Declaration Owner
Sloan Valve Company
10500 Seymour Avenue
Franklin Park, IL 60131
customer.service@sloan.com | 800.982.5839
https://www.sloan.com

Product
Sloan Washdown Urinals

Functional Unit
1 packaged, installed unit with a Reference Service Life of 20 years in a building with an Estimated Service Life of 75 years

EPD Number and Period of Validity
SCS-EPD-08753
EPD Valid March 10, 2023 through March 9, 2028

Product Category Rule
UL. PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2. December 2018.
UL PCR Guidance for Building-Related Products and Services Part B: Sanitary Ceramic EPD Requirements. Version 2.1. June 2018.

Program Operator
SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608
+1.510.452.8000 | www.SCSglobalServices.com

Declaration owner:	Sloan Valve Company
Address:	10500 Seymour Avenue, Franklin Park, IL 60131
Declaration Number:	SCS-EPD-08753
Declaration Validity Period:	EPD Valid March 10, 2023 through March 9, 2028
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Beth Cassese, SCS Global Services
LCA Software and LCI database:	OpenLCA 1.10.3 software and the Ecoinvent v3.8 database
Product's Intended Application:	For use with plumbing systems to deliver and drain water.
Product RSL:	20 Years (ESL 75 Years)
Markets of Applicability:	North America
EPD Type:	Product-Specific
EPD Scope:	Cradle-to-Grave
LCIA Method and Version:	CML-IA Baseline and TRACI 2.1
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒ external
LCA Reviewer:	Thomas Gloria, Ph.D., Industrial Ecology Consultants
Product Category Rule:	UL PCR Guidance for Building-Related Products and Services Part B: Sanitary Ceramics EPD Requirements. Version 2.1. June 2018.
PCR Review conducted by:	Tom Gloria, Christopher Marozzi, Kim Lewis
Independent verification of the declaration and data, according to ISO 14025 and the PCR	☐ internal ☒ external
EPD Verifier:	Thomas Gloria, Ph.D., Industrial Ecology Consultants
Declaration Contents:	

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.

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 washdown urinals are manufactured at the William H. Marsh facility in Hangzhou, China.

2. PRODUCT

2.1 Product Description

Sloan washdown urinal products belong to the Commercial Plumbing Fixtures specification code, CSI code 22 42 13 and the UNSPSC code 30180000.

Sanitary ceramic plumbing fixtures are exchangeable devices that can be connected to a plumbing system to deliver and drain water, are designed to help conserve water and are installed in restrooms for commercial buildings, airports, stadiums, and the healthcare and hospitality sectors. The product system under study does not include a flushometer, as these are included in a separate Product Category Rule (PCR).

Product Features:

- Dimensions can vary within the tolerances established in the governing ASME A112.19/CSA B45.1 Standard
- IAPMO certified listed by EPA
- Meets ADA guidelines and ANSI A117.1 requirements
- White vitreous china
- Washdown design
- Designed to maximize and complement Sloan flushometers
- Universal high efficiency works with 0.125 to 0.5 gpf/0.5 to 1.9 Lpf

2.2 Product Average

An average of the product line chosen as the representative product for this study. Results for each product model within the product line are grouped together by mass and presented in the Appendix.

Table 1. *Sloan Washdown Urinals Represented in this EPD.*

Model	Mass (kg)
SU7019	23
SU7009-STG	23
SU7009	23
SU1009-STG	24
SU1009	24
SU1019	26
SU1209-STG	31
SU1209	31
Average:	**25.6**

2.3 Flow Diagram

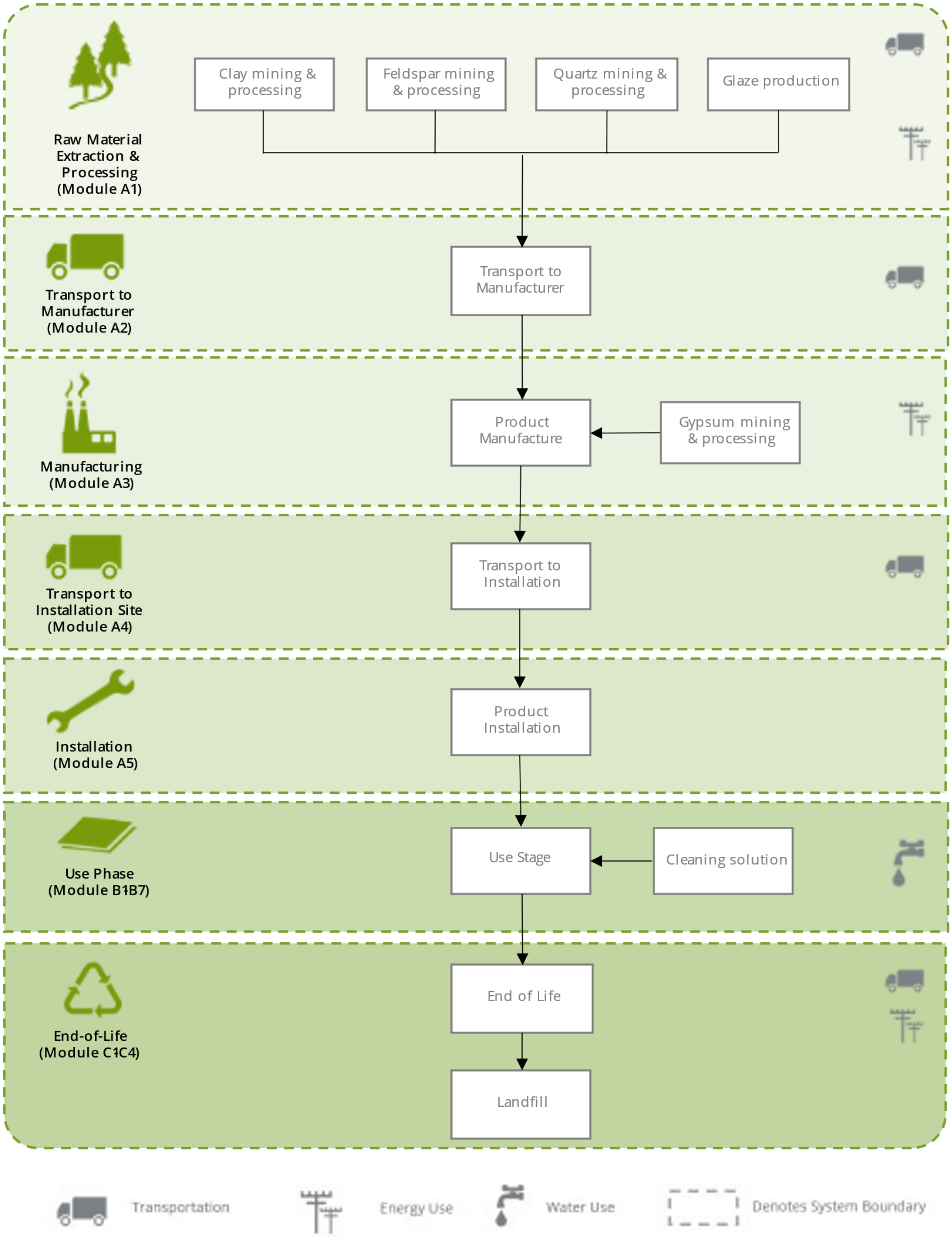


Figure 1. *Flow diagram for the Sloan Washdown Urinals.*

2.4 Application

Sloan washdown urinals are designed for use with plumbing systems to deliver and drain water. The washdown urinals are installed in commercial, industrial, and institutional markets worldwide.

2.5 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.

According to 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.

2.6 Technical Requirements

Table 2. *Sloan Washdown Urinal Technical Requirements.*

Property	Unit	Value
Width	mm	364
Length	mm	419
Height	mm	619
Minimum flow rate	GPM	18
Maximum static pressure	PSI	80
Minimum flowing pressure	PSI	25

2.7 Market Placement/Application Rules

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

- IAPMO certified to meet or exceed the ASME A112.19.2 standards – Ceramic Plumbing Fixtures
- ANSI A117.1 – Accessible and Usable Buildings and Facilities

2.8 Properties of Declared Product as Delivered

Sloan washdown urinals are delivered by truck to the installation site. The total nominal weight of product with packaging delivered is 30.4 kg. The nominal dimensions of the representative product are: **Height** 14.38" (619 mm), **Width** 14.35" (364 mm), **Length** 16.50" (419 mm).

2.9 Material Composition

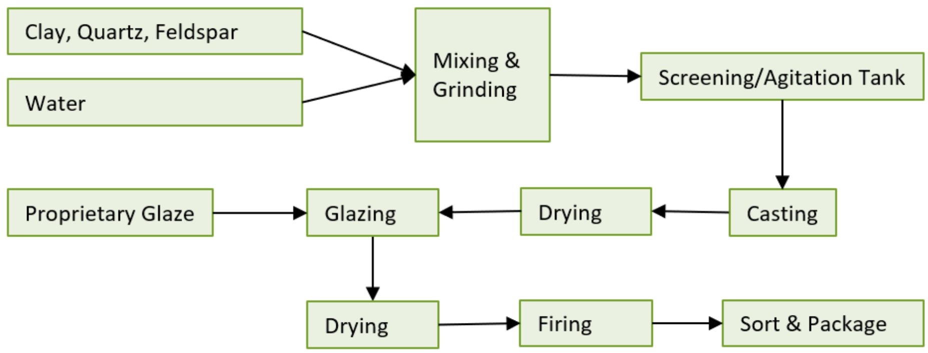
The main product materials for the average product are presented in Table 3. Product materials were reviewed for the presence of any toxic or hazardous chemicals. Based on a review of the product components provided by the manufacturer, no regulated chemicals were identified in the product or product components.

Table 3. *Sloan Washdown Urinal Material Components.*

Material	Mass (kg)	Percentage of Total Mass
Clay	11.4	44.4%
Quartz	8.54	33.3%
Feldspar	5.70	22.2%
Glaze	0.0003	0.001%
Total	**25.6**	**100%**

2.10 Manufacturing

Sloan urinals are manufactured in Hangzhou, China. Raw materials, including clay, quartz, and feldspar are mixed with water and ground thoroughly to form a uniform slip. The slip is screened and magnetically separated in an agitating tank. The ware are then cast in plaster molds and then dried before a glazing process. After glazing, the body is sent for drying and firing. The final products are then sorted and packaged for distribution.



2.11 Transportation

Transportation distance and mode from the manufacturing facility in China to the Sloan distribution center in Los Angeles, CA was provided by the manufacturer, as 10,570 km via ocean freighter. Transportation from the Los Angeles distribution center to sales locations were not available, so an average distance of 2725 km was assumed to represent locations across the United States. In addition, the Part B PCR requires 500 km of transport from the point of purchase to the building site.

2.12 Installation

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

2.13 Packaging

Table 4. *Sloan Washdown Urinal Packaging Components.*

Material	Mass (kg)	Percentage of Total Mass
Fluting paper	3.64	76.0%
Copper	0.421	9.78%
Rubber	0.055	1.15%
Steel	0.672	14.0%
Total	**4.79**	**100%**

2.14 Use Conditions

It is important to note that water use impacts are assigned to the device that controls water flow to avoid double counting (e.g., flushometer), which is outside the scope of the Environmental Product Declaration.

2.15 Product Reference Service Life and Building Estimated Service Life

The PCR establishes a Reference Service Life for urinals of 20 years. The PCR also establishes an Estimated Service Life of the building to be 75 years, for use in the use phase modelling to fulfill the required performance and functionality over the construction works.

2.16 Re-Use Phase

Reuse at end-of-life via collection and processing of washdown urinals is possible but not widely available. It is assumed that no materials are recovered and processed for these purposes.

2.17 Disposal

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

3. LCA Calculation Rules

3.1 Functional Unit

The functional unit used in the study is one (1) packaged, installed unit with a reference service life (RSL) of 20 years. The building estimated service life (ESL) is assumed to be 75-years.

Table 5. *Sloan Washdown Urinal Functional Unit Properties.*

Property	Unit	Value
Functional Unit	One (1) packaged, installed product	
RSL	Years	20
ESL	Years	75
Mass	kg	25.6
Conversion factor to 1 kg	kg	0.039
Flush rate	m^3/sec	N/A
Flow rate	m^3/sec	N/A

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.

Table 6. *Sloan Washdown 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 washdown urinals are assumed to require daily cleaning with a 50 ml of 10% HCl solution.

3.4 Estimates and Assumptions

- Specific data were not available on the quartz in the product recipe. A secondary dataset for silica sand was used from Ecoinvent database.
- Product transport from point of purchase to the building site is assumed to be 500 km as required by the Part B PCR.
- Product transport from the Sloan distribution center in Los Angeles, CA to point of purchase was assumed to be 2725 km, representing an average of several major cities across the United States.
- Installation of the products is assumed to be manual, requiring no additional materials or energy use.
- Transport of the packaging waste at installation is assumed to be 100 km.
- Transport of the product at end-of-life to waste processing and disposal is assumed to be 100 km.
- The maintenance of the products is assumed to include daily cleaning with a 50 ml of 10% HCl cleaning solution as specified in the Part B PCR.
- The products are assumed to require no replacement during the 20-year RSL, but in accordance with the Part A PCR and Part B PCR, requires replacement 2.8 times over the 75-year ESL.
- The use phase modules B3 (Repair), B5 (Refurbishment), B6 (Operational Energy Use), and B7 (Operational Water Use) are assumed to have no impacts, as there is no resource or energy use associated with these modules.
- The use phase modules B2 (Maintenance) and B4 (Replacement) are modelled for the building/construction works ESL of 75 years.
- For the product end-of-life, disposal of product is assumed to be in a landfill.

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 Hangzhou, China facility. The principal source of secondary LCI data is the Ecoinvent 3.8 database.

Table 7. *LCI datasets and associated databases used to model the Sloan Washdown Urinal products.*

Component	Dataset	Data Source	Publication Date
Product			
Clay	market for clay | clay | Cutoff, U	Ecoinvent 3.8	2021
Feldspar	market for feldspar | feldspar | Cutoff, U	Ecoinvent 3.8	2021
Proprietary glaze	market for chemical, inorganic | chemical, inorganic | Cutoff, U	Ecoinvent 3.8	2021
Quartz	market for silica sand | silica sand | Cutoff, U	Ecoinvent 3.8	2021
Package			
Copper	market for scrap copper | scrap copper | Cutoff, U	Ecoinvent 3.8	2021
	market for metal working, average for copper product manufacturing | metal working, average for copper product manufacturing | Cutoff, U	Ecoinvent 3.8	2021
Paper	market for waste packaging paper | waste packaging paper | Cutoff, U	Ecoinvent 3.8	2021
Rubber	market for waste rubber, unspecified | waste rubber, unspecified | Cutoff, U	Ecoinvent 3.8	2021
	market for injection moulding | injection moulding | Cutoff, U	Ecoinvent 3.8	2021
Steel	market for scrap steel | scrap steel | Cutoff, U	Ecoinvent 3.8	2021
	market for metal working, average for steel product manufacturing | metal working, average for steel product manufacturing | Cutoff, U	Ecoinvent 3.8	2021
Transport			
Truck	market for transport, freight, lorry 16-32 metric ton, EURO4 | transport, freight, lorry 16-32 metric ton, EURO4 | Cutoff, U	Ecoinvent 3.8	2021
Ship	market for transport, freight, sea, container ship | transport, freight, sea, container ship | Cutoff, U	Ecoinvent 3.8	2021
Manufacture			
Electricity	market for electricity, medium voltage | electricity, medium voltage | Cutoff, U	Ecoinvent 3.8	2021
Gypsum	market for gypsum, mineral | gypsum, mineral | Cutoff, U	Ecoinvent 3.8	2021
Natural Gas	market group for heat, central or small-scale, natural gas | heat, central or small-scale, natural gas | Cutoff, U	Ecoinvent 3.8	2021
Waste Gypsum	market for waste gypsum | waste gypsum | Cutoff, U	Ecoinvent 3.8	2021
Water	market for tap water | tap water | Cutoff, U	Ecoinvent 3.8	2021
Use			
Hydrochloric acid	market for hydrochloric acid, without water, in 30% solution state | hydrochloric acid, without water, in 30% solution state | Cutoff, U	Ecoinvent 3.8	2021
Waste			
Landfill	market for inert waste, for final disposal | inert waste, for final disposal | Cutoff, U	Ecoinvent 3.8	2021
Wastewater	market for wastewater from ceramic production | wastewater from ceramic production | Cutoff, U	Ecoinvent 3.8	2021

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 manufacturer provided primary data on product manufacturing for the William H. Marsh facility in Hangzhou, China on annual production for 2021. Representative datasets (secondary data) for upstream and background processes are generally less than 5 years old.
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 modelled for the specific State Grid Corporation in China represented in this study. Surrogate data used in the assessment are representative of global or European operations and 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 component datasets, specific to the type of material, 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 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 products. 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 v3.8 data where available. Different portions of the product life cycle are equally considered.
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 the 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 the manufacturing facility represents a 12-month average and is 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. For secondary LCI data, Ecoinvent v3.8 data are used.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the products 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 methodology 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 2021 through December 2021.

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.

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 Washdown Urinal Transportation Summary.*

Name	Unit	Value
Fuel type	-	Diesel
Liters of fuel	l/100 km	18.7
Vehicle Type	-	Freight Truck
Transport Distance	km	3,505
Capacity utilization	%	37
Vehicle Type	-	Ocean Freight
Transport Distance	km	10,570
Capacity utilization	%	70
Gross mass of products transported[1]	kg	30.4

[1] including packaging

4.2 Installation into the Building (A5)

Table 10. *Sloan Washdown Urinal Installation Summary.*

Name	Unit	Value
Ancillary materials	kg	0
Net freshwater consumption specified by water source and fate	m^3	0
Other resources	kg	0
Electricity consumption	kwh	0
Other energy carriers	MJ	0
Product loss per functional unit	kg	0
Waste materials at the construction site before waste processing, generated by product installation	kg	0
Output materials resulting from on-site waste processing	kg	0
Mass of packaging waste specified by type	kg	4.79
Recycle	Kg	*3.36*
Landfill	kg	*1.14*
Incineration	kg	*0.290*
Biogenic carbon contained in packaging	kg CO_2	6.68
Direct emissions to ambient air, soil, and water	kg	0

4.3 Use

Maintenance (B2)

Table 11. *Sloan Washdown Urinal Maintenance Summary.*

Maintenance	Unit	Value
Description of process	-	Daily cleaning with 50 ml 10% HCl solution
Maintenance cycle	Cycles/RSL	7300
Maintenance cycle	Cycles/ESL	27,375
Net freshwater consumption		
City water disposed to sewer	m^3	0.365
Ancillary materials		
Hydrochloric acid	kg	36.5
Other resources	kg	0
Electricity consumption	kWh	0
Other energy carriers	kWh	0
Power output of equipment	kW	0
Material loss	kg	0
Direst emissions to ambient air, soil, and water	kg	0
Further assumptions for scenario development	-	-

Repair (B3)

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

Replacement (B4)

Table 12. *Sloan Washdown Urinal Replacement Summary.*

Replacement	Unit	Value
Replacement cycle (RSL)	Number/RSL	0
Replacement cycle (ESL/RSL)-1	Number/ESL	2.8
Electricity consumption	kWh	0
Net freshwater consumption	m^3	0
Ancillary materials	kg	0
Replacement of worn parts	kg	0
Direct emissions to ambient air, soil, and water	kg	0
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 Washdown Urinal End-of-Life Summary.*

End-of-life		Unit	Value
Assumptions for scenario development			Manual deconstruction, followed by 100 km truck transport to final disposal in landfill
Collection process	Collected separately	kg	0
	Collected with mixed construction waste	kg	25.6
Recovery	Reuse	kg	0
	Recycling	kg	0
	Energy recovery	kg	0
	Landfill	kg	25.6

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 CML-IA impact assessment method and the TRACI 2.1 impact assessment method.

Table 14. *Mandatory Environmental Impact Assessment Categories.*

CMLI-A Impact Category	Unit	TRACI 2.1 Impact Category	Unit
GWP: Global Warming Potential	kg CO_2 eq.	**GWP:** Global Warming Potential	kg CO_2 eq.
ODP: Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	**ODP:** Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.
AP: Acidification Potential of soil and water	kg SO_2 eq.	**AP:** Acidification Potential of soil and water	kg SO_2 eq.
EP: Eutrophication Potential	kg PO_4^{3-} eq.	**EP:** Eutrophication Potential	kg N eq.
POCP: Photochemical Oxidant Creation Potential	kg C_2H_4 eq.	**SFP:** Smog Formation Potential	kg O_3 eq.
ADPE: Abiotic Depletion Potential, elements	kg Sb eq	**FFD:** Fossil Fuel Depletion	MJ Surplus
ADPF: Abiotic Depletion Potential, fossil fuels	MJ		

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
RPR_E: 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
$NRPR_E$: 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	-	-

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. *Impact indicator results for Sloan Washdown Urinal products.*

CML Impact Method	GWP	ODP	AP	EP	POCP	ADPE	ADPF
	kg CO_2 eq	kg CFC-11 eq	kg SO_2 eq	kg PO_4^{3-} eq	kg C_2H_4 eq	kg Sb eq	MJ
A1	0.782	7.45×10^{-8}	0.004	0.001	2.00×10^{-4}	7.93×10^{-6}	9.62
A2	2.06	3.59×10^{-7}	0.008	0.002	2.70×10^{-4}	7.16×10^{-6}	30.6
A3	39.8	3.94×10^{-6}	0.105	0.031	0.006	0.001	559
A1-A3 Total:	**42.6**	**4.36×10^{-6}**	**0.117**	**0.034**	**0.007**	**0.001**	**598**
A4	21.1	3.63×10^{-6}	0.148	0.025	0.004	6.71×10^{-5}	307
A5	0.801	9.27×10^{-6}	0.001	8.50×10^{-4}	4.78×10^{-5}	1.78×10^{-6}	4.71
B2	125	4.86×10^{-5}	0.783	0.263	0.033	0.005	1460
B4	181	2.27×10^{-5}	0.747	0.168	0.031	0.004	2550
C2	0.436	7.58×10^{-8}	0.002	3.90×10^{-4}	5.71×10^{-5}	1.51×10^{-6}	6.46
C4	0.212	5.55×10^{-8}	0.001	3.00×10^{-4}	5.26×10^{-5}	5.96×10^{-7}	4.88

TRACI Impact Method	GWP	ODP	AP	EP	SFP	FFD
	kg CO_2 eq	kg CFC-11 eq	kg SO_2 eq	kg N eq	kg O_3 eq	MJ Surplus
A1	0.779	9.78×10^{-8}	0.005	0.002	0.095	1.15
A2	2.06	4.78×10^{-7}	0.009	0.002	0.225	4.37
A3	39.3	4.77×10^{-6}	0.106	0.060	1.22	77.6
A1-A3 Total:	**42.1**	**5.34×10^{-6}**	**0.119**	**0.064**	**1.53**	**83.0**
A4	21.1	4.83×10^{-6}	0.165	0.024	3.51	44.1
A5	0.801	1.09×10^{-7}	0.001	0.002	0.025	0.625
B2	124	5.03×10^{-5}	0.771	0.536	10.4	120
B4	179	2.88×10^{-5}	0.801	0.253	14.2	358
C2	0.435	1.01×10^{-7}	0.002	4.80×10^{-4}	0.048	0.923
C4	0.212	7.40×10^{-8}	0.002	3.30×10^{-4}	0.039	0.706

Table 17. *Additional Resource Use and Waste indicators for the Sloan Washdown Urinal products.*
INA = Indicator not assessed, | Neg.= Negligible

Resource Use	RPR_E	RPR_M	$NRPR_E$	$NRPR_M$	SM	RSF	NRSF	RE	FW
	MJ	MJ	MJ	MJ	kg	MJ	MJ	MJ	m^3
A1	0.574	0.00	9.94	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.014
A2	0.357	0.00	31.0	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.004
A3	14.7	0.00	568	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.075
A1-A3 Total:	**15.6**	**0.00**	**608**	***INA***	**0.00**	***Neg.***	***Neg.***	***Neg.***	**0.092**
A4	3.40	0.00	311	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.039
A5	0.155	0.00	4.90	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.003
B2	172	0.00	1640	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	2.84
B4	53.8	0.00	2590	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.376
C2	0.075	0.00	6.54	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.001
C4	0.058	0.00	4.95	*INA*	0.00	*Neg.*	*Neg.*	*Neg.*	0.004

Waste & Output	HWD	NHWD	HLRW/ILLRW	CRU	MR	MER	EE
	kg	kg	kg	kg	kg	kg	MJ, LHV
A1	3.31×10^{-5}	1.18	4.52×10^{-5}	0.00	0.00	*Neg.*	*Neg.*
A2	8.18×10^{-5}	1.57	2.00×10^{-4}	0.00	0.00	*Neg.*	*Neg.*
A3	6.60×10^{-4}	1.33	2.60×10^{-4}	0.00	0.00	*Neg.*	*Neg.*
A1-A3 Total:	**7.72×10^{-4}**	**2.66**	**4.99×10^{-4}**	**0.00**	**0.00**	***Neg.***	***Neg.***
A4	7.60×10^{-4}	13.9	0.002	0.00	0.00	*Neg.*	*Neg.*
A5	1.60×10^{-5}	4.70	2.97×10^{-5}	0.00	0.00	*Neg.*	*Neg.*
B2	0.004	21.8	0.005	0.00	0.00	*Neg.*	*Neg.*
B4	0.004	63.6	0.007	0.00	0.00	*Neg.*	*Neg.*
C2	1.73×10^{-5}	0.332	4.28×10^{-5}	0.00	0.00	*Neg.*	*Neg.*
C4	8.78×10^{-6}	25.7	3.22×10^{-5}	0.00	0.00	*Neg.*	*Neg.*

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 dominated by the manufacture module (A3) with the product distribution module (A).

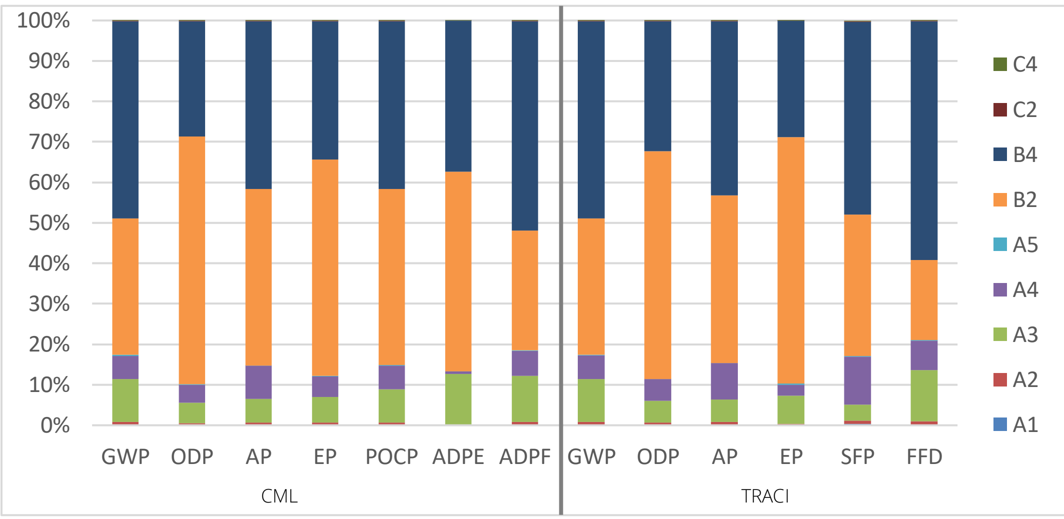


Figure 2. *Contribution analysis for the Sloan Washdown Urinal Products.*

7. ADDITIONAL ENVIRONMENTAL INFORMATION

Over one billion gallons of water are wasted in the U.S. every year because of inefficient toilets, urinals, and faucets. Sloan's high efficiency fixtures and lavatories have been engineered for optimal performance with Sloan flushometers and faucets, and together, these systems conserve an enormous volume of water over the life of the products.

All of the fixtures in this EPD are manufactured in our state of the art Leadership in Energy and Environmental Design (LEED) Silver facility, in China. This facility was designed to capture rainwater and store it in underground storage tanks where it is then processed to drinking water quality. The water is then used to support the entire engineering center; from test benches and restrooms to showrooms and landscaping.

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 fixtures within this EPD can be used to help achieve USGBC LEED v4 points and complying 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 www.sloan.com.

8. REFERENCES

- CML-IA Characterization Factors. Leiden University, Institute of Environmental Sciences. April 2013. https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors
- Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI). U.S. EPA.
- Ecoinvent v3.8 2021. Swiss Center for Life Cycle Inventories, 2010. http://www.ecoinvent.org
- ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
- ISO 14040: 2006/Amd 1:2020 Environmental Management – Life cycle assessment – Principles and Framework
- ISO 14044: 2006/Amd 1:2017/ Amd 2:2020 Environmental Management – Life cycle assessment – Requirements and Guidelines.
- ISO 21930: 2017 Sustainability in building construction – Environmental declaration of building products.
- Life Cycle Assessment of Plumbing Fixtures. SCS Global Services Final Report. Prepared for Sloan Valve Company. July 2022.
- SCS Type III Environmental Declaration Program: Program Operator Manual. V11.0 November 2021. SCS Global Services.
- UL. PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2. December 2018.
- UL PCR Guidance for Building-Related Products and Services Part B: Sanitary Ceramics EPD Requirements. Version 1.0. June 2018.

APPENDIX: INDIVIDUAL MODEL RESULTS

Modules B1, B3, B5, B6, B7, C1, and C3 all have zero impacts and are omitted from the tables below in order to conserve space.

Table 18. *Washdown Urinal models SU7019, SU7009-STG, SU7009 (mass = 23kg)*

Module		A1	A2	A3	Total A1-A3	A4	A5	B2	B4	C2	C4
CML-IA Environmental Impact Results											
GWP	kg CO_2 eq	0.702	1.85	36.0	38.6	19.3	0.801	125	164	0.392	0.191
ODP	kg CFC-11 eq	$6.68x10^{-8}$	$3.22x10^{-7}$	$3.56x10^{-6}$	$3.95x10^{-6}$	$3.32x10^{-6}$	$9.27x10^{-8}$	$4.86x10^{-5}$	$2.06x10^{-5}$	$6.81x10^{-8}$	$4.99x10^{-8}$
AP	kg SO_2 eq	0.004	0.007	0.099	0.110	0.136	0.001	0.783	0.691	0.002	0.001
EP	kg PO_4^{3-} eq	$9.60x10^{-4}$	0.002	0.030	0.032	0.023	$8.50x10^{-4}$	0.263	0.157	$3.50x10^{-4}$	$2.70x10^{-4}$
POCP	kg C_2H_4 eq	$1.80x10^{-4}$	$2.40x10^{-4}$	0.006	0.006	0.004	$4.78x10^{-5}$	0.033	0.029	$5.13x10^{-5}$	$4.73x10^{-5}$
ADPE	kg Sb eq	$7.10x10^{-6}$	$6.43x10^{-6}$	0.001	0.001	$6.14x10^{-5}$	$1.78x10^{-6}$	0.005	0.004	$1.36x10^{-6}$	$5.35x10^{-7}$
ADPF	MJ	8.63	27.4	506	542	281	4.71	1460	2320	5.80	4.38
TRACI Environmental Impact Results											
GWP	kg CO_2 eq	0.699	1.85	35.6	38.1	19.3	0.801	124	163	0.391	0.190
ODP	kg CFC-11 eq	$8.78x10^{-8}$	$4.29x10^{-7}$	$4.31x10^{-6}$	$4.83x10^{-6}$	$4.42x10^{-6}$	$1.09x10^{-7}$	$5.03x10^{-5}$	$2.62x10^{-5}$	$9.07x10^{-8}$	$6.65x10^{-8}$
AP	kg SO_2 eq	0.004	0.008	0.099	0.112	0.151	0.001	0.771	0.739	0.002	0.001
EP	kg N eq	0.001	0.002	0.058	0.062	0.022	0.002	0.536	0.240	$4.30x10^{-4}$	$3.00x10^{-4}$
SFP	kg O_3 eq	0.085	0.202	1.12	1.41	3.21	0.025	10.4	13.0	0.043	0.035
FFD	MJ Surplus	1.03	3.92	70.0	75.0	40.3	0.625	120	325	0.829	0.635
Resource Use Indicator Results											
RPR_E	MJ	0.515	0.320	13.7	14.6	3.11	0.155	172	49.9	0.068	0.052
RPR_M	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$NRPR_E$	MJ	8.92	27.8	514	551	284	4.90	1640	2350	5.88	4.44
$NRPR_M$	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA
SM	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
NRSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
RE	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
FW	m^3	0.013	0.004	0.071	0.087	0.035	0.003	2.84	0.351	$7.70x10^{-4}$	0.004
Waste and Output Indicator Results											
HWD	kg	$2.97x10^{-5}$	$7.34x10^{-5}$	$6.00x10^{-4}$	$7.03x10^{-4}$	$6.90x10^{-4}$	$1.60x10^{-5}$	0.004	0.004	$1.55x10^{-5}$	$7.89x10^{-6}$
NHWD	kg	1.06	1.41	1.22	3.69	12.7	4.70	21.8	59.2	0.299	23.1
HLRW/ILLRW	kg	$4.06x10^{-5}$	$1.80x10^{-4}$	$2.50x10^{-4}$	$4.71x10^{-4}$	0.002	$2.97x10^{-5}$	0.005	0.007	$3.84x10^{-5}$	$2.90x10^{-5}$
CRU	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MR	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EE	MJ, LHV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 19. *Washdown Urinal models SU1009-STG, SU1009 (mass = 24kg)*

Module		A1	A2	A3	Total A1-A3	A4	A5	B2	B4	C2	C4
CML-IA Environmental Impact Results											
GWP	kg CO_2 eq	0.733	1.93	37.5	40.1	20.0	0.801	125	171	0.409	0.199
ODP	kg CFC-11 eq	6.98×10^{-8}	3.36×10^{-7}	3.71×10^{-6}	4.11×10^{-6}	3.44×10^{-6}	9.27×10^{-8}	4.86×10^{-5}	2.14×10^{-5}	7.11×10^{-8}	5.20×10^{-8}
AP	kg SO_2 eq	0.004	0.007	0.101	0.113	0.140	0.001	0.783	0.713	0.002	0.001
EP	kg PO_4^{3-} eq	0.001	0.002	0.030	0.033	0.024	8.50×10^{-4}	0.263	0.161	3.70×10^{-4}	2.80×10^{-4}
POCP	kg C_2H_4 eq	1.90×10^{-4}	2.50×10^{-4}	0.006	0.006	0.004	4.78×10^{-5}	0.033	0.030	5.35×10^{-5}	4.93×10^{-5}
ADPE	kg Sb eq	7.43×10^{-6}	6.71×10^{-6}	0.001	0.001	6.36×10^{-5}	1.78×10^{-6}	0.005	0.004	1.42×10^{-6}	5.58×10^{-7}
ADPF	MJ	9.01	28.6	526	564	291	4.71	1460	2410	6.06	4.58
TRACI Environmental Impact Results											
GWP	kg CO_2 eq	0.730	1.93	37.0	39.7	20.0	0.801	124	169	0.408	0.198
ODP	kg CFC-11 eq	9.17×10^{-8}	4.48×10^{-7}	4.49×10^{-6}	5.03×10^{-6}	4.58×10^{-6}	1.09×10^{-7}	5.03×10^{-5}	2.72×10^{-5}	9.47×10^{-8}	6.93×10^{-8}
AP	kg SO_2 eq	0.005	0.009	0.102	0.115	0.156	0.001	0.771	0.763	0.002	0.001
EP	kg N eq	0.001	0.002	0.059	0.063	0.023	0.002	0.536	0.245	4.50×10^{-4}	3.10×10^{-4}
SFP	kg O_3 eq	0.089	0.211	1.16	1.46	3.33	0.025	10.4	13.5	0.045	0.037
FFD	MJ Surplus	1.07	4.09	72.9	78.1	41.8	0.625	120	337	0.865	0.662
Resource Use Indicator Results											
RPR_E	MJ	0.538	0.334	14.1	15.0	3.22	0.155	172	51.4	0.071	0.054
RPR_M	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$NRPR_E$	MJ	9.32	29.0	535	573	294	4.90	1640	2440	6.13	4.64
$NRPR_M$	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA
SM	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
NRSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
RE	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
FW	m^3	0.013	0.004	0.072	0.089	0.037	0.003	2.84	0.361	0.001	0.004
Waste and Output Indicator Results											
HWD	kg	3.10×10^{-5}	7.66×10^{-5}	6.30×10^{-4}	7.38×10^{-4}	7.20×10^{-4}	1.60×10^{-5}	0.004	0.004	1.62×10^{-5}	8.23×10^{-6}
NHWD	kg	1.11	1.47	1.26	3.84	13.2	4.70	21.8	60.9	0.312	24.1
HLRW/ILLRW	kg	4.23×10^{-5}	1.90×10^{-4}	2.50×10^{-4}	4.82×10^{-4}	0.002	2.97×10^{-5}	0.005	0.007	4.01×10^{-5}	3.02×10^{-5}
CRU	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MR	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EE	MJ, LHV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 20. *Washdown Urinal model SU1019 (mass = 26kg)*

Module		A1	A2	A3	Total A1-A3	A4	A5	B2	B4	C2	C4
CML-IA Environmental Impact Results											
GWP	kg CO_2 eq	0.794	2.09	40.4	43.3	21.4	0.801	125	183	0.443	0.215
ODP	kg CFC-11 eq	$7.55x10^{-8}$	$3.64x10^{-7}$	$4.00x10^{-6}$	$4.44x10^{-6}$	$3.68x10^{-6}$	$9.27x10^{-8}$	$4.86x10^{-5}$	$2.30x10^{-5}$	$7.70x10^{-8}$	$5.64x10^{-8}$
AP	kg SO_2 eq	0.005	0.008	0.106	0.119	0.150	0.001	0.783	0.756	0.002	0.001
EP	kg PO_4^{3-} eq	0.001	0.002	0.031	0.034	0.025	$8.50x10^{-4}$	0.263	0.170	$4.00x10^{-4}$	$3.00x10^{-4}$
POCP	kg C_2H_4 eq	$2.00x10^{-4}$	$2.70x10^{-4}$	0.006	0.007	0.004	$4.78x10^{-5}$	0.033	0.032	$5.80x10^{-5}$	$5.34x10^{-5}$
ADPE	kg Sb eq	$8.02x10^{-6}$	$7.27x10^{-6}$	0.001	0.001	$6.80x10^{-5}$	$1.78x10^{-6}$	0.005	0.004	$1.54x10^{-6}$	$6.05x10^{-7}$
ADPF	MJ	9.8	31.0	567	608	311	4.71	1460	2590	6.56	4.96
TRACI Environmental Impact Results											
GWP	kg CO_2 eq	0.790	2.09	39.9	42.7	21.4	0.801	124	182	0.442	0.215
ODP	kg CFC-11 eq	$9.92x10^{-8}$	$4.85x10^{-7}$	$4.84x10^{-6}$	$5.43x10^{-6}$	$4.90x10^{-6}$	$1.09x10^{-7}$	$5.03x10^{-5}$	$2.92x10^{-5}$	$1.03x10^{-7}$	$7.51x10^{-8}$
AP	kg SO_2 eq	0.005	0.009	0.107	0.121	0.167	0.001	0.771	0.811	0.002	0.002
EP	kg N eq	0.002	0.002	0.061	0.065	0.025	0.002	0.536	0.255	$4.80x10^{-4}$	$3.30x10^{-4}$
SFP	kg O_3 eq	0.096	0.228	1.24	1.56	3.56	0.025	10.4	14.4	0.048	0.040
FFD	MJ Surplus	1.16	4.43	78.8	84.4	44.7	0.625	120	363	0.937	0.717
Resource Use Indicator Results											
RPR_E	MJ	0.582	0.362	14.9	15.8	3.44	0.155	172	54.4	0.077	0.059
RPR_M	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$NRPR_E$	MJ	10.1	31.4	577	618	315	4.90	1640	2630	6.64	5.02
$NRPR_M$	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA
SM	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
NRSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
RE	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
FW	m^3	0.014	0.004	0.076	0.094	0.039	0.003	2.84	0.380	0.001	0.004
Waste and Output Indicator Results											
HWD	kg	$3.36x10^{-5}$	$8.30x10^{-5}$	$6.70x10^{-4}$	$7.87x10^{-4}$	$7.70x10^{-4}$	$1.60x10^{-5}$	0.004	0.004	$1.76x10^{-5}$	$8.92x10^{-6}$
NHWD	kg	1.20	1.60	1.34	4.14	14.1	4.70	21.8	64.3	0.338	26.1
HLRW/ILLRW	kg	$4.59x10^{-5}$	$2.10x10^{-4}$	$2.60x10^{-4}$	$5.16x10^{-4}$	0.002	$2.97x10^{-5}$	0.005	0.007	$4.34x10^{-5}$	$3.27x10^{-5}$
CRU	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MR	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EE	MJ, LHV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Table 21. *Washdown Urinal models SU1209-STG, SU1209 (mass = 31kg)*

Module		A1	A2	A3	Total A1-A3	A4	A5	B2	B4	C2	C4
CML-IA Environmental Impact Results											
GWP	kg CO_2 eq	0.946	2.50	47.6	51.1	24.9	0.801	125	215	0.528	0.257
ODP	kg CFC-11 eq	9.01×10^{-8}	4.34×10^{-7}	4.73×10^{-6}	5.26×10^{-6}	4.27×10^{-6}	9.27×10^{-8}	4.86×10^{-5}	2.69×10^{-5}	9.18×10^{-8}	6.72×10^{-8}
AP	kg SO_2 eq	0.005	0.010	0.118	0.133	0.175	0.001	0.783	0.865	0.002	0.002
EP	kg PO_4^{3-} eq	0.001	0.002	0.034	0.037	0.030	8.50×10^{-4}	0.263	0.190	4.70×10^{-4}	3.60×10^{-4}
POCP	kg C_2H_4 eq	2.40×10^{-4}	3.30×10^{-4}	0.007	0.008	0.005	4.78×10^{-5}	0.033	0.036	6.91×10^{-5}	6.37×10^{-5}
ADPE	kg Sb eq	9.57×10^{-6}	8.67×10^{-6}	0.001	0.001	7.90×10^{-5}	1.78×10^{-6}	0.005	0.004	1.83×10^{-6}	7.21×10^{-7}
ADPF	MJ	11.6	37.0	670	719	362	4.71	1460	3040	7.82	5.91
TRACI Environmental Impact Results											
GWP	kg CO_2 eq	0.942	2.49	47.0	50.5	24.9	0.801	124	213	0.527	0.256
ODP	kg CFC-11 eq	1.18×10^{-7}	5.78×10^{-7}	5.73×10^{-6}	6.42×10^{-6}	5.69×10^{-6}	1.09×10^{-7}	5.03×10^{-5}	3.42×10^{-5}	1.22×10^{-7}	8.96×10^{-8}
AP	kg SO_2 eq	0.006	0.011	0.119	0.137	0.194	0.001	0.771	0.930	0.002	0.002
EP	kg N eq	0.002	0.003	0.065	0.069	0.028	0.002	0.536	0.279	5.80×10^{-4}	4.00×10^{-4}
SFP	kg O_3 eq	0.114	0.272	1.43	1.81	4.14	0.025	10.4	16.7	0.058	0.047
FFD	MJ Surplus	1.39	5.28	93.3	100	51.9	0.625	120	427	1.12	0.855
Resource Use Indicator Results											
RPR_E	MJ	0.694	0.431	16.8	18.0	4.00	0.155	172	61.9	0.091	0.070
RPR_M	MJ	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$NRPR_E$	MJ	12.0	37.5	681	730	366	4.90	1640	3080	7.92	5.99
$NRPR_M$	MJ	INA	INA	INA	INA	INA	INA	INA	INA	INA	INA
SM	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
NRSF	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
RE	MJ	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
FW	m^3	0.017	0.005	0.083	0.105	0.045	0.003	2.84	0.429	0.001	0.005
Waste and Output Indicator Results											
HWD	kg	4.00×10^{-5}	9.90×10^{-5}	7.90×10^{-4}	9.29×10^{-4}	8.90×10^{-4}	1.60×10^{-5}	0.004	0.005	2.09×10^{-5}	1.06×10^{-5}
NHWD	kg	1.43	1.90	1.55	4.89	16.4	4.70	21.8	72.8	0.403	31.1
HLRW/ILLRW	kg	5.47×10^{-5}	2.40×10^{-4}	2.80×10^{-4}	5.75×10^{-4}	0.002	2.97×10^{-5}	0.005	0.008	5.18×10^{-5}	3.90×10^{-5}
CRU	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MR	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MER	kg	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EE	MJ, LHV	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

For more information please contact

Sloan Valve Company
10500 Seymour Avenue
Franklin Park, IL 60131
customer.service@sloan.com | 800.982.5839
https://www.sloan.com

SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA
Main +1.510.452.8000 | fax +1.510.452.8001