



Declaration Owner

Sloan Valve Company

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Product

Designer Washdown Urinal (SU-7409; SU-7419)

Functional Unit

One commercial urinal in an average commercial environment with a Reference Service Life of 30 years in a building with an Estimated Service Life of 75 years

EPD Number and Period of Validity

SCS-EPD-10637

EPD Valid May 6, 2026 – May 5, 2031

Product Category Rule

Sustainable Minds Part A: LCA calculation rules and report requirements. Version 2023. August 2023.

Sustainable Minds Part B: Product group definition | Commercial urinals | Part B #23-004. Version 3.0. March 2024

Program Operator

SCS Global Services

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Declaration owner:	Sloan Valve Company
Address:	10500 Seymour Avenue, Franklin Park, IL 60131
Declaration Number:	SCS-EPD-10637
Declaration Validity Period:	May 6, 2026 – May 7, 2031
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Riley Tesman, SCS Consulting Services
LCA Software and LCI database:	OpenLCA 2.5.1 software and the Ecoinvent v3.12 database
Product's Intended Application:	Sloan Designer Urinals are installed in restrooms for commercial buildings, airports, stadiums, and the healthcare and hospitality sectors.
Product RSL:	30 Years (ESL 75 Years)
Markets of Applicability:	North America
EPD Type:	Product-Specific
EPD Scope:	Cradle-to-Grave
LCIA Method and Version:	TRACI 2.2
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒ external
LCA Reviewer:	 Lindita Bushi, PhD, Athena Sustainable Materials Institute
Part A Product Category Rule:	Sustainable Minds Part A: LCA calculation rules and report requirements. Version 2023. August 2023.
Part A PCR Review conducted by:	Sustainable Minds Technical Advisory Board (TAB)
Part B Product Category Rule:	Sustainable Minds Part B: Product group definition Commercial urinals Part B #23-004. Version 3.0. March 2024
Part B PCR Review conducted by:	Jack Geibig (Chair), Ecoform; Hugues Imbeault -Tetreault, Groupe AGÉCO; Rebe Feraldi, Pacific Northwest National Laboratory
Independent verification of the declaration and data, according to ISO 14025, ISO 21930, and the PCR	☐ internal ☒ external
EPD Verifier:	 Lindita Bushi, PhD, Athena Sustainable Materials Institute
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Disclaimers: This EPD conforms to ISO 14025, 14040, 14044, and ISO 21930. Scope of Results Reported: The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions. Accuracy of Results: Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy. Comparability: The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled. In accordance with ISO 21930:2017, EPDs are comparable only if they comply with the core PCR, 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. The owner of the declaration shall be liable for the underlying information and evidence; SCS shall not be liable with respect to manufacturer information, life cycle assessment data, and evidence supplied or made available to SCS.	

1. ABOUT Sloan

Sloan is the world's leading manufacturer of commercial plumbing systems and has been in operation since 1906. Headquartered in Franklin Park, Illinois, USA, the company is at the forefront of the green building movement and provides smart, sustainable restroom solutions by manufacturing water-efficient products such as flushometers, electronic faucets, sink systems, soap dispensing systems, and vitreous china fixtures for commercial, industrial, and institutional markets worldwide. The Sloan Designer Urinals are manufactured in Zhangzhou, China.

2. PRODUCT

2.1 Product Description

The Sloan Designer Urinal is an aesthetically pleasing washdown urinal that provides the performance you depend on from Sloan. The Designer Urinal is built for optimal performance with any Sloan urinal flushometer—exposed or concealed, manual or sensor-activated. The optional SloanTec® Hydrophobic Glaze will also keep the urinal clean longer. The representative washdown urinal works with 0.125 to 1.0 gpf (gallons per flush)/0.5 to 3.8 Lpf (liters per flush), is made of vitreous china with a ¾" top spud, has a 2" national pipe thread (NPT) outlet flange, and includes a removable strainer, inlet spud, and hanger. Sloan washdown urinals are International Association of Plumbing and Mechanical Officials (IAPMO) certified to meet or exceed American Society of Mechanical Engineers (ASME) A112.19.2 standards, are WaterSense listed by the US Environmental Protection Agency, and meet Americans with Disabilities Act (ADA) guidelines and American National Standards Institute (ANSI) A117.1 requirements.

Designer Urinals are specifically intended for commercial facilities that need to accommodate many restroom visitors and save water. Sloan urinals use as little as a 0.125 gallons of water—much less than the 1.0 gpf maximum for urinals—and washdown urinals are engineered to make the most of the minimal flush volume to help ensure fixtures provide a clean, pleasant experience for every user.

These washdown urinals can be paired with the widest array of manual and sensor flushometers in the industry, including our models designed specifically for reclaimed water systems, giving you the ultimate flexibility to meet your specific application requirements

The product system under study does not include a flushometer, as these are covered by a separate Product Category Rule (PCR).

Applicable classification systems for this product include CSI MasterFormat® 2022 Section 22 42 13.16 (Urinals) and the United Nations Standard Products and Services Code (UNSPSC) 30181507 (Urinals).

The specific products considered for the assessment are presented in Table 1.

Table 1. *Product sizes and technical specifications.*

Product	Product Details	Product Description	Dimensions	Mass (kg)
Top Spud	- Flush Volume: 0.125-1.0 gpf (1.9-3.8 lpf) - Flush Volume determined by the Flushometer used with the Fixture - Flush Method: Washdown	- Designed to maximize and complement Sloan flushometers - Small size and fully enclosed trapway provide attractive design - Thorough washdown flushing action - Vandal resistant stainless steel strainer included - IAPMO certified to meet or exceed ASME A112.19.2 standards - Water Sense listed by EPA that qualifies for most rebate programs - Meets ADA guidelines and ANSI A117.1 requirements when installed accordingly	Nominal Dimensions: 14.125" x 12.625" x 23.125" (359 x 321 x 587mm)	18.7
Bottom Spud	- Flush Volume: 0.125-1.0 gpf (1.9-3.8 lpf) - Flush Volume determined by the Flushometer used with the Fixture - Flush Method: Washdown	- Designed to maximize and complement Sloan flushometers - Small size and fully enclosed trapway provide attractive design - Thorough washdown flushing action - Vandal resistant stainless steel strainer included - IAPMO certified to meet or exceed ASME A112.19.2 standards - Water Sense listed by EPA that qualifies for most rebate programs - Meets ADA guidelines and ANSI A117.1 requirements when installed accordingly	Nominal Dimensions: 14.125" x 12.625" x 23.125" (359 x 321 x 587mm)	18.7

2.2 Product Flow Diagram

A flow diagram illustrating the production processes and life cycle phases included in the scope of the EPD is provided below

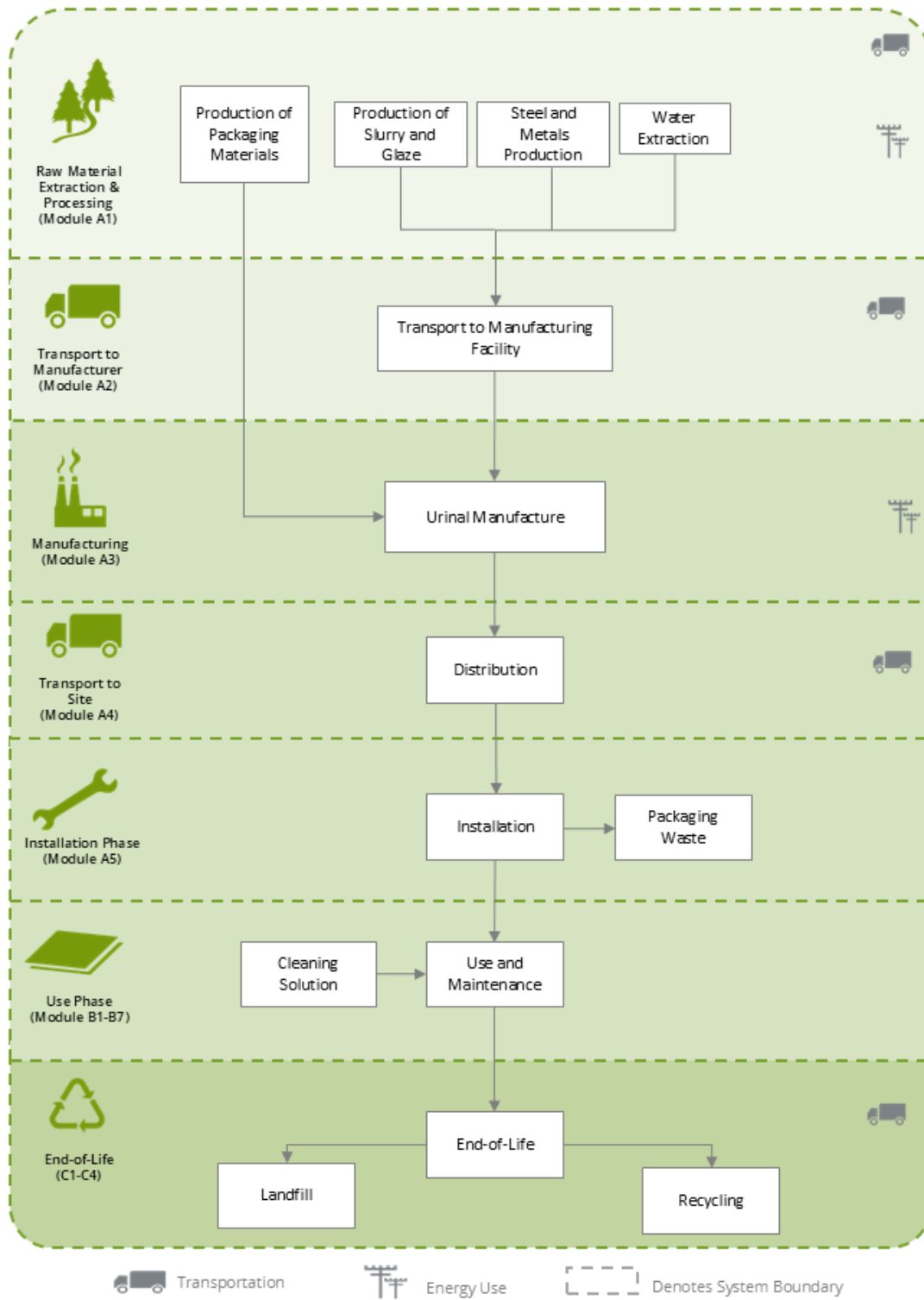


Figure 1. Flow diagram for the Sloan Designer Urinals.

2.3 Application

Sloan Designer Urinals are installed in restrooms for commercial buildings, airports, stadiums, and the healthcare and hospitality sectors.

2.4 Declaration of Methodological Framework

The scope of the EPD is cradle-to-grave, including raw material extraction and processing; raw material transportation; product manufacture, including packaging; product distribution; installation; use; and end-of-life.

Manufacturing resource use was allocated to the products based on mass. Impacts from transportation were allocated based on the mass of material and distance transported.

Consistent with the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. No known flows were deliberately excluded from this EPD.

2.5 Technical Requirements

Table 2. *Sloan Designer Urinal (Top Spud) Technical Requirements.*

Property	Unit	Value
Flush Volume	gpf	0.125-1.0
Length	inches	14.125
Width	inches	12.625
Height	inches	23.125

Table 3. *Sloan Designer Urinal (Bottom Spud) Technical Requirements.*

Property	Unit	Value
Flush Volume	gpf	0.125-1.0
Length	inches	14.125
Width	inches	12.625
Height	inches	23.125

This LCA follows the attributional LCA approach.

2.6 Market Placement/Application Rules

Technical specifications and product performance results for the Designer Urinal products can be found on the manufacturer's website sloan.com.

The products declared in this document comply with the following codes or regulations:

- ANSI A117.1 – Accessible and Usable Buildings and Facilities

2.7 Properties of Declared Product as Delivered

Sloan urinals are delivered by truck to the customer. Total nominal weight of product with packaging delivered is 19.3 kg for the Top Spud urinal and 19.1 kg for the Bottom Spud urinal. The nominal dimensions of the representative product are: 14½" H x 12¾" W x 23¾" D (360 x 321 x 585mm).

2.8 Material Composition

The main product materials for the average product are presented in Table 4. Product materials were reviewed for the presence of any toxic or hazardous chemicals. Based on a review of the product components provided by the manufacturer, no regulated chemicals were identified in the product or product components.

Table 4. *Sloan Designer Urinal Material Components.*

Material	Designer Urinal (Top Spud)		Designer Urinal (Bottom Spud)	
	Mass (kg)	Percentage of Total Mass	Mass (kg)	Percentage of Total Mass
Product – Fixture Materials				
Slurry	16.2	87%	16.2	87%
Glaze Water	1.80	9.6%	1.80	9.6%
SloanTec Surface Treatment	4.00x10 ⁻⁵	0.00%	4.00x10 ⁻⁵	0.00%
Total Product – Fixture Materials	18.0	100.0%	18.0	100.0%
Product – Hardware				
Copper Connection	0.492	67%	0.492	67%
Stainless Steel Screw	0.0510	7%	0.0510	7%
Galvanized Iron Bracket	0.155	21%	0.155	21%
Stainless Steel Strainer	0.0350	5%	0.0350	5%
Total Product - Hardware	0.733	100.0%	0.733	100.0%

No substances required to be reported as hazardous are associated with the production of this product.

2.9 Manufacturing

Sloan Designer Urinals are manufactured in Zhangzhou, China. The manufacturer provided primary data for their annual production, resource use and electricity consumption and waste generation at the facility. Electricity consumption is modeled using Ecoinvent datasets for the regional electricity grid resource mix.

2.10 Transportation

Transportation for the LCA model is based on PCR guidance for transport distances to the facility. Per the PCR, 2000 km by road is to be assumed for all raw materials transported to the facility.

Transportation data for second-tier suppliers (material supplier to component manufacturer) are based on data embedded in the representative LCI datasets. Road transport is assumed to be by diesel truck.

Additional PCR guidance was followed to model sale and distribution of Sloan Designer Urinals to various locations in the United States. Transportation from distribution centers to installation sites in the United States are assumed to be 800 km by truck, consistent with the PCR requirements. The transportation of the Designer Urinals from the China facility to Riverside is included in the distribution module (A4).

2.11 Installation

Installation of the urinals is completed using manual labor and does not require additional ancillary materials. Waste is generated from the disposal of packaging material at the installation site.

2.12 Packaging

Table 5. *Sloan Designer Urinal Packaging Components.*

Material	Designer Urinal (Top Spud)		Designer Urinal (Bottom Spud)	
	Mass (kg)	Percentage of Total Mass	Mass (kg)	Percentage of Total Mass
Carton	0.567	100%	0.397	100%
Total	0.567	100%	0.397	100%

2.13 Use Conditions

It is important to note that water use impacts during product use are assigned to the device that controls water flow to avoid double counting (e.g., flushometer), which is outside the scope of this Environmental Product Declaration. Per PCR requirements, it is assumed washdown urinals require daily cleaning with 50 mL of 1% sodium lauryl sulfate solution.

2.14 Product Reference Service Life and Building Estimated Service Life

The PCR establishes a Reference Service Life for Designer Urinals of 30 years. The PCR also establishes an Estimated Service Life of the building to be 75 years, for modeling the use phase to fulfill the required performance and functionality over the construction works.

2.15 Re-Use Phase

It is assumed that no materials or Designer Urinals are recovered and processed for re-use at end-of-life.

2.16 Disposal

It is assumed that Designer Urinals at end-of-life are disposed of in a landfill. Transportation of Designer Urinals assumes a 100-kilometer distance to disposal as specified in the PCR.

2.17 Further Information

Further information on the product can be found on the manufacturers' website at sloan.com.

3. LCA Calculation Rules

3.1 Functional Unit

The functional unit used in the study is one commercial urinal in an average commercial environment with a Reference Service Life of 30 years in a building with an Estimated Service Life of 75 years.

3.2 System Boundary

The scope of the EPD is cradle-to-grave, including raw material extraction and processing; raw material transportation; product manufacture, including packaging; product distribution; installation; use; and end-of-life. The benefits and loads beyond the system boundary for reuse, recovery, and recycling potential (module D), are not included in this study. The life cycle phases included in the EPD scope are described in Table 6.

Table 6. *Sloan Designer Urinal System Boundaries.*

Product			Construction Process		Use							End-of-life				Benefits and loads beyond the system boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material extraction and processing	Transport to manufacturer	Manufacturing	Transport	Construction - installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery and/or recycling potential
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND

X = Included in system boundary

MND = Module not declared

3.3 Product Specific Calculations for Use Phase (Modules B1-B7)

Sloan Designer Urinals are assumed to require daily cleaning with a 50 ml of 1% sodium lauryl sulfate solution.

3.4 Estimates and Assumptions

- The Sloan facility is located in Zhangzhou, China. An Ecoinvent inventory dataset was chosen to reflect the energy mix for the Sloan facility to estimate resource use and emissions from electricity use at the manufacturing facility.
- Based on information provided by the client, an estimated portion of water and material losses is assumed for both the slurry and glaze water.
- An additional surface treatment (SloanTec Glaze) is applied to the finished Designer Urinals in Riverside, California. Products are distributed from the Riverside facility throughout North America using PCR guidance.
- Impacts from the transport of the urinals from China to Riverside are considered in the A4 module.
- A portion of the recovered slurry material and associated water is assumed to be reused in production of the urinals, in accordance with client specifications.

- Per the PCR, no energy or water use is modeled for the relevant modules (B6 and B7); therefore, these flows are assumed to be zero.
- Electricity and resource use at the production facility were allocated to the products based on product mass utilizing annualized production data for January 2024 through December 2024 provided by the manufacturer.
- A portion of the water reported in the facility's primary data is modeled as an input to raw material preparation. The total water usage provided by the facility is assumed to encompass all water consumed as a raw material, water used for flushing during product testing, and any additional operational water demands within the facility.
- Plaster use for the mold to cast the Designer Urinal was not available and is based on prior SCS LCA studies for similar sanitary ceramic products.
- No additional materials, energy use, or installation-related waste beyond what is specified in the PCR are included.
- No maintenance activities are assumed beyond routine cleaning, which is modeled in accordance with the requirements specified in the PCR.
- Modeling of recycled materials follows the recycled content method (also known as 100-0 method or cut-off method) whereby only the burdens of reprocessing the waste material are allocated to the system from the use of the recycled material.

3.5 Cut-off Rules

According to the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results.

3.6 Data Sources

Primary data were provided by Sloan for the Zhangzhou, China facility. The principal source of secondary LCI data is the Ecoinvent 3.12 database.

Table 7. LCI datasets and associated databases used to model the Sloan Designer Urinals.

Component	Dataset	Data Source	Publication Date
Product			
Slurry			
Clay	market for clay clay Cutoff, U - RoW	EI v3.12	2025
Feldspar	market for feldspar feldspar Cutoff, U - GLO	EI v3.12	2025
Kaolinite	market for kaolin kaolin Cutoff, U - GLO	EI v3.12	2025
Pyrophyllite	market for kaolin kaolin Cutoff, U - GLO	EI v3.12	2025
Copper Connection			
Copper	market for copper, cathode copper, cathode Cutoff, U - GLO	EI v3.12	2025
Sheet	market for sheet rolling, copper sheet rolling, copper Cutoff, U - GLO	EI v3.12	2025
Glaze			
Glaze	market for zircon zircon Cutoff, U - GLO	EI v3.12	2025
Water	market for tap water tap water Cutoff, U - RoW	EI v3.12	2025
Iron Bracket			
Steel	market for steel, unalloyed steel, unalloyed Cutoff, U - GLO	EI v3.12	2025
Sheet Rolling	market for sheet rolling, steel sheet rolling, steel Cutoff, U - GLO	EI v3.12	2025
Stainless Steel Strainer			
Stainless Steel	market for steel, chromium steel 18/8 steel, chromium steel 18/8 Cutoff, U - GLO	EI v3.12	2025
Sheet Rolling	market for sheet rolling, chromium steel sheet rolling, chromium steel Cutoff, U - GLO	EI v3.12	2025
Metal Working	market for metal working, average for steel product manufacturing metal working, average for steel product manufacturing Cutoff, U - GLO	EI v3.12	2025
Steel Screw			
Steel	market for steel, unalloyed steel, unalloyed Cutoff, U - GLO	EI v3.12	2025
Wire Drawing	market for wire drawing, steel wire drawing, steel Cutoff, U - GLO	EI v3.12	2025
SloanTec Surface Treatment			
Distillate (Petroleum)	market for white spirit white spirit Cutoff, U - GLO	EI v3.12	2025
Sodium Tetrachloride	market for silicon tetrachloride silicon tetrachloride Cutoff, U - RoW	EI v3.12	2025
Others	market for chemical, organic, unspecified chemical, organic, unspecified Cutoff, U - GLO	EI v3.12	2025
Package			
Cardboard	market for corrugated board box corrugated board box Cutoff, U - RoW	EI v3.12	2025
Transport			
Road transport	market for transport, freight, lorry, 16-32 metric ton, diesel, EURO 4 transport, freight, lorry, 16-32 metric ton, diesel, EURO 4 Cutoff, U - RoW	EI v3.12	2025
Ship transport	market for transport, freight, sea, container ship, heavy fuel oil transport, freight, sea, container ship, heavy fuel oil Cutoff, U - GLO	EI v3.12	2025
Manufacture			
Grid electricity	market for electricity, medium voltage electricity, medium voltage Cutoff, U - CN-E-Grid	EI v3.12	2025
Natural Gas	market for heat, district or industrial, natural gas heat, district or industrial, natural gas Cutoff, U - RoW	EI v3.12	2025
Water	market for tap water tap water Cutoff, U - RoW	EI v3.12	2025
Plaster	market for base plaster base plaster Cutoff, U - GLO	EI v3.12	2025
Use			
Sodium Lauryl Sulfate	market for cleaning consumables, without water, in 13.6% solution state cleaning consumables, without water, in 13.6% solution state Cutoff, U - GLO	EI v3.12	2025
Waste			
Landfill	market for inert waste, for final disposal inert waste, for final disposal Cutoff, U - RoW	EI v3.12	2025
Incineration	treatment of municipal solid waste, municipal incineration municipal solid waste Cutoff, U - RoW	EI v3.12	2025

3.7 Data Quality

Table 8. *Data Quality Assessment.*

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 5 years old. All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on annualized production for 2024 for the China facility.
Geographical Coverage: Geographical area from which data for unit processes is collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data for the China grid. Surrogate data used in the assessment are representative of global or European operations. Data representative of European operations are considered sufficiently similar to actual processes.
Technology Coverage: Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the Designer Urinals. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent v3.12 data where available.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
Sources of the Data: Description of all primary and secondary data sources	Data representing energy use at Sloan's facility represent an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. Secondary datasets from Ecoinvent are used, as appropriate.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the product and packaging is low. Actual supplier data for upstream operations was not available for all suppliers and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data (<10 years) but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments or tipping points.

3.8 Period under review

The period of review is based on a 12-month period from January 2024 through December 2024.

3.9 Allocation

Manufacturing resource use was allocated to the products based on mass. Impacts from transportation were allocated based on the mass of material and distance transported. The Designer Urinal includes some recycled content, which are allocated using the recycled content allocation method, also known as the 100-0 cut off method. Impacts from transportation were allocated based on the mass of material and distance transported.

No burdens are allocated across the system boundary with secondary material, secondary fuel or recovered energy flows arising from waste

3.10 Comparability

The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.

4. LCA: TECHNICAL INFORMATION AND SCENARIOS

4.1 Transport to the Building Site (A4)

Table 9. *Sloan Designer Urinals Transportation Summary.*

Name	Unit	Designer Urinal (Top Spud)		Designer Urinal (Bottom Spud)	
Vehicle Type	-	Freight Truck	Ocean Transit	Freight Truck	Ocean Transit
Fuel Type	-	Diesel	Heavy Fuel Oil	Diesel	Heavy Fuel Oil
Transport Distance					
Facility to port	km	56.4	-	56.4	-
Port to Port	km	-	11,900	-	11,900
Port to Distribution Center	km	115	-	115	-
Distribution to Site	km	800 (1,600 with round trip)	-	800 (1,600 with round trip)	-
Capacity Utilization	%	50	70	50	70
Gross mass of products transported including packaging ¹	kg	19.3	19.3	19.1	19.1

¹ including packaging

4.2 Installation into the Building (A5)

Table 10. *Sloan Designer Urinals Installation Summary.*

Name	Unit	Designer Urinal (Top Spud)	Designer Urinal (Bottom Spud)
Ancillary materials	kg	0.00	0.00
Net freshwater consumption specified by water source and fate	m ³	0.00	0.00
Other resources	kg	0.00	0.00
Electricity consumption	kwh	0.00	0.00
Other energy carriers	MJ	0.00	0.00
Product loss per functional unit	kg	0.00	0.00
Waste materials at the construction site before waste processing, generated by product installation	kg	0.00	0.00
Output materials resulting from on-site waste processing	kg	0.00	0.00
Mass of packaging waste specified by type	kg	0.567	0.397
Recycle	kg	0.387	0.271
Landfill	kg	0.145	0.102

	Incineration	kg	0.0352	0.0246
Biogenic carbon contained in packaging	kg CO ₂ eq	1.04	0.728	
Direct emissions to ambient air, soil, and water	kg	0.00	0.00	
VOC emissions	µg/m ³	0.00	0.00	

4.3 Use

Use Stage (B1)

No impacts are required with the use of the product over the reference service life.

Maintenance (B2)

The maintenance stage includes cleaning. The cleaning type, amount, and frequency assumptions are prescribed by the PCR and include daily cleaning with 50 mL of 1% sodium lauryl sulfate solution.

Table 11. Sloan Designer Urinal Maintenance Summary.

Maintenance	Unit	Designer Urinal (Top Spud)	Designer Urinal (Bottom Spud)
Description of process	-	Daily cleaning with 50 ml 1% sodium lauryl sulfate solution	
Maintenance cycle	Cycles/RSL	7,800	7,800
Maintenance cycle	Cycles/ESL	19,500	19,500
Net freshwater consumption	kg/RSL	386	386
Ancillary materials		0.00	0.00
Sodium lauryl sulfate solution	kg/RSL	3.9	3.9
Other resources	kg	0.00	0.00
Energy Input	kg	0.00	0.00
Other energy carriers	kg	0.00	0.00
Power output of equipment	kWh	0.00	0.00
Waste materials from maintenance	kg	0.00	0.00
Direct emissions to ambient air, soil, and water	kg	0.00	0.00
Further assumptions for scenario development	-	-	-
Maintenance cycle	Cycles/RSL	7,800	7,800

Repair (B3)

No repair is required with the use of the product over the reference service lifetime.

Replacement (B4)

Table 12. Sloan Designer Urinal Replacement Summary.

Replacement	Unit	Designer Urinal (Top Spud)	Designer Urinal (Bottom Spud)
Reference Service Life	Years	30	30
Replacement cycle (ESL/RSL)-1	-	1.5	1.5
Energy input	kWh	0.00	0.00
Net freshwater consumption	m ³	0.00	0.00
Ancillary materials	kg	0.00	0.00
Replacement of materials (per RSL)	kg	0.00	0.00
Replacement of materials (per ESL)	kg	0.00	0.00
Direct emissions to ambient air, soil, and water	kg	0.00	0.00
Further assumptions for scenario development	-	-	-

Refurbishment (B5)

No refurbishment is required with the use of the product over the reference service lifetime.

Operational Energy and Water Use (B6 – B7)

There is no operational energy or water use associated with the use of the product over the reference service lifetime.

4.4 End-of-Life

Table 13. *Sloan Designer Urinal End-of-Life Summary.*

End-of-life		Unit	Designer Urinal (Top Spud)	Designer Urinal (Bottom Spud)
Assumptions for scenario development			Manual deconstruction, followed by 100 km truck transport to final disposal in landfill	
Collection Process	Collected Separately	kg	0.00	0.00
	Collected with mixed construction waste	kg	18.7	18.7
Recovery	Reuse	kg	0.00	0.00
	Recycling	kg	0.00	0.00
	Landfill	kg	18.7	18.7
	Incineration	kg	0.00	0.00
Disposal	Product of material for final deposition	kg	18.7	18.7
Removals of biogenic carbon (excluding packaging)		-	0.00	0.00



5. LCA: Results

Results of the Life Cycle Assessment are presented below. It is noted that LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks. The following environmental impact category indicators are reported using characterization factors using the TRACI 2.2 impact assessment method.

Table 14. *Mandatory Environmental Impact Assessment Categories.*

TRACI 2.2 Impact Category	Unit
GWP: Global Warming Potential	kg CO ₂ eq.
ODP: Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.
AP: Acidification Potential of soil and water	kg SO ₂ eq.
EP: Eutrophication Potential: Freshwater	kg P eq.
EP: Eutrophication Potential: Marine	kg N eq.
SFP: Smog Formation Potential	kg O ₃ eq.

These impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes. The following inventory parameters, specified by the PCR, are also reported.

Table 15. *Additional Transparency Categories.*

Resources	Unit	Waste and Outflows	Unit
RPRE: Renewable primary resources used as energy carrier (fuel)	MJ, LHV	HWD: Hazardous waste disposed	kg
RPR_M: Renewable primary resources with energy content used as material	MJ, LHV	NHWD: Non-hazardous waste disposed	kg
NRPRE: Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	RWD: Radioactive waste, conditioned, to final repository	kg
NRPR_M: Non-renewable primary resources with energy content used as material	MJ, LHV	CRU: Components for re-use	kg
SM: Secondary materials	kg	MR: Materials for recycling	kg
RSF: Renewable secondary fuels	MJ, LHV	MER: Materials for energy recovery	kg
NRSF: Non-renewable secondary fuels	MJ, LHV	EE: Recovered energy exported from the product system	kg
RE: Recovered energy	MJ, LHV	EE: Recovered energy exported from the product system	MJ, LHV
FW: Use of new freshwater resources	m ³	ADPF: Abiotic Depletion Potential, Fossil Fuels	MJ, LHV

All LCA results are stated to three significant figures in agreement with the PCR for this product and therefore the sum of the total values may not exactly equal 100%. Modules with zero (0) impacts: B1, B3, B5, B6, B7, C1, and C3 are omitted from the results tables to conserve space.

Table 16. TRACI 2.2 Impact indicator results for Sloan Designer Urinal (Top Spud).

Module	GWP	ODP	AP	EP: freshwater	EP: marine	Smog
	kg CO ₂ eq	kg CFC-11 eq	kg SO ₂ eq	kg P eq	kg N eq	kg O ₃ eq
TRACI 2.2						
A1	6.79	8.90x10 ⁻⁸	0.239	2.31x10 ⁻²	4.91x10 ⁻²	1.08
A2	7.22	1.12x10 ⁻⁷	2.81x10 ⁻²	7.50x10 ⁻⁴	2.88x10 ⁻²	0.704
A3	2.23	3.25x10 ⁻⁸	7.74x10 ⁻³	5.00x10 ⁻⁴	6.52x10 ⁻³	0.147
A1-A3 Total:	16.2	2.34x10⁻⁷	0.275	2.43x10⁻²	8.44x10⁻²	1.93
A4	4.06	6.30x10 ⁻⁸	2.04x10 ⁻²	4.00x10 ⁻⁴	2.19x10 ⁻²	0.533
A5	3.21x10 ⁻²	2.49x10 ⁻¹⁰	6.65x10 ⁻⁵	2.95x10 ⁻⁶	7.08x10 ⁻⁵	1.72x10 ⁻³
B2	34.9	2.06x10 ⁻⁶	0.183	1.05x10 ⁻²	0.106	2.03
B4	31.6	4.65x10 ⁻⁷	0.448	3.72x10 ⁻²	0.164	3.82
C2	0.369	5.74x10 ⁻⁹	1.44x10 ⁻³	3.84x10 ⁻⁵	1.48x10 ⁻³	3.60x10 ⁻²
C4	0.336	7.44x10 ⁻⁹	1.68x10 ⁻³	3.30x10 ⁻⁵	1.82x10 ⁻³	4.44x10 ⁻²

Table 17. TRACI 2.2 Impact indicator results for Sloan Designer Urinal (Bottom Spud).

Module	GWP	ODP	AP	EP: freshwater	EP: marine	Smog
	kg CO ₂ eq	kg CFC-11 eq	kg SO ₂ eq	kg P eq	kg N eq	kg O ₃ eq
TRACI 2.2						
A1	6.79	8.90x10 ⁻⁸	0.239	2.31x10 ⁻²	4.91x10 ⁻²	1.08
A2	7.22	1.12x10 ⁻⁷	2.81x10 ⁻²	7.50x10 ⁻⁴	2.88x10 ⁻²	0.704
A3	2.33	3.12x10 ⁻⁸	8.03x10 ⁻³	4.40x10 ⁻⁴	6.98x10 ⁻³	0.162
A1-A3 Total:	16.3	2.32x10⁻⁷	0.275	2.43x10⁻²	8.49x10⁻²	1.95
A4	4.03	6.25x10 ⁻⁸	2.02x10 ⁻²	4.00x10 ⁻⁴	2.17x10 ⁻²	0.528
A5	2.25x10 ⁻²	1.74x10 ⁻¹⁰	4.66x10 ⁻⁵	2.06x10 ⁻⁶	4.96x10 ⁻⁵	1.20x10 ⁻³
B2	34.9	2.06x10 ⁻⁶	0.183	1.05x10 ⁻²	0.106	2.03
B4	31.6	4.62x10 ⁻⁷	0.448	3.71x10 ⁻²	0.165	3.83
C2	0.369	5.74x10 ⁻⁹	1.44x10 ⁻³	3.84x10 ⁻⁵	1.48x10 ⁻³	3.60x10 ⁻²
C4	0.336	7.44x10 ⁻⁹	1.68x10 ⁻³	3.30x10 ⁻⁵	1.82x10 ⁻³	4.44x10 ⁻²

Table 18. *Additional Resource Use indicators for Sloan Designer Urinal (Top Spud).*

Module	RPR _E	RPR _M	NRPR _E	NRPR _M	SM	RSF	NRSF	RE	FW	ADPF
	MJ	MJ	MJ	MJ	kg	MJ	MJ	MJ	m ³	MJ
Resource										
A1	16.0	0.00	84.5	0.00	0.709	0.00	0.00	0.00	0.190	75.8
A2	1.42	0.00	101	0.00	0.00	0.00	0.00	0.00	1.39x10 ⁻²	99.8
A3	8.96	10.8	21.0	0.00	0.00	0.00	0.00	0.00	1.29x10 ⁻²	19.9
A1-A3 Total:	26.4	10.8	207	0.00	0.709	0.00	0.00	0.00	0.395	196
A4	0.767	0.00	56.2	0.00	0.00	0.00	0.00	0.00	7.42x10 ⁻³	55.5
A5	3.17x10 ⁻³	0.00	0.214	0.00	0.00	0.00	0.00	0.00	8.64x10 ⁻⁵	0.211
B2	181	0.00	533	0.00	0.00	0.00	0.00	0.00	1.86	500
B4	41.0	16.2	411	0.00	1.06	0.00	0.00	0.00	0.343	393
C2	7.27x10 ⁻²	0.00	5.17	0.00	0.00	0.00	0.00	0.00	7.10x10 ⁻⁴	5.10
C4	7.46x10 ⁻²	0.00	5.98	0.00	0.00	0.00	0.00	0.00	3.45x10 ⁻³	0.00

Table 19. *Additional Waste indicators for Sloan Designer Urinal (Top Spud).*

Module	HWD	NHWD	HLRW	ILLRW	CRU	MR	MER
	kg	kg	kg	kg	kg	kg	kg
Wastes							
A1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A3	0.00	0.00	0.00	0.00	0.00	0.270	0.00
A1-A3 Total:	0.00	0.00	0.00	0.00	0.00	0.270	0.00
A4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A5	0.00	3.52x10 ⁻²	0.00	0.00	0.00	0.00	0.00
B2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4	0.00	28.2	0.00	0.00	0.00	0.405	0.00
C2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.00	18.7	0.00	0.00	0.00	0.00	0.00

Table 20. Additional Resource Use indicators for Sloan Designer Urinal (Bottom Spud).

Module	RPR _E	RPR _M	NRPR _E	NRPR _M	SM	RSF	NRSF	RE	FW	ADPF
	MJ	MJ	MJ	MJ	kg	MJ	MJ	MJ	m ³	MJ
Resource										
A1	16.0	0.00	84.5	0.00	0.709	0.00	0.00	0.00	0.190	75.8
A2	1.42	0.00	101	0.00	0.00	0.00	0.00	0.00	1.39x10 ⁻²	99.8
A3	6.65	7.54	22.8	0.00	0.00	0.00	0.00	0.00	1.16x10 ⁻²	21.8
A1-A3 Total:	24.1	7.54	208	0.00	0.709	0.00	0.00	0.00	0.395	197
A4	0.760	0.00	55.7	0.00	0.00	0.00	0.00	0.00	7.36x10 ⁻³	55.0
A5	2.21x10 ⁻³	0.00	0.150	0.00	0.00	0.00	0.00	0.00	6.05x10 ⁻⁵	0.148
B2	181	0.00	533	0.00	0.00	0.00	0.00	0.00	1.86	500
B4	37.5	11.3	413	0.00	1.06	0.00	0.00	0.00	0.340	395
C2	7.27x10 ⁻²	0.00	5.17	0.00	0.00	0.00	0.00	0.00	7.10x10 ⁻⁴	5.10
C4	7.46x10 ⁻²	0.00	5.98	0.00	0.00	0.00	0.00	0.00	3.45x10 ⁻³	0.00

Table 21. Additional Resource Use and Waste indicators for Sloan Designer Urinal (Bottom Spud).

Module	HWD	NHWD	HLRW	ILLRW	CRU	MR	MER
	kg	kg	kg	kg	kg	kg	kg
Wastes							
A1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A3	0.00	0.00	0.00	0.00	0.00	0.270	0.00
A1-A3 Total:	0.00	0.00	0.00	0.00	0.00	0.270	0.00
A4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
A5	0.00	0.271	0.00	0.00	0.00	0.00	0.00
B2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
B4	0.00	28.5	0.00	0.00	0.00	0.405	0.00
C2	0.00	0.00	0.00	0.00	0.00	0.00	0.00
C4	0.00	18.7	0.00	0.00	0.00	0.00	0.00

6. LCA: INTERPRETATION

The interpretation phase conforms to ISO 14044. The interpretation included the use of evaluation and sensitivity checks to steer the iterative process during the assessment, and a final evaluation including completeness, sensitivity, and consistency checks, at the end of the study.

The contributions to total impact indicator results are dominated by the use phase impacts from the maintenance (B2) and replacement (B4) modules. When examining the results without the use phase impacts, the results are largely impacted by the raw material module (A1) and transportation module (A2).

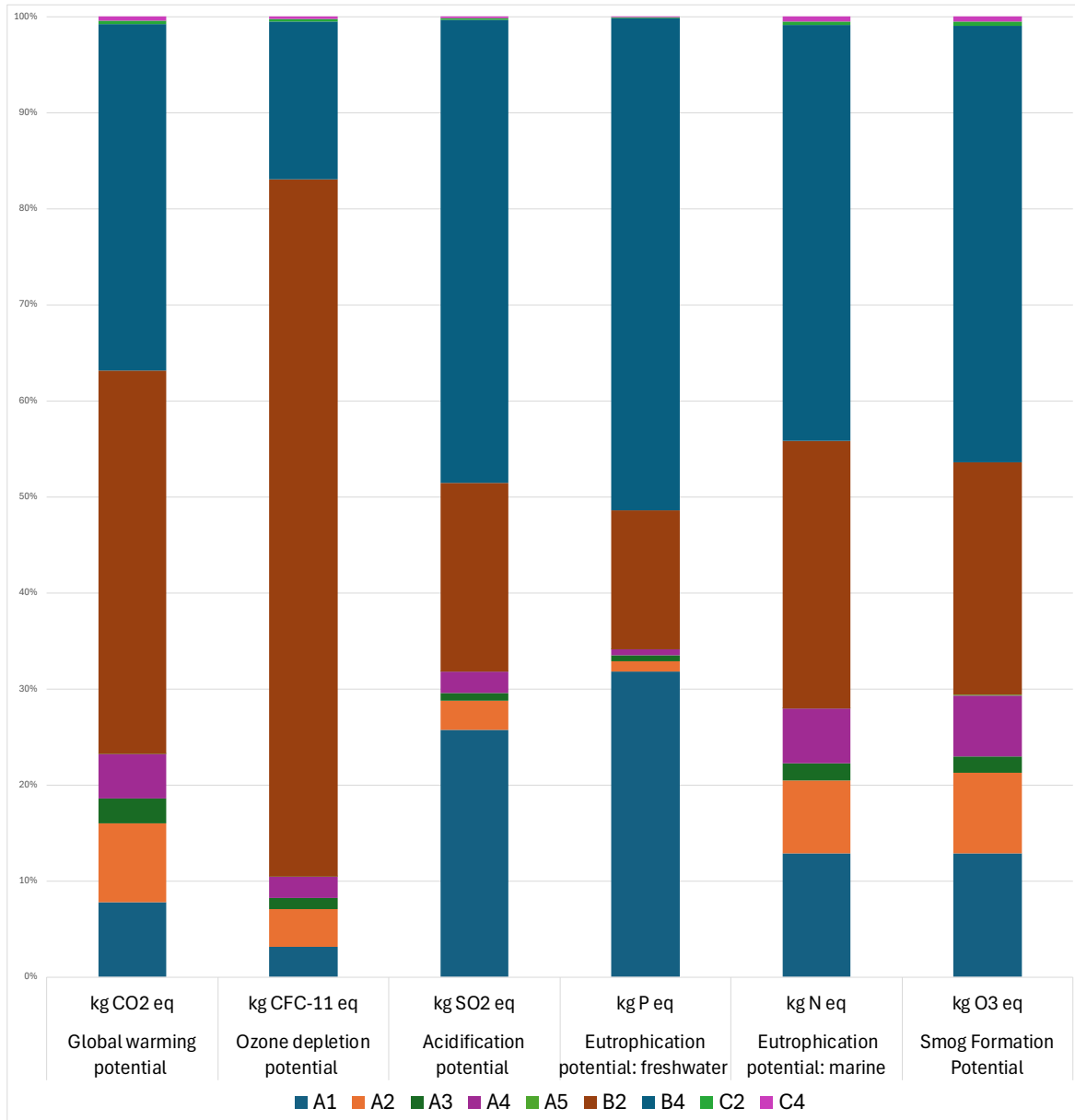


Figure 2. Contribution analysis for the Sloan Designer Urinal (Top Spud) showing TRACI 2.2 impact method results.

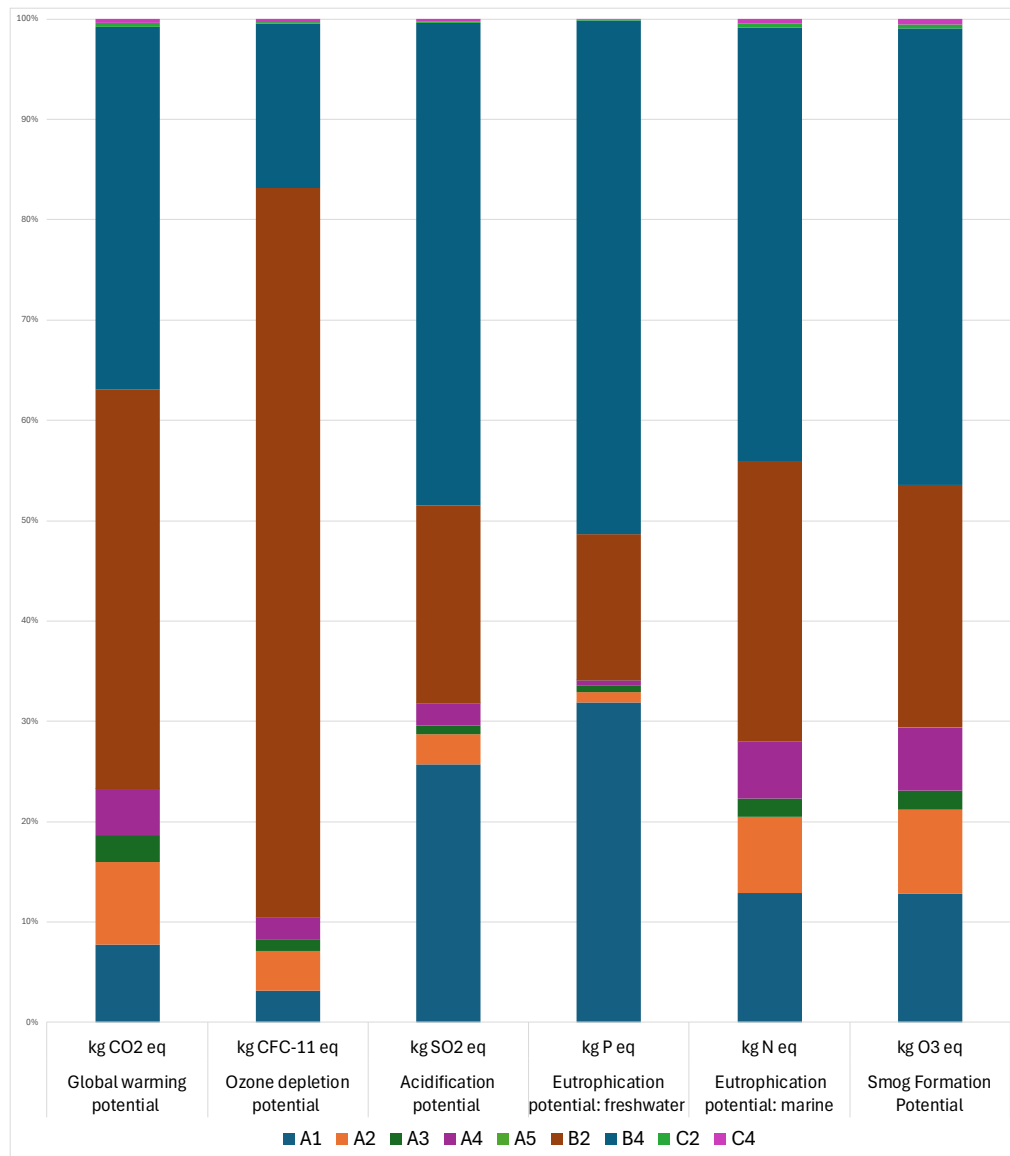


Figure 3. Contribution analysis for the Sloan Designer Urinal (Bottom Spud) showing TRACI 2.2 impact method results.

7. ADDITIONAL ENVIRONMENTAL INFORMATION

Sloan is a proud member of the United States Green Building Council (USGBC) and through the use of Leadership in Energy and Environmental Design (LEED) Green Building Rating System, Sloan recognizes and validates the importance of best-on-class building strategies and practices of high performing green buildings. Sloan's Designer Urinals within this EPD can be used to help achieve USGBC LEED v5 points and comply with building codes.

No environmental or health impacts are expected due to extraordinary effects including fire and/or water damage and product destruction.

For more information on Sloan's certifications and environmental initiatives please visit the website at sloan.com.

8. REFERENCES

- ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017. May 2019
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- SCS Type III Environmental Declaration Program: Program Operator Manual. V12.0 December 2023. SCS Global Services.
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