Environmental Product Declaration

Electrostatic Discharge Tile

MOHAWK GROUP
ELECTROSTATIC DISCHARGE TILE (ESD)

ELECTROSTATIC DISCHARGE TILE
Mohawk Group's ESD tile eliminates or reduces the amount of static electricity, is exceptionally tough, and has superior durability in the most demanding environments.

Mohawk Group

Sustainability is a core value for Mohawk. In addition to being the largest flooring manufacturer in the world, Mohawk is unique among other flooring manufacturers in that we produce every component of the carpet: fiber, yarn, carpet cushion, and carpet backing. Our culture drives us to seek innovation and efficiency throughout the life cycle of our products, thus reducing our consumption of water, energy, and raw materials. Mohawk also has the most diverse recycling programs in the industry. At Mohawk Group, we believe in better. And better for our world means being part of the climate change solution through decarbonization of our products. So, we're taking all our flooring beyond carbon neutral, to build a regenerative, climate-positive future to create a better tomorrow for people and the planet. Through third-party verification, Mohawk embraces transparency for the benefit of both itself and its customer.

For more information visit:
mohawkgroup.com

UL CERTIFIED
ENVIRONMENTAL PRODUCT DECLARATION
UL.COM/EPD

ENVIRONMENTAL PRODUCT DECLARATION

Electrostatic Discharge Tile
High Performance Resilient Flooring

According to ISO 14025
and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL PROVIDED
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	UL Provided
MANUFACTURER NAME AND ADDRESS	Mohawk Industries, Inc. 160 Industrial Blvd., Calhoun, GA 30701
DECLARATION NUMBER	UL Provided
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	Static Control Tile (ESD) Functional Unit = 1 m^2
REFERENCE PCR AND VERSION NUMBER	PCR for Building-Related Products and Services – Part A: Calculation Rules for LCA and Requirements, (UL Environment, V3.2), Part B: Flooring EPD Requirements UL 10010-7 v2.0 September 2018
DESCRIPTION OF PRODUCT APPLICATION/USE	Electrostatic Discharge Tile
PRODUCT RSL DESCRIPTION (IF APPL.)	25 Years
MARKETS OF APPLICABILITY	Global
DATE OF ISSUE	UL Provided
PERIOD OF VALIDITY	UL Provided
EPD TYPE	Product-specific
RANGE OF DATASET VARIABILITY	N/A
EPD SCOPE	Cradle to Grave
YEAR(S) OF REPORTED PRIMARY DATA	2024
LCA SOFTWARE & VERSION NUMBER	GaBi 2021
LCI DATABASE(S) & VERSION NUMBER	GaBi 2021 LCI Database
LCIA METHODOLOGY & VERSION NUMBER	CML 2001, April 2013 and TRACI 2.1

The PCR review was conducted by:	UL Provided
	UL Provided
	UL Provided
This declaration was independently verified in accordance with ISO 14025: 2006. ☐ INTERNAL ☐ EXTERNAL	
	UL Provided
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	
	UL Provided
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	
	UL Provided

LIMITATIONS

Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

1. Product Definition and Information

1.1. Description of Company/Organization

Mohawk is a leading manufacturer of carpet, wood, laminate, and luxury vinyl tile flooring that began in 1878. Mohawk is committed to growing in ways that are environmentally sound, socially responsible, and make sense for their stakeholders. The Mohawk Group strives to design and manufacture innovative products with reduced environmental and social impacts. As part of the world's largest flooring manufacturer, Mohawk feels a profound sense of responsibility to advance their shared mission of a more sustainable future.

1.2. Product Description

Product Identification

Static Control Tile (ESD) is the best and most trusted solution for eliminating static electricity from environments where sensitive electronics or equipment are present. This ensures protection of the equipment but also protects the individuals present in that space. Static Control Tile has carbon veins embedded in the tile that direct static electricity to ground. Mohawk Group's ESD tile products have a 25 year limited wear warranty and have a lifetime limited electrical warranty.

As of 2022, all Mohawk Group flooring products will be carbon neutral plus an additional 5%. Mohawk's ESD Tile meets Mohawk Group's commitment to Beyond Carbon Neutral.

This study covers all products and styles within the ESD Tile platform. ESD Tile is a type of resilient flooring made from a single layer of vinyl material that has uniform color and composition throughout it's thickness. The tile has carbon veins embedded in the tile that directs static electriciy to the ground. Key features of ESD Tile are durabiility, maintenance, and static disipating properties. An average product weight of 5634 g/m2 is used for this study and an average thickness of 3mm.

Product Specification

This product is covered by UNSPSC code 30161700 and CSI Masterformat code 09 65 00 – Electrostatic Discharge Flooring.

Product Average

An average based on product construction was utilized for the life cycle assessment. The average was created by utilizing the standard formulation and product thickness and weight. This is deemed to be an accurate representation of an average flooring product.

1.3. Application

Static Control Tile is designed to be used in high traffic commerical areas such as hospitals, electronics industry, and where sensitive electronics or equipment is present.

1.4. Declaration of Methodological Framework

This LCA is a cradle-to-grave study. This EPD covers the entire life cycle of the product from cradle to grave (modules A1-D) excluding modules for which there are no inputs/outputs. A summary of the life cycle stages can be found in Table 12.

The reference service life is 25 years and is only applicable if all manufacturing guidelines are followed regarding site-selection, installation, and maintenance.

The cut-off criteria are described in Section 2.4 and allocation procedures are described in Section 2.8. No known flows are deliberately excluded from this EPD.

1.5. Technical Requirements

The following technical data describe the product undergoing life cycle assessment.

Table 1. Technical Data

Name		Average Value	Unit
Product Thickness		3.0	mm
Product Weight		5634	g/m2
Product Form	Tiles	12 x 12 36 x 36	in

1.6. Properties of Declared Product as Delivered

The ESD tiles are stacked in a cardboard box. The boxes are then stacked on pallets and wrapped with polyethylene film for shipping. Mohawk Group encourages installers to recycle the packaging in local recycling programs.

1.7. Material Composition

The material that make up the product are indicated in Table 2

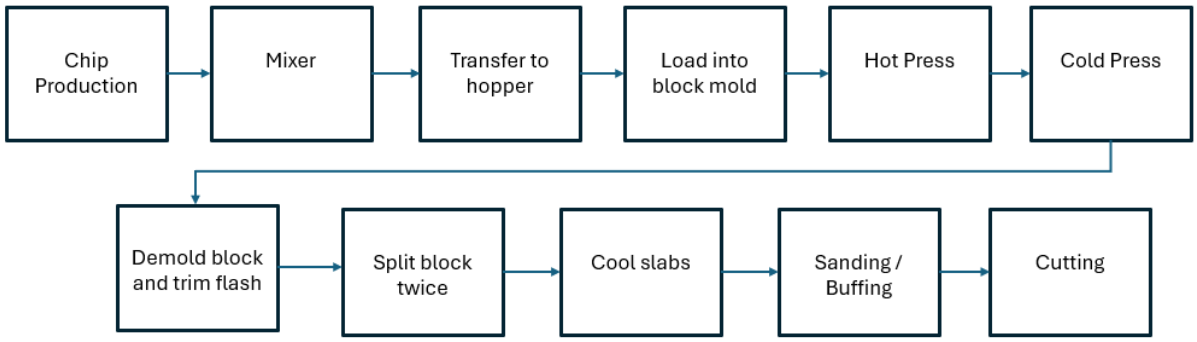
Table 2. Material Composition

COMPONENT	Mass %
PVC	29%
Plasticizer	8%
Filler	58%
Titanium Dioxide	2%
Static Conductive Additive	1%
Paraffin Wax	<1%
Color Pigment	<1%
Other	<1%

1.8. Manufacturing

ESD flooring tile products are manufactured in Sheboygan, Wisconsin. ESD is produced in several stages beginning with chip production. First, the chips are loaded into a mixer and blended. The chips are then transferred to a hopper to be loaded into block molds. The chips are weighed in the molds, then hot pressed together. After the hot press, the chips go to a cold press to solidify. At this point, the chips are in a large tile form and are demolded and trimed. The tiles are sliced twice across the width, making four tile pieces. These pieces are sanded and buffed into a final gauge and finish. The tiles are packaged into a cardboard box and palletized with stretch wrap film for delivery.

Flow Diagram



1.9. Packaging

Packaging utilized in the shipment of the product is described in Table 3.

Table 3. Packaging

Packaging Type	Material	Amount (kg)	Disposal Pathway
Cardboard Core	Corrugate	0.31	Landfill
Plastic Wrap	Polyethylene Film	0.01	Landfill
Wood Pallet	Wood	0.14	Landfill

1.10. Transportation

Transport of raw materials from supplier to the manufacturing facility by truck or ship is included in the model, but only an average has been listed here due to simplicity.

An average shipping distance from manufacturing location to the customer was assumed to be 500 miles (805 kilometers) by a Class 8 truck.

1.11. Product Installation

This study includes tranportation to the construction site by truck and flooring installation in the building. Installation of this prouduct primarily involves hand tools for measuring and cutting floor materials. Approximately 9% of the total material is assumed to be trimmed and discarded as waste. Some of this waste can be recycled, but this scrap is modeled as being disposed of in a landfill.

Detailed installation instructions can be found at: www.mohawkgroup.com/resources/installation-guides.

1.12. Use

ESD should be cleaned in accordance with the product warranty instructions including sweeping and mopping. The frequency is dependent upon the expected foot traffic and local conditions.

ESD does not require any finish, waxing, or stripping. It can be buffed to remove scratches and is designed to be extremely low maintinenace. Mohawk's ESD tile products have a 25 year limited wear warranty and a lifetime limited electrical warranty.

No health concerns are present during the normal use of the flooring.

1.13. Reference Service Life and Estimated Building Service Life

The service life of ESD will vary depending on the amount of floor traffic and the type and frequency of maintenance. The level of maintenance is also dependent on the actual use and desired appearance of the floor. For this product the Reference Service Life (RSL) is 25 years. This means that the product will meet its functional requirements for an average of 25 years before replacement. The estimated building service life is 75 years, as specified by the PCR.

1.14. Reuse, Recycling, and Energy Recovery

Mohawk will take back and recycle used ESD via the ReCover program. Through this program, Mohawk works with a national network of recyclers to ensure used ESD stays out of the landfill. Learn more about the program at www.mohawkgroup.com/sustainability/repurpose-reuse-recycle.

1.15. Disposal

For this study, it is assumed that at the end of the useful life of the product, 100% is diposed through landfill, 0% is recycled, and 0% is incinerated.

2. Life Cycle Assessment Background Information

2.1. Functional or Declared Unit

Per the PCR, the functional unit is 1 m^2 of floor covering over the RSL of 25 years, as indicated in Table 4.

Table 4. Functional Unit

NAME	VALUE	UNIT
Functional Unit	1 m^2	-
Mass	5.63	kg

2.2. System Boundary

This EPD is considered cradle-to-grave. The following modules are included and summarized in Table 5:

Table 5. System Boundary

Module Name	Description	Summary of Included Elements
A1	Product Stage: Raw Material Supply	Raw Material sourcing and processing as defined by secondary data
A2	Product Stage: Transport	Shipping from supplier to manufacturing site. Fuel use requirements estimated based on product weights and estimated distance
A3	Product Stage: Manufacturing	Energy, water and material inputs required for manufacturing products from raw materials. Packaging materials and manufacturing waste are included as well
A4	Construction Process Stage: Transport	Shipping from manufacturing site to project site. Fuel use requirements estimated based on product weights and mapped distance
A5	Construction Process Stage: Installation	Installation adhesives, installation waste and packaging material waste
B1	Use Stage: Use	Use of the product
B2	Use Stage: Maintenance	Cleaning energy, water, and materials, including refinishing the product
B4	Use Stage: Replacement	Total materials and energy required to manufacture a replacement. Includes EOL treatment for replacements.
C2	EOL: Transport	Shipping from project site to landfill. Fuel use requirements estimated based on product weight and mapped distance
C3	EOL: Waste Processing	Waste processing not required. All waste can be processed as is
C4	EOL: Disposal	Assumes all products are sent to landfill. Landfill impacts modeled based on secondary data

2.3. Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44. The majority of the estimations are within the primary data. The primary data was collected as annual totals including all utility usage and production information. For the LCA, the utility usage information was divided by the production to create an energy and water use per square meter. As there are different products produced at this facility, it is assumed all products are using the same amount of energy. A weighted average of product weight based on one year of sales data is used.

The recommended cleaning regime is highly dependent on the use of the premises where the floor covering is installed. In high traffic areas more frequent cleaning will be needed compared to areas where there is low traffic. For the purposes of this EPD, recommended maintenance is presented based on guidelines from the manufacturer.

Transportation distances to installation and disposal were assumed to be 500 and 100 miles (805 and 161 kilometers), respectively.

2.4. Cut-off Criteria

All inputs in which data was available were included. Material inputs greater than 1% (based on total mass of the final product) were included within the scope of analysis. Material inputs less than 1% were included if sufficient data was available to warrant inclusion and/or the material input was thought to have significant environmental impact.

Cumulative excluded material inputs and environmental impacts are less than 5% based on total weight of the functional unit.

2.5. Data Sources

Primary data were collected by facility personnel and from utility bills during calendar year 2024. Whenever available, supplier data was used for raw materials used in the production process. When primary data did not exist, secondary data for raw material production was utilized from GaBi 2021 Database.

2.6. Data Quality

Temporal Coverage

The primary data provided by the manufacturer represent all information for calendar year 2024. Using this data meets the PCR requirements. Time coverage of this data is considered very good.

Geographical Coverage

The geographical scope of the manufacturing portion of the life cycle is Sheboygan, WI. All primary data were collected from the manufacturer. The geographic coverage of primary data is considered very good. Proxy datasets were used as needed for raw material inputs to address lack of data for a specific material or geographic region.

Technological Coverage

Primary data provided by the manufacturer is specific to the technology that Mohawk uses in manufacturing their product. It is site-specific and considered of good quality.

2.7. Period under Review

The period under review is calendar year 2024.

2.8. Allocation

General principles of allocation were based on ISO 14040/44. Where possible, allocation was avoided. When allocation was necessary it was done on a physical mass basis.

No co- or by-product allocation was necessary during the manufacturing, use or end of life. In the case of secondary raw materials, only burdens from the point of recovery forward were considered (cut-off approach). The primary production of recycled materials was outside the system boundary.

3. Life Cycle Assessment Scenarios

Table 6. Transport to the building site (A4)

NAME	VALUE	UNIT
Fuel type	Diesel	
Liters of fuel	42	L/100km
Vehicle type	Truck – Heavy Heavy-duty Diesel / 53,333 lb (20.2 metric ton) payload	
Transport distance	800	km
Capacity utilization (including empty runs, mass based	68	%
Gross density of products transported	5.63	kg/m³
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)	=1	-

Table 7. Installation into the building (A5)

NAME	VALUE	UNIT
Ancillary materials - adhesive	0.80	kg
Net freshwater consumption	0	m^3
Electricity consumption	0.09	kWh
Product loss per functional unit	0	kg
Waste materials at the construction site before waste processing, generated by product installation	0.84	kg
Output materials resulting from on-site waste processing	0	kg
Biogenic carbon contained in packaging	0.27	kg CO_2
Direct emissions to ambient air, soil, and water	0	kg
VOC content	N/A	µg/m³

Table 8. Reference Service Life

NAME	VALUE	UNIT
RSL	25	years

Table 9. Maintenance (B2)

NAME	VALUE	UNIT
Maintenance cycle	1,300 (weekly)	Cycles / RSL
Maintenance cycle	3,900 (weekly)	Cycles / ESL
Net freshwater consumption specified by water source and fate (disposed to sewer)	0.11	kg/ESL
Ancillary materials specified by type (cleaning agent)	119	mL/m²/yr
Energy input, specified by activity, type and amount	0.022	kWh/m²/yr
Other energy carriers specified by type	-	kWh
Waste materials from maintenance	-	kg
Direct emissions to ambient air, soil and water	-	kg

Table 10. Replacement (B4)

NAME	VALUE	UNIT
Reference Service Life	25	Years
Replacement Cycle	3	(ESL/RSL)-1
Energy input	-	kWh
Net freshwater consumption	-	m^3
Ancillary materials	-	kg
Replacement of worn parts	-	kg
Direct emissions to ambient air, soil, and water	0	kg
Further assumptions for scenario development	-	As appropriate

Table 11. End of life (C1-C4)

NAME		VALUE	UNIT
Assumptions for scenario development	Product disposed of either with underlying floor or manually removed via scraping		
Collection process	Collected separately	0	kg
	Collected with mixed construction waste	5.63	kg
Recovery	Reuse	0	kg
	Recycling	0	kg
	Landfill	5.63	kg
	Incineration	0	kg
	Incineration with energy recovery	-	kg
	Energy conversion efficiency rate	-	
Disposal	Product or material for final deposition	5.63	kg
Removals of biogenic carbon (excluding packaging)		-	kg CO_2

4. Life Cycle Assessment Results

Table 12. Description of the system boundary modules

The LCA scope is cradle-to-grave. Note that modules B1, B3, B5-B7, C1, and C3 have no environmental impacts and are excluded from results tables to improve readability. Module D is excluded from this analysis.

(X = Included; MND = Module Not Declared)

	PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				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 supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
Cradle-to-Grave	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	MND

4.1. Life Cycle Impact Assessment Results: 75 Year Estimated Building Service Life

Table 13. North American Impact Assessment Results

TRACI v2.1	A1-A3	A4	A5	B2	B4	C2	C4
GWP 100 [kg CO2 eq]	1.04E+01	2.31E+00	5.29E+00	6.30E+00	3.68E+01	1.72E-01	2.82E-01
ODP [kg CFC-11 eq]	2.76E-07	7.04E-15	1.65E-09	7.74E-13	5.54E-07	5.13E-16	1.38E-14
AP [kg SO_2 eq]	1.35E-01	1.83E-02	8.21E-03	8.09E-03	3.27E-01	4.94E-04	1.50E-03
EP [kg N eq]	1.74E-03	1.45E-03	8.72E-04	7.27E-04	1.19E-02	5.17E-05	1.84E-03
SFP [kg O_3 eq]	4.46E-01	4.23E-01	1.31E-01	1.20E-01	2.08E+00	1.12E-02	2.67E-02
ADP_{fossil} [MJ, LHV]	3.52E+01	4.49E+00	1.14E+01	7.51E+00	1.04E+02	3.27E-01	5.67E-01

GWP 100 = Global Warming Potential; ODP = Ozone Depletion Potential; AP = Acidification Potential; EP = Eutrophication Potential; SFP = Smog Formation Potential; ADP_{fossil} = Abiotic Depletion Potential (Fossil)

Table 14. EU Impact Assessment Results

CML v4.2	A1-A3	A4	A5	B2	B4	C2	C4
GWP 100 [kg CO2 eq]	1.05E+01	2.33E+00	5.36E+00	6.37E+00	3.74E+01	1.73E-01	2.86E-01
ODP [kg CFC-11 eq]	2.75E-07	4.15E-13	1.66E-09	4.58E-11	5.53E-07	3.02E-14	8.18E-13
AP [kg SO_2 eq]	1.42E-01	1.32E-02	7.51E-03	7.69E-03	3.28E-01	3.66E-04	1.41E-03
EP [kg PO_4^{-3} eq]	2.70E-03	3.48E-03	1.16E-03	8.76E-04	1.96E-02	9.68E-05	2.34E-03
POCP [kg ethene eq]	8.94E-03	-5.95E-03	8.57E-04	7.03E-04	7.67E-03	-1.27E-04	1.10E-04
$ADP_{element}$ [kg Sb-eq]	3.16E-05	3.33E-07	1.69E-05	8.80E-07	9.80E-05	2.42E-08	9.29E-08
ADP_{fossil} [MJ, LHV]	2.98E+02	3.13E+01	9.09E+01	7.85E+01	8.54E+02	2.28E+00	4.24E+00

GWP 100 = Global Warming Potential; ODP = Ozone Depletion Potential; AP = Acidification Potential; EP = Eutrophication Potential; POCP = Photochemical Oxidant Creation Potential; $ADP_{element}$ = Abiotic Depletion Potential (elements); ADP_{fossil} = Abiotic Depletion Potential (Fossil)

Using the framework from Living Product Challenge (LPC) Net Positive Carbon Petal, ESD Tile meets Mohawk Group's commitment to Beyond Carbon Neutral. Each year, Mohawk retires the equivalent to 105% of the cradle-to-gate GWP to cover all sales of the platform. The resulting GWP is shown in

Table 15.

Table 15. A1-3 GWP (TRACI 2.1) and Beyond Carbon Neutral

	Embodied Carbon [kg CO2 eq/m^2]	Beyond Carbon Neutral [kg CO2 eq/m^2]
ESD	10.4	-0.52

4.2. Life Cycle Inventory Results: 75 Year Estimated Building Service Life

Table 16. Resource Use

Parameter	A1-A3	A4	A5	B2	B4	C2	C4
RPR_E [MJ, LHV]	1.74E+01	1.40E+00	5.77E+00	2.91E+01	5.05E+01	1.02E-01	5.42E-01
RPR_M [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RPR_T [MJ, LHV]	1.74E+01	1.40E+00	5.77E+00	2.91E+01	5.05E+01	1.02E-01	5.42E-01
$NRPR_E$ [MJ, LHV]	3.10E+02	3.16E+01	9.67E+01	1.09E+02	8.89E+02	2.30E+00	4.37E+00
$NRPR_M$ [MJ, LHV]	4.50E-01	0.00E+00	2.70E-03	0.00E+00	9.06E-01	0.00E+00	0.00E+00
$NRPR_T$ [MJ, LHV]	3.10E+02	3.16E+01	9.67E+01	1.09E+02	8.90E+02	2.30E+00	4.37E+00
SM [kg]	3.65E-01	0.00E+00	2.19E-03	0.00E+00	7.34E-01	0.00E+00	0.00E+00
RSF [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NRSF [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW [m^3]	1.85E-02	4.64E-03	2.63E-02	4.53E-02	1.01E-01	3.38E-04	5.65E-04

RPRE = Renewable primary resources used as energy carrier (fuel); RPRM = Renewable primary resources with energy content used as material; RPRT = Total use of renewable primary resources with energy content; NRPRE = Non-renewable primary resources used as an energy carrier (fuel); NRPRM = Non-renewable primary resources with energy content used as material; NRPRT = Total use of non-renewable primary resources with energy content; SM = Secondary materials; RSF = Renewable secondary fuels; NRSF = Non-renewable secondary fuels; FW = Use of net freshwater resources

Table 17. Output Flows and Waste Categories

Parameter	A1-A3	A4	A5	B2	B4	C2	C4
HWD [kg]	1.67E-04	4.26E-09	1.02E-06	5.89E-08	3.35E-04	3.10E-10	1.08E-09
NHWD [kg]	1.56E+00	3.15E-03	1.04E+00	3.80E-02	3.18E+01	2.29E-04	1.33E+01
HLRW [kg]	2.14E-06	1.13E-07	2.45E-06	1.31E-05	9.52E-06	8.21E-09	5.20E-08
ILLRW [kg]	1.78E-03	9.51E-05	2.05E-03	1.10E-02	7.96E-03	6.92E-06	4.64E-05
CRU [kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR [kg]	0.00E+00	0.00E+00	1.37E-02	0.00E+00	2.73E-02	0.00E+00	0.00E+00
MER [kg]	0.00E+00	0.00E+00	9.55E-04	0.00E+00	1.91E-03	0.00E+00	0.00E+00
EEE [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; HLRW = High-level radioactive waste; ILLRW = Intermediate- & low-level radioactive waste; CRU = Components for reuse; MR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy, electrical; EET = Exported energy, thermal

5. LCA Interpretation

The analysis results represent cradle-to-grave environmental performance of ESD products. The top three contributors to each impact category are shown in Table 18

Table 18. Highest Contributions by Impact Category

Impact Category	Contributors		
	Largest	2nd	3rd
Global Warming Potential, GWP	B4	A1-3	B2
Ozone Depletion Potential, ODP	B4	A1-3	B2
Acidification Potential, AP	B4	A1-3	B2
Eutrophication Potential, EP	B4	A1-3	B2
Depletion of abiotic resources – fossil fuels, ADPf	B4	A1-3	B2

Under the 75-year building service life assumption, the replacement stage (B4) was the largest contributor in all five impact categories considered. The production of raw materials (A1-3) also represents a substantial fraction of the life cycle impacts. Maintenance (B2) was the third highest contributor for the five impact categories. If the impacts of the product were considered for one product life, the production stage (A1-3) would have the most significant impact

Within the raw materials, the PVC has a very large contribution to the environmental impacts even though it represents roughly 29% of the total mass of the product.

6. Additional Environmental Information

6.1. Environment and Health During Manufacturing

More information on the manufacturer's sustainability and environmental programs, including a corporate sustainabiltiy report, can be found online at https://mohawkind.com/esg/.

6.2. Environment and Health During Installation

All recommended personal protective equipment (PPE) should be utilized during installation, as indication on the SDS and installation guidelines, found online at https://mohawkgroup.com/technical-resources/installation.

6.3. Extraordinary Effects

Fire

Name	Value
Radiant panel (ASTM E-648)	Class 1
Smoke density (ASTM E-662)	<450

Water

This product is impervious to water, protecting the subfloor from leaks and spills. Exposure to flooding for long periods

may result in damage to the product.

Mechanical Destruction

If the product is mechanically destroyed, it should be disposed of using standard procedures and replaced in a timely manner.

6.4. Environmental Activities and Certifications

All environmental activities and certificates can be found at mohawkgroup.com

7. References

GaBi 2021	Sphera Solutions; GaBi: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen, 1992-2021.
EN 15804	EN 15804:2012-02 Sustainability of construction works – Environmental Product Declarations – Core Rules for the product category of construction products
ISO 14025	ISO 14025:2011-10 Environmental labels and declarations – Type III environmental declarations – Principles and procedures
ISO 14040	ISO 14040:2066/Amd.1:2020 Environmental management – Life cycle assessment – Principles and framework
ISO 14044	ISO 14044:2006/Amd.1:2017/Amd.2:2020 Environmental management – Life cycle assessment – Requirements and guidelines
ISO 21930	ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product delcarations of construction products and services
UL Environment	Program Operator Rules v2.7 March 2022
UL Environment	PCR Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2, 12.12.2018
UL Environment	PCR Part B: Flooring EPD Requirements. Product Category Rule (PCR) Guidance for Building-Related Products and Services. Version 4, 2020