data was collected for the reference year 2022 (12 consecutive months) • Generic data: the most appropriate LCI datasets were used as found in the ecoinvent v3.9.1 database for US and global and US LCI Database, and modeled in openLCA v2.0.3, 2023 [8]. <p><i>Temporal representativeness is characterized as “very good.”</i></p>
Completeness	<p>All relevant, specific processes, including inputs (raw materials, energy, and ancillary materials) and outputs (emissions and production volumes) were considered and modeled. The relevant background materials and processes were taken from the ecoinvent v3.9.1 LCI database for US and global and US LCI Database and modeled in openLCA v2.0.3, 2023 [8].</p> <p>The completeness of the cradle-to-gate value chain in terms of process</p>

Data Quality Requirements	Description
	<p>steps is rigorously assessed for all products and documented in the LCA report.</p> <p><i>Completeness is characterized as “very good.”</i></p>
Consistency	<p>To ensure consistency, the input/output LCI modeling of the Cement Mortar Lined Welded Steel pipes used the same LCI modeling structure, which consisted of input raw, secondary, ancillary, and packaging materials, energy flows, water resource inputs, product outputs, emissions to air, water and soil, and waste disposal. Crosschecks concerning the plausibility of mass and energy flows were conducted.</p> <p><i>Consistency is characterized as “very good.”</i></p>
Reproducibility	<p>Internal reproducibility is possible since the data and the models are stored and available in an LCI database developed in openLCA v2.0.3, 2023 [8]. A high level of transparency is provided throughout the reviewed LCA report as the LCI profile is presented for the declared products. Key primary (manufacturer specific) and secondary (generic) LCI data sources are summarized in the supporting LCA report.</p> <p><i>Reproducibility is characterized as “very good.”</i></p>
Transparency	<p>Activity and LCI datasets are transparently disclosed in the LCA report, including data sources.</p> <p><i>Transparency is characterized as “very good.”</i></p>
Uncertainty	<p>A sensitivity check was conducted to assess the reliability of the EPD results and conclusions by determining how they are affected by uncertainties in the underlying data and assumptions. The LCA report includes the results of a contribution analysis and a sensitivity analysis of key parameters.</p> <p><i>Uncertainty is characterized as “good” to “very good.”</i></p>

6.3. Allocation rules

The NWP Adelanto, California facility produces various products and as such allocation was necessary. Mass based, plant-specific data for 1,000 kg of declared Cement Mortar Lined Welded Steel pipes were used to calculate the input raw and semi-finished products consumed. Mass was used as the physical parameter for allocating flows between the products of interest and other co-products to calculate the input energy flows, ancillary materials used at the facility, total water consumption, process emissions to air and water, and waste flows (as applicable). No environmental burden or credit is allocated to the by-product (process scrap) of the declared products. The LCI modeling accounts for the manufacturing yield (production loss) of all upstream and on-site processes.

6.4. Cut-off rules

The cut-off criteria as per ISO 21930, 7.1.8 [4] were followed.

In cases of insufficient input data or data gaps for a unit process, the cut-off criteria shall be 1% of renewable primary resource (energy) usage, 1% non-renewable primary resource (energy) usage, 1% of the total mass input of that unit process, and 1% of environmental impacts. The total of neglected flows per module shall be a maximum of 5% of energy usage, mass, and environmental impacts. When assumptions are used in combination with plausibility considerations and expert judgement to demonstrate compliance with these criteria, the assumptions shall be conservative.

All input/output data collected at NWP’s Adelanto, California facility were included in the LCI modeling developed using openLCA v2.0.3, 2023 [8]. None of the input/output data were excluded based on the cut-off criteria.

7. Life cycle assessment results

Table 5 and

Table 6 present the “cradle-to-gate” LCA results for 1,000 linear feet and 1,000 kg of Cement Mortar Lined Welded Steel pipes, respectively.

Table 6 allows for calculation of the EPD results for any other dimensions of Cement Mortar Lined Welded Steel pipes.

The US EPA TRACI, version 2.2, 2021 [10] impact categories are used as they provide a North American context for the mandatory category indicators to be included in this EPD. These are relative expressions only and do not predict category impact endpoints, the exceeding of thresholds, safety margins or risks [2]. Per ISO 21930, 7.1.7.1 [4], “individual indicators for information modules A1, A2 and A3 may be aggregated to a total for each indicator in the production stage.”

Table 5(a). Production stage (total of modules A1 to A3) EPD results for 1,000 linear feet of Cement Mortar Lined Welded Steel pipes

Impact category and inventory indicators	Unit	6.625" pipe	17.375" pipe	19.781" pipe	21.781" pipe	25.750" pipe	30.000" pipe
		(31.7 lb/ft)	(33.8 lb/ft)	(39.2 lb/ft)	(43.6 lb/ft)	(51.4 lb/ft)	(196.2 lb/ft)
		1000 ft					
Global warming potential, GWP 100 ^[1]	kg CO ₂ eq	71,232.3	92,959.3	106,949.9	126,245.4	149,032.5	371,043.8
Ozone depletion potential, ODP ^[1]	kg CFC-11 eq	1.29E-03	1.46E-03	1.68E-03	1.91E-03	2.25E-03	7.62E-03
Smog formation potential, SFP ^[1]	kg O ₃ eq	4,667.4	5,862.0	6,752.5	7,890.4	9,313.1	25,241.6
Acidification potential, AP ^[1]	kg SO ₂ eq	273.5	338.9	390.5	454.7	536.6	1,497.4
Eutrophication potential, freshwater EP _f ^[1]	kg P eq	21.5	24.4	28.2	32.0	37.8	127.3
Eutrophication potential, marine EP _m ^[1]	kg N eq	183.2	232.4	267.6	313.5	370.0	981.8
Renewable primary resources used as an energy carrier (fuel), RPR _E ^[2]	MJ	59,943.3	65,398.1	75,704.8	84,859.2	100,093.3	364,301.6
Renewable primary resources with energy content used as material, RPR _M ^{[2][3]}	MJ	0	0	0	0	0	0
Non-renewable primary resources used as an energy carrier (fuel), NRPR _E ^[2]	MJ	777,657.1	917,962.6	1,059,623.4	1,216,784.6	1,435,785.8	4,443,859.9
Non-renewable primary resources with energy content used as material, NRPR _M ^{[2][3]}	MJ	0	0	0	0	0	0
Secondary materials, SM ^[2]	kg	0	0	0	0	0	0
Renewable secondary fuels, RSF ^[2]	MJ	0	0	0	0	0	0
Non-renewable secondary fuels, NRSF ^[2]	MJ	0	0	0	0	0	0
Recovered energy, RE ^[2]	MJ	0	0	0	0	0	0
Consumption of freshwater, FW ^[2]	m ³	225.0	239.7	277.7	308.9	364.3	1,390.7
Hazardous waste disposed, HWD ^[2]	kg	0	0	0	0	0	0
Non-hazardous waste disposed, NHWD ^[2]	kg	360.4	384.0	445.0	494.9	583.7	2,227.9
High-level radioactive waste, conditioned, to final repository, HLRW ^{[2][4]}	m ³	INA	INA	INA	INA	INA	INA
Intermediate- and low-level radioactive waste, conditioned, to final repository, ILLRW ^{[2][4]}	m ³	INA	INA	INA	INA	INA	INA
Components for re-use, CRU ^[2]	kg	0	0	0	0	0	0
Materials for recycling, MR ^[2]	kg	3,105.0	3,878.1	4,468.1	5,213.2	6,153.0	16,879.0
Materials for energy recovery, MER ^[2]	kg	0	0	0	0	0	0
Recovered energy exported from the product system, EE ^[2]	MJ	0	0	0	0	0	0

See Notes for Tables 5 and 6, below.

Table 5(b). Production stage (total of modules A1 to A3) EPD results for 1,000 linear feet of Cement Mortar Lined Welded Steel pipes

Impact category and inventory indicators	Unit	31.875" pipe (84.5 lb/ft)	37.875" pipe (75.8 lb/ft)	38.000" pipe (101.4 lb/ft)	61.000" pipe (323.3 lb/ft)	61.000" pipe (328.4 lb/ft)	94.000" pipe (487.8 lb/ft)
		1000 ft	1000 ft	1000 ft	1000 ft	1000 ft	1000 ft
Global warming potential, GWP 100 ^[1]	kg CO ₂ eq	218,148.4	198,508.9	264,709.6	707,467.9	716,299.4	925,217.1
Ozone depletion potential, ODP ^[1]	kg CFC-11 eq	3.57E-03	3.21E-03	4.30E-03	1.30E-02	1.32E-02	1.90E-02
Smog formation potential, SFP ^[1]	kg O ₃ eq	13,910.6	12,624.2	16,846.7	46,597.5	47,209.6	62,896.7
Acidification potential, AP ^[1]	kg SO ₂ eq	807.4	732.0	977.1	2,734.9	2,771.4	3,730.3
Eutrophication potential, freshwater EP _f ^[1]	kg P eq	59.8	53.8	72.0	217.9	221.1	316.7
Eutrophication potential, marine EP _m ^[1]	kg N eq	549.9	499.4	666.3	1,827.0	1,850.7	2,447.0
Renewable primary resources used as an energy carrier (fuel), RPR _E ^[2]	MJ	162,111.3	145,607.9	194,866.8	608,886.4	618,187.0	905,911.5
Renewable primary resources with energy content used as material, RPR _M ^{[2][3]}	MJ	0	0	0	0	0	0
Non-renewable primary resources used as an energy carrier (fuel), NRPR _E ^[2]	MJ	2,219,446.0	2,005,218.3	2,679,225.6	7,825,713.7	7,936,239.8	11,062,164.9
Non-renewable primary resources with energy content used as material, NRPR _M ^{[2][3]}	MJ	0	0	0	0	0	0
Secondary materials, SM ^[2]	kg	0	0	0	0	0	0
Renewable secondary fuels, RSF ^[2]	MJ	0	0	0	0	0	0
Non-renewable secondary fuels, NRSF ^[2]	MJ	0	0	0	0	0	0
Recovered energy, RE ^[2]	MJ	0	0	0	0	0	0
Consumption of freshwater, FW ^[2]	m ³	598.8	536.9	718.9	2,291.4	2,327.2	3,457.2
Hazardous waste disposed, HWD ^[2]	kg	0	0	0	0	0	0
Non-hazardous waste disposed, NHWD ^[2]	kg	959.4	860.1	1,151.7	3,670.9	3,728.2	5,538.5
High-level radioactive waste, conditioned, to final repository, HLRW ^{[2][4]}	m ³	INA	INA	INA	INA	INA	INA
Intermediate- and low-level radioactive waste, conditioned, to final repository, ILLRW ^{[2][4]}	m ³	INA	INA	INA	INA	INA	INA
Components for re-use, CRU ^[2]	kg	0	0	0	0	0	0
Materials for recycling, MR ^[2]	kg	9,218.0	8,362.2	11,160.4	31,021.3	31,431.6	42,054.9
Materials for energy recovery, MER ^[2]	kg	0	0	0	0	0	0
Recovered energy exported from the product system, EE ^[2]	MJ	0	0	0	0	0	0

See Notes for Tables 5 and 6, below.

Table 6. Production stage (total of modules A1 to A3) EPD results for 1,000 kg of Cement Mortar Lined Welded Steel pipes

Impact category and inventory indicators	Unit	Total
		1000 kg
Global warming potential, GWP 100 ^[1]	kg CO ₂ eq	4,584.5
Ozone depletion potential, ODP ^[1]	kg CFC-11 eq	8.77E-05
Smog formation potential, SFP ^[1]	kg O ₃ eq	305.3
Acidification potential, AP ^[1]	kg SO ₂ eq	18.0
Eutrophication potential, freshwater EP _f ^[1]	kg P eq	1.5
Eutrophication potential, marine EP _m ^[1]	kg N eq	11.9
Renewable primary resources used as an energy carrier (fuel), RPR _E ^[2]	MJ	4,130.3
Renewable primary resources with energy content used as material, RPR _M ^{[2][3]}	MJ	0
Non-renewable primary resources used as an energy carrier (fuel), NRPR _E ^[2]	MJ	52,106.4
Non-renewable primary resources with energy content used as material, NRPR _M ^{[2][3]}	MJ	0
Secondary materials, SM ^[2]	kg	0
Renewable secondary fuels, RSF ^[2]	MJ	0
Non-renewable secondary fuels, NRSF ^[2]	MJ	0
Recovered energy, RE ^[2]	MJ	0
Consumption of freshwater, FW ^[2]	m ³	15.6
Hazardous waste disposed, HWD ^[2]	kg	0
Non-hazardous waste disposed, NHWD ^[2]	kg	25.0
High-level radioactive waste, conditioned, to final repository, HLRW ^{[2][4]}	m ³	INA
Intermediate- and low-level radioactive waste, conditioned, to final repository, ILLRW ^{[2][4]}	m ³	INA
Components for re-use, CRU ^[2]	kg	0
Materials for recycling, MR ^[2]	kg	203.5
Materials for energy recovery, MER ^[2]	kg	0
Recovered energy exported from the product system, EE ^[2]	MJ	0

Notes for Tables 5 and 6:

^[1] Calculated as per the US EPA TRACI, version 2.2, 2021, GWP 100 excludes biogenic CO₂ removals and emissions associated with any biobased products, including bio-based packaging. There is no biogenic content in the declared product. CO₂ emissions from calcination and carbonation are not applicable to the declared product. The 100-year time horizon GWP factors in the US EPA TRACI, version 2.2, 2021 [10] are provided by the IPCC 2007 Fourth Assessment Report (AR4).

^[2] Calculated as per ACLCA ISO 21930 Guidance [11], respective sections 6.1 to 10.8.

^[3] Packaging and ancillary materials are not included.

^[4] INA = indicator not assessed.

8. Interpretation

The Cement Mortar Lined Welded Steel pipes EPD results represent a “cradle-to-gate” environmental profile for 1,000 linear feet of Cement Mortar Lined Welded Steel pipes manufactured at NWP’s Adelanto, California facility for the reference year 2022.

Contribution analysis indicates that upstream steel production contributes the largest share of the LCIA category indicator results, accounting for between 49% and 81% of the *Production stage* (modules A1 to A3) potential environmental burdens. Upstream cement production is the second largest contributor to the overall potential impacts of the *Production stage*, accounting for between 3% and 15%.

9. Declaration type

This “cradle-to-gate” EPD applies to Cement Mortar Lined Welded Steel pipes. Production activities covered include the extraction and upstream production, transport to factory, manufacturing (modules A1 to A3). The declaration is intended for Business-to-Business (B-to-B) communication.

The EPD for Cement Mortar Lined Welded Steel pipes falls under the description:

- A product-specific EPD, from one (1) manufacturer’s plant.

10. EPD comparability limitation statement

The following ISO 14025 and ISO 21930 statements indicate the EPD comparability limitations and intent to avoid any market distortions or misinterpretation of EPDs.

- Environmental declarations from different programs may not be comparable [3].
- Only EPDs prepared from cradle-to-grave life cycle results and based on the same function, reference service life, quantified by the same functional unit, and meeting all the conditions for comparability listed in ISO 14025 and ISO 21930 can be used to compare between products.
- This EPD covers only the cradle-to-gate impacts of water, stormwater, and wastewater conveyance systems in North America using a declared unit and the results cannot be used to compare between products.
- Comparative use of this EPD is only appropriate when the EPDs being compared are based on the same Product Category Rules (PCR), reference equivalent functional or declared units, and cover identical life cycle stages under equivalent data quality, assumptions, and scenarios in accordance with ISO 21930:2017.

11. References

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