EIFS MESH

SAINT-GOBAIN ADFORS FAÇADE CLADDING REINFORCEMENT MESH



Our façade cladding mesh promotes system performance via optimum impact and crack resistance and enhanced coatings for flame retardant and alkali resistance. ADFORS mesh is also designed with a pliable coating which maintains flexibility for ease of application and a stronger bond.



Focused on the construction and industrial markets, ADFORS offers solutions based on a complete range of textile and coating technologies using fiberglass yarns and synthetic fibers. ADFORS is the reliable and innovative global leader in technical textiles, offering the most adapted solutions to meet your needs.

ADFORS belongs to the Saint-Gobain group, the world's largest building materials company. Saint-Gobain has been creating and delivering innovative and high performance solutions to enhance habitat and daily life for over 350 years.

Saint-Gobain is committed to providing sustainable products and to limiting our impacts on the environment while doing so. (See our CSR at <u>https://www.saint-gobain.com/en/commitments/saint-gobains-csr-commitments.)</u>

For more information, visit:

www.ADFORS.com





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025, ISO 21930:2017 & EN 15804

This declaration is an environmental product declaration (EPD) in accordance with ISO 14025. EPDs rely on Life Cycle Assessment (LCA) to provide information on a number of environmental impacts of products over their life cycle. <u>Exclusions</u>: 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 to a site and earlifections that any environmental to a data and there are formation on a replace to a site and there are formation on a replace to a site and there are formation on a number of environmental impacts of the site and the site and the site and the site are formation.



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. <u>Accuracy of Results</u>: EPDs regularly rely on estimations of impacts, and the level of accuracy in estimation of effect differs for any particular product line and reported impact. <u>Comparability</u>: EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. EPDs from different programs may not be comparable.

PROGRAM OPERATOR	UL Environment					
DECLARATION HOLDER	Adfors-Saint Gobain					
DECLARATION NUMBER	4789078351.101					
DECLARED PRODUCT	EIFS Mesh: Façade Cladding Reinfo	prcement Mesh				
REFERENCE PCR	Institut Bauen und Umwelt e.V. (IBU Glass Reinforcement Mesh v.1.6, No) Part B: Requirements on the EPD for ovember 2017				
REFERENCE PCR STANDARD	x EN 15804 (2012) □ ISO 21930 (2007) x ISO 21930 (2017)	x EN 15804 (2012) □ ISO 21930 (2007) x ISO 21930 (2017)				
DATE OF ISSUE	July 1, 2020					
PERIOD OF VALIDITY	5 Years					
CONTENTS OF THE DECLARATION	Product definition and information at Information about basic material and Description of the product's manufac Indication of product processing Information about the in-use condition Life cycle assessment results Testing results and verifications	oout building physics I the material's origin cture ons				
The PCR review was conducted	ed by:	Institut Bauen und Umwelt e.V. (IBU)				
		PCR Review Panel-SVR				
This declaration was independ 14025 by Underwriters Labora ☐ INTERNAL	dently verified in accordance with ISO atories	Grant R. Martin Grant R. Martin, UL Environment				
This life cycle assessment was accordance with ISO 14044 a	s independently verified in nd the reference PCR by:	Thomas P. Gloria, Industrial Ecology Consultants				



EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

Product Documentation

Product Description

EIFS Mesh is a reinforced technical textile used in façade cladding. A base of fiberglass or polyester yarn is woven and then coated with a proprietary blend coating for a strong yet pliable textile. The coated textiles provide a range of attributes including adhesion, impact resistance, fire retardancy, heat sealability, water resistance, temperature resistance, mold resistance, stiffness, and more. EIFS Mesh is designed for greater flexibility and drapability, especially valuable when covering complex shapes. The new formula provides a superior yarn-to-yarn bond strength and resist fraying when cutting.







XP 403 Fabric

ADFORS EIFS Mesh products are available in several styles. The Standard Mesh, Detail Mesh, PM Systems Mesh, Extra Standard Mesh, Intermediate Mesh, High Impact Resistance 15 Mesh, and High Impact Resistance 20 Mesh are manufactured with a fiberglass yarn base. The XP 403 Fabric is manufactured with a polyester yarn base. This EPD includes all products in the ADFORS EIFS Mesh product line manufactured in North America.

EIFS Mesh Products								
				Coverage	Base Yarn			
Product	Weight	Width	Roll Length		Material			
Standard Mesh	143 g/m ² (4.3 oz/yd ²)	97 cm (38 in)	45.7 m (50 yds)	44 m ² (475 ft ²)	Fiberglass			
	143 g/m ² (4.3 oz/yd ²)	122 cm (48 in)	45.7 m (50 yds)	55.7 m ² (600 ft ²)				
Detail Mesh	143 g/m ² (4.3 oz/yd ²)	24 cm (9.25 in)	45.7 m (50 yds)	11 m ² (118 ft ²)	Fiberglass			
PM Systems Mesh	152 g/m ² (4.5 oz/yd ²)	97 cm (38 in)	45.7 m (50 yds)	44 m ² (475 ft ²)	Fiberglass			
Extra Standard Mesh	200 g/m ² (6 oz/yd ²)	97 cm (38 in)	45.7 m (50 yds)	44 m ² (475 ft ²)	Fiberglass			
Intermediate Mesh	370 g/m ² (11 oz/yd ²)	97 cm (38 in)	22.8 m (25 yds)	22.1 m ² (238 ft ²)	Fiberglass			
High Impact Resistant	500 g/m ² (15 oz/yd ²)	97 cm (38 in)	22.8 m (25 yds)	22.1 m ² (238 ft ²)	Fiberglass			
Mesh 15								
High Impact Resistant	700 g/m ² (20 oz/yd ²)	100 cm (39.4 in)	22.8 m (25 yds)	22.8 m ² (246 ft ²)	Fiberglass			
Mesh 20								
XP 403 Fabric	35 g/m ² (1 oz/yd ²)	4.4 – 91.4 cm	54.9 m (60 yds)	Varies	Polyester			
		(1.75 – 36 in)						

Table 1: ADFORS EIFS Mesh Products





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

Application

EIFS Mesh products are intended for use as structural reinforcement for many construction system applications.

Technical Data

EIFS Mesh						
CSI Code	07 24 00					
UNSPSC Code	11162105					
Product	Impact Range per EIMA Test Method & Standard 101.86					
Standard Mesh	25-35 Standard Impact					
Detail Mesh	25-35 Standard Impact					
PM Systems Mesh	25-35 Standard Impact					
Extra Standard Mesh	35-49 Standard Impact					
Intermediate Mesh	50-89 Medium Impact					
High Impact Resistant Mesh 15	90-150 High Impact					
High Impact Resistant Mesh 20	> 150 Ultra High Impact					
XP 403 Fabric	N/A					

Table 2: Technical Data for EIFS Mesh Products

Delivery Status

EIFS Mesh products are packaged and delivered as rolls according to the dimensions listed in Table 1.

Base Materials

EIFS Mesh Products	– Fiberglass Base	EIFS Mesh Products – Polyester Base			
Average Product		Material	Average Product		
Material	Composition		Composition		
Fiberglass Yarn	79%	Polyester Yarn	38%		
Proprietary Coating	17%	Proprietary Coating	59%		
Blend		Blend			
Decabromo Powder	2%	Additional Additives	3%		
Additional Additives	2%				
Total kg/m ² :	0.158	Total kg/m ² :	0.035		

Table 3: EIFS Mesh Material Content





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Manufacturing Location

All ADFORS EIFS Mesh fiberglass base products are manufactured at the Midland, ON manufacturing location in Canada and the ADFORS EIFS Mesh polyester base products are manufactured at the Albion, NY manufacturing location in the United States.

Manufacturing

The manufacturing process begins with the weaving of the yarn. The woven yarn is then accumulated around a core and prepared for coating application. The raw material components of the coatings are mixed in batches according to the specific product being made. The woven yarn is fed through a coating machine with coating troughs and drying ovens. Edge material is trimmed and depending on the product, the coated material is cut to the specified width. Finished coated fabrics are then accumulated on a core and then packaged for shipment.



Figure 1: EIFS Mesh Process Flow

Environment and Health During Manufacture

Saint-Gobain has well-established Environmental, Health, and Safety (EHS) and product stewardship programs, which help to enforce proper evaluation and monitoring of chemicals and raw materials chosen to manufacture products. These programs ensure that all environmental and OSHA requirements are met or exceeded to ensure the health and safety of all employees and contractors.

The Midland, ON and Albion, NY manufacturing facilities operate integrated Environmental, Health, and Safety Management Systems that align with the ISO 14001 and ISO 45001 standards.

Product Processing/Installation

EIFS Mesh is used in conjunction with other materials as a reinforcement mesh in façade cladding systems. Product processing or installation will vary among façade cladding manufactures.





EIFS Mesh: Façade Cladding Reinforcement Mesh

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Packaging

Packaging of the final product after production is included in the life cycle assessment. Packaging material includes the cardboard cores the material is wound on, plastic bags, tape, and pallets.

Condition of Use

There are no known changes in material composition over the service life of the EIFS Mesh products.

Environment and Health During Use

There are no known harmful substances or emissions during the use of EIFS Mesh products.

Extraordinary Effects

Fire, Water, and Mechanical Destruction

EIFS Mesh products have no known extraordinary effects concerning fire, water, or mechanical destruction.

Re-Use Phase

At this time there are no recycling scenarios for EIFS Mesh at the end of its service life.

Disposal

At this time, there are no known scenarios for separating the mesh from the structure with which it was installed. The product's end-of-life is assumed to be inert in a landfill. Disposal in a municipal landfill or in commercial incineration facilities is permissible and should be done in accordance with local, provincial, and federal regulations.

Further Information

www.adfors.com





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

LCA Calculation Rules

Declared Unit

Declared Unit						
Name	Value	Unit				
Declared unit	1	m²				
Weight	0.151	kg/m²				
Conversion to 1 kg	6.618	-				

Table 4: Declared Unit Information

System Boundary

The life cycle analysis performed for this EPD is classified as a "cradle-to-gate w/options" study. The system boundary includes raw material supply, manufacture, and transport; the EIFS Mesh products manufactured in Midland, ON and Albion, NY, and packaging; and product end-of-life.

Description of the System Boundary (X=included in LCA: MND=module not declared)																
Pro	duct St	age	Consti Proc Sta	ruction cess age		Use Stage				End of Life Stage				Benefits & Loads Beyond System Boundaries		
Raw Material Supply	Transport	Manufacturing	Transport from the gate to the site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-construction demolition	Transport	Waste Processing	Disposal	Reuse-Recover- Recycling Potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Х	Х	Х	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	Х	MND	Х	MND

Table 5: System Boundary

Estimates and Assumptions

Estimates and assumptions are required in life cycle analysis to constrain the project boundary or model when little or not data is available. In this study of EIFS Mesh products, estimates or assumptions were made regarding the background dataset for some of the chemicals contained in the proprietary blend coating as specific datasets were not available in the software. All estimates and assumptions are appropriately noted in the report.





EIFS Mesh: Façade Cladding Reinforcement Mesh

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Cut-Off Criteria

The cut-off criteria established for the study include materials, energy, and emissions data. For the purposes of this study, the crtieria are as follows:

- Mass Chemicals with a combined weight less than 1% of the mass of the modeled product may be excluded, providing its environmental relevance is not a concern.
- Human activity factors were not included in the scope of this study.
- Capital equipment factors were not includd in the scope of this study.

Background Data

GaBi version 8.2 software system was used for modeling the life cycle of the EIFS Mesh products. Each background dataset was taken from the GaBi Thinkstep US Ecoinvent, USLCI databases, or Ecoinvent v3.

Data Quality

Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty. The data sources used are complete and representative of North America and Europe (depending on the material source) in terms of the geographic and technological coverage and are less than 10 years old. Any deviations from these initial data quality requirements for secondary data are documented in the report. Overall, the primary data from the manufacturing location is of very high quality, being directly tracked and measured by facility personel. Secondary data sets are of fair-to-good quality.

Period Under Review

Data for this LCA was collected for the 2018 calendar year.

Allocation

The Midland, ON is the only location that produces EIFS Mesh and Albion, NY is the only location that produces the XP 403 EIFS Fabric in North America for Saint-Gobain Adfors. However, the EIFS mesh products are not the only products produced at these locations. Allocation was conducted based on the square meter production data provided by the facilities as a percentage of the overall square meter production at each facility.

Each facility was modelled separately in order to help Saint-Gobain Adfors to understand the range of inputs and impacts across the product line and the facilities. The combined product line was then modelled as an allocation between the two facilities based on the square meter production data of the product line at Midland and Albion, as a percentage of the overall square meter production of the entire product line. This allocation resulted in 94.4% of the EIFS Mesh product line being produced at the Midland facility and 5.6% produced at the Albion facility.

The results of the individual products included in the study are shown in the Appendix.





EIFS Mesh: Façade Cladding Reinforcement Mesh

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Comparability

Comparison of the environmental performance of building and construction products using EPD information shall be based on the product's use and impacts at the building level. In general, EPDs may not be used for comparability purposes when not considered in a building context. Given the PCR ensures products meet the same functional requirements, comparability is permissible provided the information given for such comparison is transparent and the limitations of comparability are explained.

LCA Technical Information and Scenarios

Packaging

Although the Installation Module (A5) is not declared for this study, the PCR requires the EPD to report the amount of packaging waste that could be expected at the time of installation.

Packaging Waste on Install						
Name	Value	Unit				
Packaging Material	0.002	kg				
Table 6: Packaging Waste Information						

Table 6: Packaging Waste Information

End of Life

End of Life							
	Value	Unit					
scenario development	Disposal inert in landfill	-					
	transported by truck						
Collected separately	0.000	kg					
Collected with mixed construction waste	0.151	kg					
Reuse	0.000	kg					
Recycling	0.000	kg					
Landfill	0.000	kg					
Incineration	0.000	kg					
Incinerations with energy recovery	0.000	kg					
Energy conversion efficiency rate	0.000	kg					
Product or material for final deposition	0.151	kg					
	End of Life scenario development Collected separately Collected with mixed construction waste Reuse Recycling Landfill Incineration Incinerations with energy recovery Energy conversion efficiency rate Product or material for final deposition	End of Life Value Scenario development Disposal inert in landfill transported by truck Collected separately 0.000 Collected with mixed construction waste 0.151 Reuse 0.000 Recycling 0.000 Landfill 0.000 Incineration 0.000 Incinerations with energy recovery 0.000 Energy conversion efficiency rate 0.000 Product or material for final deposition 0.151					

 Table 7: End-of-Life Technical Scenario





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

LCA Results

Environmental Impacts – North America

EIFS Mesh – TRACI Environmental Impacts									
	Global	Ozone			Smog	Abiotic			
	Warming	Depletion	Acidification	Eutrophication	Creation	Depletion			
	Potential	Potential	Potential	Potential	Potential	Potential (fossil)			
	kg CO₂ eq	kg CFC 11 eq	kg SO₂ eq	kg N eq	kg O₃ eq	MJ			
Raw Materials (A1)	5.53E-01	1.63E-09	2.90E-03	3.17E-03	2.74E-02	1.21E+00			
Raw Material Transport (A2)	5.41E-02	4.77E-13	2.51E-04	2.06E-05	8.30E-03	1.02E-01			
Manufacture (A3)	2.43E-01	2.36E-11	3.61E-04	3.74E-05	6.56E-03	5.89E-01			
Total A1-A3:	8.50E-01	1.65E-09	3.51E-03	3.23E-03	4.23E-02	1.90E+00			
Waste Transport (C2)	1.82E-03	1.60E-14	8.42E-06	6.93E-07	2.79E-04	3.44E-03			
Final Disposal (C4)	6.61E-03	1.03E-13	3.09E-05	1.57E-06	6.09E-04	1.33E-02			
Total Cradle-to-Gate w/Options:	8.58E-01	1.65E-09	3.55E-03	3.23E-03	4.32E-02	1.92E+00			

Table 8: EIFS Mesh Results for North America, TRACI 2.1 Environmental Impacts



Figure 2: EIFS Mesh Results for North America, TRACI 2.1 Environmental Impacts





EIFS Mesh: Façade Cladding Reinforcement Mesh

Environmental Impacts – Europe

EIFS Mesh – CML Environmental Impacts									
						Abiotic	Abiotic		
	Global	Ozone			Smog	Depletion	Depletion		
	Warming	Depletion	Acidification	Eutrophication	Creation	Potential	Potential		
	Potential	Potential	Potential	Potential	Potential	(fossil)	(element)		
	kg CO2 eq	kg R 11 eq	kg SO2 eq	kg phosphate	kg ethane	MJ	kg Sb eq		
				eq	eq				
Raw Materials (A1)	5.53E-01	1.42E-09	2.93E-03	1.49E-03	1.98E-04	9.53E+00	4.23E-07		
Raw Material Transport (A2)	5.41E-02	4.48E-13	1.87E-04	4.63E-05	1.92E-05	7.61E-01	8.85E-09		
Manufacture (A3)	2.43E-01	2.22E-11	3.25E-04	5.52E-05	3.17E-05	4.12E+00	8.77E-08		
Total A1-A3:	8.50E-01	1.44E-09	3.44E-03	1.59E-03	2.48E-04	1.44E+01	5.19E-07		
Waste Transport (C2)	1.82E-03	1.50E-14	6.26E-06	1.55E-06	6.43E-07	2.55E-02	2.97E-10		
Final Disposal (C4)	6.61E-03	9.71E-14	2.83E-05	3.42E-06	2.44E-06	1.03E-01	1.47E-09		
Total Cradle-to-Gate w/Options:	8.58E-01	1.44E-09	3.47E-03	1.59E-03	2.52E-04	1.45E+01	5.21E-07		

Table 9: EIFS Mesh Results for Europe, CML Environmental Impacts



Figure 3: EIFS Mesh Results for Europe, CML Environmental Impacts





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According to ISO 14025

Resource Use

EIFS Mesh – Use of Primary Resources								
	RPR _E :	RPR _M : Renewable	NRPR _E : Non-	NRPR _M : Non-				
	Renewable	primary resources	renewable	renewable primary				
	primary energy	with energy	primary resources	resources with				
	used as energy	content used as	used as an energy	energy content used				
	carrier (fuel)	material	carrier (fuel)	as material				
	MJ	MJ	MJ	MJ				
Raw Materials (A1)	4.08E-01	5.66E-03	1.02E+01	6.15E-05				
Raw Material Transport (A2)	1.90E-02	2.49E-14	7.65E-01	1.43E-05				
Manufacture (A3)	5.05E-01	3.13E-03	4.37E+00	1.62E-05				
Total A1-A3:	9.32E-01	8.79E-03	1.53E+01	9.20E-05				
Waste Transport (C2)	6.37E-04	8.35E-16	0.025663055	4.79E-07				
Final Disposal (C4)	7.26E-03	2.03E-13	0.105991085	1.95E-06				
Total Cradle-to-Gate w/Options:	9.40E-01	8.79E-03	1.54E+01	9.44E-05				

Table 10: EIFS Mesh, Use of Primary Resources

EIFS Mesh– Use of Secondary Resources									
	SM:	RSF:	NRSF: Non-	RE:	FW: Use of net				
	Secondary	Renewable	renewable	Recovered	fresh water				
	materials	secondary fuels	secondary fuels	energy	resources				
	kg	MJ	MJ	MJ	m ³				
Raw Materials (A1)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.00E-01				
Raw Material Transport (A2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.77E-03				
Manufacture (A3)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.90E-01				
Total A1-A3:	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.91E-01				
Waste Transport (C2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.92E-05				
Final Disposal (C4)	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.10E-03				
Total Cradle-to-Gate w/Options:	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.94E-01				

Table 11: EIFS Mesh, Use of Secondary Resources





EIFS Mesh: Façade Cladding Reinforcement Mesh

Output Flows and Waste Categories

EIFS Mesh – Waste Flows							
			High level	Intermediate and			
	Hazardous waste	Non-hazardous	radioactive waste,	low level radioactive			
	disposed	waste disposed	conditioned	waste			
	kg	kg	kg	kg			
Raw Materials (A1)	1.25E-06	3.73E-02	2.97E-07	7.78E-06			
Raw Material Transport (A2)	6.25E-09	2.82E-05	2.02E-09	5.41E-08			
Manufacture (A3)	1.23E-09	2.12E-02	1.22E-07	3.16E-06			
Total A1-A3:	1.26E-06	5.85E-02	4.21E-07	1.10E-05			
Waste Transport (C2)	2.10E-10	9.47E-07	6.78E-11	1.81E-09			
Final Disposal (C4)	3.79E-10	1.51E-01	1.31E-09	3.29E-08			
Total Cradle-to-Gate w/Options:	1.26E-06	2.10E-01	4.22E-07	1.10E-05			

Table 12: EIFS Mesh, Waste Flows

EIFS Mesh – Output Material Flows							
	Components for reuse	Materials for recycling	Materials for energy recovery	Recovered energy exported			
	kg	kg	kg	kg			
Raw Materials (A1)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Raw Material Transport (A2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Manufacture (A3)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Total A1-A3:	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Waste Transport (C2)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Final Disposal (C4)	0.00E+00	0.00E+00	0.00E+00	0.00E+00			
Total Cradle-to-Gate w/Options:	0.00E+00	0.00E+00	0.00E+00	0.00E+00			

Table 13: EIFS Mesh, Output Material Flows

Biogenic Carbon

Output flows of biogenic carbon are reported if the total mass of the biogenic carbon containing materials is greater than 5%. Considering the inorganic nature of the materials used in the Saint-Gobain Adfors EIFS Mesh products, any biogenic carbon flows are assumed to be negligible and therefore not required to be reported by ISO 21930.





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

LCA Interpretation

Based on the results from the life cycle assessment, the life cycle impacts are strongly driven by the raw materials. The impacts of the raw materials are primarily attributed to the coatings applied to the fiberglass or polyester yarn, which combined account for 80% or more of the impacts in each environmental impact category. The proprietary blend coating account for the largest contributors to those impacts.

The manufacturing stage of the life cycle only accounts for up to 30% of the environmental impacts potentials; however, those impacts are strongly driven by natural gas and electricity usage. Increasing energy efficiency would help to reduce the overall environmental impacts for both sites.

LCA Development

This EPD and the corresponding LCA were prepared by Saint-Gobain Corporation North America in Malvern, Pennslyvania.





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

References

- Product Category Rules for Building-Related Product and Services: Part A Life Cycle Assessment Calculation Rules and Report Requirements, Version 3.2 2018. UL Environment
- UL General Program Rules, Version 2.4, July 2018. UL Environment
- Product Category Rule Guidance for Building-Related Products and Services: Part B Requirements on the EPD for Glass Reinforcement Mesh. Version 1.6 2017. IBU: Institut Bauen and Umwelt
- ISO 14040: 2006 Series Environmental Management-Life Cycle Assessment
- ISO 14025 Environmental labels and declarations Type III environmental declarations Principles and procedures
- ISO 14044 Environmental management Life cycle assessment Requirements and guidelines
- EN 15804 Sustainability of construction works Environmental Product Declarations Core rules for the product category of construction products
- ISO 21930: 2017 Sustainability in building construction Environmental declaration of building products
- Adfors Saint-Gobain EIFS Mesh Life Cycle Assessment Report, January 2020. Saint-Gobain North America EHS&S Department
- Adfors Website: <u>www.adfors.com/</u>





EIFS Mesh: Façade Cladding Reinforcement Mesh

According to ISO 14025

Appendix: Individual Product Results for EIFS Mesh

Standard Oracle-to-Gate w/Options Standard Mesh PM Mesh Extra Mesh Inter, Mesh Inter, Mesh Inter, Mesh Inter, Mesh High Impact Mesh PA 03 Mesh Global Warming Potential Ozone Depletion Potential Acidification Potential (kg CV-1eq) kg CO ⁺ eq 1.06-09 7.88E-01 8.61E-01 1.41E+00 1.91E+00 1.97E+00 1.80E-01 Acidification Potential Exposed kg CO ⁺ eq 4.89C+0 7.88E-02 3.32E-03 3.24E-03 3.28E-03 3.22E-03 1.41E-00 1.97E+00 1.80E-01 Acidification Potential Acidification Potential Mg 03 eq 4.03E-03 2.88E-03 2.02E-03 2.38E-02 7.88E-02 1.11E-00 1.97E+00 1.58E-01 Global Warming Potential Acidification Potential Mg 65, eq 3.32F-03 7.38E-01 8.61E-01 1.41E+00 1.91E+00 1.97E+00 1.80E-01 Acidify Cation Potential Acidify Cation Potential Mg 65, eq 3.32F-03 3.32F-03 3.32F-03 3.02E-03 3.37E-03 1.31E+00 1.91E+00 1.97E+00 1.80E-01 Acidify Cation Potential Mg 65, eq 3.32F-03 3.32F-03 3.32F-03 3.32F-03 3.37E-03 3.32F-03 3.32F-03					EIFS N	/lesh Produ	icts					
Standar Netsh Mesh Netsh Mesh					PM	Extra	Inter-	High Impact	High Impact	XP 403		
Cradie-lo-Gate v/JetworkMeshMeshMeshMeshMeshMesh 2Mesh 2Global Warning Potentialkg CO-1 = kg CO-17.96F-017.86F-016.81F-011.41F-001.91F-001.97F-001.88F-00Acidification Potentialkg CO-1 = kg CO-13.36F-033.32F-033.31F-034.01F-037.05F-039.82F-033.32F-036.00F-03Acidification Potentialkg CO-1 kg O = kg O a Acidification Potentialkg O = kg O a kg O a 				Standard	Detail	Systems	Standard	mediate	Resistant	Resistant	Fabric	
TRACI 2.1 impact Categories Global Warming Potential Acidification Potential kg CC-ci 1eq 7.96-E01 7.81E-01 7.86E-01 8.61E-01 8.1E+00 1.91E+00 1.97E+00 1.80E-01 Acidification Potential Eutrophication Potential Barbon kg CO-eq 3.36E+00 3.22E-03 2.31E+03 2.32E+03 2.31E+03 2.32E+03 2.32E+00 2.32E+00 1.32E+01 7.86E+01 8.45E+10 7.86E+02 2.78E+09 1.28E+00 1.36E+01 3.32E+03 1.32E+01 7.86E+03 8.31E+10 7.86E+03 8.31E+10 7.86E+01 8.31E+01 7.86E+03 8.31E+10 7.86E+03 8.31E+10 7.86E+03 8.31E+01 7.86E+03 8.31E+01 7.86E+03 8.31E+10 7.86E+03 8.31E+01 7.86E+03 8.31E+01 7.86E+03 8.31E+01 7.86E+03 8.31E+01	Cradle-to-Gate w/Options			Mesh	Mesh	Mesh	Mesh	Mesh	Mesh 15	Mesh 20		
Global Warming Potential kg CC2 eq 7.96E-01 7.81E-01 7.86E-01 8.81E-00 1.91E+00 1.97E+00 1.87E-09 Dizone Depiction Potential kg CC2 1:e 1.20E-09 3.28E-03 3.48E-03 4.01E-03 7.06E-03 9.28E-03 1.11E-02 6.20E-04 Eutrophication Potential kg O s eq 3.38E-03 3.28E-03 4.01E-02 7.36E-02 1.11E-01 1.16E-01 1.01E-02 Abiotic Depiction Potential kg O s eq 4.03E-02 3.98E-02 4.01E-02 7.86E-02 8.21E-01 1.51E-01 1.16E-01 1.01E-02 Abiotic Depiction Potential kg Co ² eq 7.96E-01 7.81E-01 7.86E-01 8.51E-01 7.41E-00 1.91E+00 1.97E+00 1.97E+00 1.98E-03 1.88E-01 Ozone Depiction Potential kg Ro per 3.29E-03 3.39E-03 4.00E-03 7.10E-03 9.83E-03 1.13E-02 5.35E-04 Acidification Potential kg So per 3.23E+03 3.13E+03 1.13E+02 1.35E+03 1.35E+03 1.35E+03 1.35E+01 3.35E+03 </td <td colspan="11">TRACI 2.1 Impact Categories</td>	TRACI 2.1 Impact Categories											
Ozone Depletion Potential Accidification Potential kg S0. eq 3.36E-03 1.20E-09 9.35E-10 9.30E-10 1.20E-09 3.24E-03 2.20E-03 4.00E-03 7.54E-03 3.22E-03 3.24E-03 3.24E-03 <td>Global Warming Potential</td> <td>kg CO²</td> <td>eq</td> <td>7.96E-01</td> <td>7.81E-01</td> <td>7.86E-01</td> <td>8.61E-01</td> <td>1.41E+00</td> <td>1.91E+00</td> <td>1.97E+00</td> <td>1.80E-01</td>	Global Warming Potential	kg CO ²	eq	7.96E-01	7.81E-01	7.86E-01	8.61E-01	1.41E+00	1.91E+00	1.97E+00	1.80E-01	
Acidification Potential kg S0, eq kg 03 eq 2.88E-03 3.32E-03 2.01E-03 2.01E-03 2.01E-03 2.02E-03 2.02E-03 <td>Ozone Depletion Potential</td> <td>kg CFC-1</td> <td>1 eq</td> <td>1.20E-09</td> <td>1.20E-09</td> <td>9.85E-10</td> <td>9.30E-10</td> <td>1.69E-09</td> <td>3.24E-09</td> <td>1.47E-09</td> <td>1.87E-09</td>	Ozone Depletion Potential	kg CFC-1	1 eq	1.20E-09	1.20E-09	9.85E-10	9.30E-10	1.69E-09	3.24E-09	1.47E-09	1.87E-09	
Eutrophication Potential kg 0 aq kg 0.3 eq. 4.03E-03 2.38E-03 2.31E-03 2.20E-03 4.00E-03 7.54E-03 3.23E-03 2.61E-03 Abiatic Depletion Potential kg 0.3 4.03E-00 7.38E-02 7.38E-02 7.38E-03 3.23E-03 5.18E-01 Global Warning Potential kg CO ² q 7.9E-01 1.71E+00 1.69E+00 1.76E+00 2.38E+03 4.02E+00 3.59E+00 5.18E-01 Global Warning Potential kg CO ² q 7.9E-01 1.78E+00 7.9E-01 1.47E-09 2.78E-09 1.28E-09 1.69E-09 Acid/fication Potential kg SO-q 3.29E-03 3.32E-03 3.32E-03 3.37E-03 1.37E-03 3.77E-03 1.98E-03 1.15E-03 Eutrophication Potential kg etna-eq 2.32E-04 2.38E-04 2.68E-04 6.46E-05 8.38E-03 1.35E-03 3.88E+03 1.35E-03 3.88E+03 1.35E+00 1.38E+01 3.36E+01 3.28E+04 2.88E+03 4.56E-07 4.96E-07 8.33E-07 1.24E+06 6.98E+04 6.98E+04 6.98E+04 6.98E+04	Acidification Potential	kg SO ₂	eq	3.36E-03	3.32E-03	3.43E-03	4.01E-03	7.10E-03	9.82E-03	1.11E-02	6.20E-04	
Smag Creation Potential kg 03 eq. 4.03E-02 3.98E-02 4.01E-02 4.53E-02 7.86E-02 1.11E-01 1.16E-01 1.01E-02 Abiatic Depletion Potential W 1.75E+00 1.71E+00 1.76E+00 2.88E+00 4.02E+00 3.59E+00 5.18E-01 Global Warming Potential kg R-11e 1.02E-09 1.08E-03 3.56E-03 3.39E-03 4.00E-03 7.70E-00 2.88E-03 1.18E-03 1.45E-03 7.70E-03 3.37E-03 1.38E-03 1.18E-03 3.77E-03 9.38E-03 1.18E-03 5.35E-04 Lutrophication Potential kg Phosphate 1.43E-03 1.37E-03 1.77E-03 3.77E-03 1.98E-03 1.15E-03 Song Creation Potential kg St=neq 2.32E-04 2.38E-04 2.65E-04 4.64E-04 6.54E-04	Eutrophication Potential	kg N eq		2.88E-03	2.90E-03	2.31E-03	2.20E-03	4.00E-03	7.54E-03	3.23E-03	2.61E-03	
Abiotic Depletion Potential MJ 1.75E+00 1.76E+00 1.76E+00 2.83E+00 4.02E+00 3.59E+00 5.18E+01 Global Warming Potential kg CO ² eq 7.96E+01 7.81E+01 7.86E+01 8.41E+01 1.44E+00 1.91E+00 1.97E+00 1.80E+01 Actidification Potential kg SO-2 3.29E+03 3.29E+03 3.29E+03 4.45E+03 7.97E+10 1.45E+03 7.88E+03 1.13E+02 1.80E+01 Actidification Potential kg sO+osphate 1.43E+03 1.43E+03 1.19E+03 1.17E+03 2.01E+03 3.77E+03 1.98E+03 1.15E+03 Smog Creation Potential kg ethane eq 2.32E+04 2.33E+01 1.32E+01 1.36E+01 2.22E+01 3.14E+01 2.38E+00 4.66E+05 Abiotic Depletion Potential kg sb eq 4.87E+07 4.82E+07 4.64E+07 4.96E+07 8.38E+00 1.57E+00 1.73E+00 2.98E+03 4.97E+03 Abiotic Depletion Potential kg b 0.0 7.37E+01 7.36E+01 1.23E+01 1.23E+01 1.37E+01 1.24E+06	Smog Creation Potential	kg O3 eq		4.03E-02	3.98E-02	4.01E-02	4.53E-02	7.86E-02	1.11E-01	1.16E-01	1.01E-02	
CML Impact Categories Global Warming Potential kg (2 7.86E-01 8.61E-01 1.41E-09 1.00E-09 1.00E-09 1.00E-09 1.00E-09 1.00E-09 1.08E-09 1.08E-03 1.18E-03 1.18E-03 1.18E-03 1.18E-03 1.18E-01 1.08E-01 1.08E-01 1.08E-01 1.08E-01 1.08E-01 1.08E-01 1.08E-01 1.28E+00 1.08E+00 1.08E+00 1.08E+01 1.28E+01 1.28E+01 1.28E+01 1.28E+01 1.28E+01 1.28E+01 <th co<="" td=""><td>Abiotic Depletion Potential</td><td>MJ</td><td></td><td>1.75E+00</td><td>1.71E+00</td><td>1.69E+00</td><td>1.76E+00</td><td>2.83E+00</td><td>4.02E+00</td><td>3.59E+00</td><td>5.18E-01</td></th>	<td>Abiotic Depletion Potential</td> <td>MJ</td> <td></td> <td>1.75E+00</td> <td>1.71E+00</td> <td>1.69E+00</td> <td>1.76E+00</td> <td>2.83E+00</td> <td>4.02E+00</td> <td>3.59E+00</td> <td>5.18E-01</td>	Abiotic Depletion Potential	MJ		1.75E+00	1.71E+00	1.69E+00	1.76E+00	2.83E+00	4.02E+00	3.59E+00	5.18E-01
Global Warming Potential kg CO ² eq 7.95E-01 7.81E-01 7.86E-01 8.61E-01 1.41E+00 1.91E+00 1.97E+00 1.80E-01 Ozone Depletion Potential kg S0, eq 3.22E+03 3.26E+03 3.49E-03 1.45E-03 7.97E-10 1.45E-03 9.83E-03 1.13E+02 5.35E-04 Litrophication Potential eq 1.43E-03 1.17E+03 2.10E-03 3.77E+03 1.38E+03 1.55E-03 Abiotic Depletion Potential eg 2.32E-04 2.38E+04 2.33E+04 2.65E+04 6.54E-04 6.54E+04 6.54E+04 6.54E+04 6.54E+04 6.54E+04 6.54E+04 6.38E+00 Abiotic Depletion Potential (fossil) W 1.32E+07 4.56E+07 4.56E+07 8.58E+07 1.24E+06 1.11E+06 1.54E+07 Renewable primary energy used as energy contential ed as energy contential ed as energy contential MJ 8.07E+03 7.04E+03 6.80E+03 9.81E+03 1.61E+02 8.28E+03 4.97E+03 Renewable primary resources with energy content used as material MJ 7.38E+01 1.37E+01 1.5	CML Impact Categories											
Ozono Depletion Potential kg P.11 eq kg S0_eq Acidification Potential kg S0_eq kg phosphate eq 1.32E-09 1.02E-09 3.39E-03 3.39E-03 4.00E-03 7.10E-03 2.78E-09 1.28E-09 1.58E-03 Eutrophication Potential Smog Creation Notential (fossil) kg phosphate eq 1.43E-03 1.43E-03 1.19E-03 1.17E-03 2.10E-03 3.74E-04 6.54E-04 6.54E-0	Global Warming Potential	kg CO ²	eq	7.96E-01	7.81E-01	7.86E-01	8.61E-01	1.41E+00	1.91E+00	1.97E+00	1.80E-01	
Addification Potential kg SO2 eq 3.29E-03 3.29E-03 3.19E-03 1.10E-03 7.10E-03 9.83E-03 1.13E-02 5.35E-04 Eutrophication Potential kg ethan= eq 2.32E-04 2.28E-04 2.38E-04 2.65E-04 4.64E-04 6.54E-04 6.69E-04 6.64E-05 Abiotic Depletion Potential (fossil) W 1.33E+01 1.09E+01 1.36E+01 2.22E+01 3.14E+01 2.38E+04 6.54E-04 6.54	Ozone Depletion Potential	kg R-11	eq	1.02E-09	1.03E-09	8.45E-10	7.97E-10	1.45E-09	2.78E-09	1.28E-09	1.69E-09	
kg phosphate Butrophication Potential Smag Creation Potential (getnane) 1.43E-03 1.43E-03 1.19E-03 1.17E-03 2.10E-03 3.77E-03 1.98E-03 1.15E-03 Abiotic Depletion Potential (fossil) kg etnane eq (sement) 2.32E-04 2.28E-04 2.38E-04 2.65E-04 4.64E-07 6.54E-04 6.98E-04 6.46E-05 Abiotic Depletion Potential (getment) kg Sb ev (etement) 4.87E-07 4.82E-07 4.64E-07 4.96E-07 8.53E-07 1.24E-06 1.11E-06 1.54E-07 Renewable primary resources with energy content used as material MJ 7.73E-01 7.63E-01 7.82E-01 8.47E-01 1.23E+00 1.58E+00 1.73E+00 2.91E-01 Non-renewable primary resources with energy coriter MJ 7.73E-01 7.63E-03 7.04E-03 8.91E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources with and as many and the secondary fuels MJ 7.49E-03 7.38E-03 7.14E-03 0.00E+00 0	Acidification Potential	kg SO ₂	eq	3.29E-03	3.26E-03	3.39E-03	4.00E-03	7.10E-03	9.83E-03	1.13E-02	5.35E-04	
Eutrophication Potential Smog Creation Potential (fossil) issue eq 2.32E-04 2.28E-04 2.38E-04 2.65E-04 4.64E-04 6.54E-04 6.98E-04 6.46E-07 Abiotic Depletion Potential (fossil) NJ 1.33E+01 1.30E+01 1.29E+01 1.36E+01 2.22E+01 3.14E+01 2.89E+01 3.88E+00 Abiotic Depletion Potential (fossil) kg bs eq 4.87E-07 4.62E-07 4.64E-07 8.53E+07 1.24E+06 1.11E+06 1.54E+07 Renewable primary energy used as energy corrier MJ 7.73E-01 7.63E+01 7.04E-03 6.80E-03 9.81E+03 1.61E+02 8.28E+03 4.97E-03 Non-renewable primary resources with energy corrier MJ 8.07E+03 7.04E+03 6.80E+03 9.81E+03 1.61E+02 8.28E+03 4.97E-03 Non-renewable primary resources with energy corrier MJ 7.49E+05 7.30E+05 7.53E+05 8.71E+05 1.52E+04 2.42E+04 2.38E+04 6.36E+00 Non-renewable primary resources with energy corrier MJ 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.		kg phosp	hate	1.43E-03	1.43E-03	1.19E-03	1.17E-03	2.10E-03	3.77E-03	1.98E-03	1.15E-03	
Sing Creation Potential Kg ethale eq (1.52E-04) 2.52E-04 (1.55E-04) 2.55E-04 (1.55E-04) 2.54E-04 (1.55E-04) 5.54E-04 (1.55E-04) 5.54E-04 (1.55E-0	Eutrophication Potential	eq		2 225 04	2 205 04	0.005.04	2.655.04		6 5 4 5 0 4	6.005.04	C 465 05	
Abiotic Depletion Potential (fossil) MJ 1.33E+01 1.30E+01 1.29E+01 1.36E+01 2.22E+01 3.14E+01 2.38E+01 3.88E+00 Abiotic Depletion Potential (element) kg Sb eq (element) 4.87E-07 4.82E-07 4.64E-07 4.96E-07 8.53E-07 1.24E-06 1.11E-06 1.54E-07 Renewable primary energy used as energy carrier MJ 7.73E-01 7.63E-01 7.82E-01 8.47E-01 1.23E+00 1.58E+00 1.73E+00 2.91E-01 Renewable primary resources with energy carrier MJ 8.04E-03 8.07E-03 6.80E-03 9.81E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources with energy content used as material MJ 7.49E-05 7.30E-05 7.63E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Secondary materials kg 0.00E+00	Smog Creation Potential	kg ethan	e eq	2.32E-04	2.28E-04	2.33E-04	2.65E-04	4.64E-04	6.54E-04	6.98E-04	6.46E-05	
Abiotic Depletion Potential (element) kg Sb eq A 4.87E-07 4.82E-07 4.64E-07 4.96E-07 8.53E-07 1.24E-06 1.11E-06 1.54E-07 Renewable primary energy used as energy content used as material MJ 7.73E-01 7.63E-01 7.82E-01 8.47E-01 1.23E+00 1.58E+00 1.73E+00 2.91E-01 Renewable primary resources with energy content used as material MJ 8.04E-03 8.07E-03 7.04E-03 6.80E-03 9.81E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources with energy content used as material MJ 7.49E-05 7.30E-05 7.53E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 energy content used as material MJ 0.00E+00 0.	Abiotic Depletion Potential (fossil)	MJ	MJ		1.30E+01	1.29E+01	1.36E+01	2.22E+01	3.14E+01	2.89E+01	3.88E+00	
(element)Image in the second arry second arry fuelsImage in the second arry fuelsImage in t	Abiotic Depletion Potential	kg Sb eq		4.87E-07	4.82E-07	4.64E-07	4.96E-07	8.53E-07	1.24E-06	1.11E-06	1.54E-07	
Use of Primary Resources Renewable primary energy used as energy carrier MJ 7.73E-01 7.63E-01 7.82E-01 8.47E-01 1.23E+00 1.58E+00 1.78E+00 2.91E-01 Renewable primary resources with energy corrier MJ 8.04E-03 8.07E-03 6.80E-03 9.81E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources used as an energi corrier MJ 1.41E+01 1.38E+01 1.37E+01 1.45E+01 2.37E+01 3.34E+01 3.13E+01 4.18E+00 Non-renewable primary resources used as an anterial MJ 7.49E-05 7.30E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Secondary materials Mg 0.00E+00 0.00E+0	(element)											
Renewable primary energy used as energy carrier MJ 7.73E-01 7.63E-01 7.82E-01 8.47E-01 1.23E+00 1.58E+00 1.73E+00 2.91E-01 Renewable primary resources with energy content used as material MJ 8.04E-03 8.07E-03 7.04E-03 6.80E-03 9.81E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources used as an energy carrier MJ 1.41E+01 1.38E+01 1.37E+01 1.45E+01 2.37E+01 3.34E+01 3.13E+01 4.18E+00 Non-renewable primary resources with energy carrier MJ 7.49E-05 7.30E-05 7.63E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Non-renewable secondary fuels MJ 0.00E+00 0			1	1	Use of P	rimary Resou	irces	1		1	1	
Renewable primary resources with energy content used as material MJ 8.04E-03 8.07E-03 6.80E-03 9.81E-03 1.61E-02 8.28E-03 4.97E-03 Non-renewable primary resources used as an energy corrier MJ 1.41E+01 1.38E+01 1.43FE+01 2.37E+01 3.34E+01 3.13E+01 4.18E+00 Non-renewable primary resources with energy content used as material MJ 7.49E-05 7.63E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Secondary materials Kg 0.00E+00	Renewable primary energy used carrier	as energy	MJ	7.73E-01	7.63E-01	7.82E-01	8.47E-01	1.23E+00	1.58E+00	1.73E+00	2.91E-01	
Non-renewable primary resources used as an energy carrier MJ 1.41E+01 1.38E+01 1.37E+01 1.45E+01 2.37E+01 3.34E+01 3.13E+01 4.18E+00 Non-renewable primary resources with energy content used as material MJ 7.49E-05 7.30E-05 7.63E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Secondary materials kg 0.00E+00 0.00E+00 <td>Renewable primary resources wi content used as materia</td> <td>th energy I</td> <td>MJ</td> <td>8.04E-03</td> <td>8.07E-03</td> <td>7.04E-03</td> <td>6.80E-03</td> <td>9.81E-03</td> <td>1.61E-02</td> <td>8.28E-03</td> <td>4.97E-03</td>	Renewable primary resources wi content used as materia	th energy I	MJ	8.04E-03	8.07E-03	7.04E-03	6.80E-03	9.81E-03	1.61E-02	8.28E-03	4.97E-03	
Non-renewable primary resources with energy content used as material MJ 7.49E-05 7.30E-05 7.63E-05 8.71E-05 1.52E-04 2.42E-04 2.38E-04 3.62E-05 Use of Secondary materials kg 0.00E+00 0.	Non-renewable primary resources energy carrier	used as an MJ		1.41E+01	1.38E+01	1.37E+01	1.45E+01	2.37E+01	3.34E+01	3.13E+01	4.18E+00	
Use of Secondary Resources Secondary materials kg 0.00E+00	Non-renewable primary resour eneray content used as mat	urces with MJ		7.49E-05	7.30E-05	7.63E-05	8.71E-05	1.52E-04	2.42E-04	2.38E-04	3.62E-05	
Secondary materials kg 0.00E+00					Use of Se	condary Reso	ources	1		I	1	
Renewable secondary fuels MJ 0.00E+00 0.00E+00 </td <td colspan="2">Secondary materials k</td> <td>kg</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td>	Secondary materials k		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Non-renewable secondary fuels MJ 0.00E+00 0.00E+	Renewable secondary fuels		MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Recovered energy MJ 0.00E+00	Non-renewable secondary	fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Use of net fresh water resources m³ 6.14E-01 6.11E-01 5.95E-01 6.13E-01 8.22E-01 1.09E+00 9.70E-01 2.52E-01 Hazardous waste disposed kg 2.49E-08 1.13E-08 1.18E-08 1.39E-08 2.48E-08 3.43E-08 3.98E-08 3.51E-06 Non-hazardous waste disposed kg 1.94E-01 1.94E-01 2.10E-01 2.63E-01 4.80E-01 6.57E-01 8.68E-01 4.25E-02 High level radioactive waste kg 3.63E-07 3.55E-07 3.75E-07 4.26E-07 7.01E-07 9.37E-07 1.09E-06 1.28E-07 Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Components for reuse kg 0.00E+00	Recovered energy	-	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Waste Flows Hazardous waste disposed kg 2.49E-08 1.13E-08 1.39E-08 2.48E-08 3.43E-08 3.98E-08 3.51E-06 Non-hazardous waste disposed kg 1.94E-01 1.94E-01 2.10E-01 2.63E-01 4.80E-01 6.57E-01 8.68E-01 4.25E-02 High level radioactive waste kg 3.63E-07 3.55E-07 3.75E-07 4.26E-07 7.01E-07 9.37E-07 1.09E-06 1.28E-07 Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Output Material Flows Components for reuse kg 0.00E+00 0	Use of net fresh water resources m ³		m ³	6.14E-01	6.11E-01	5.95E-01	6.13E-01	8.22E-01	1.09E+00	9.70E-01	2.52E-01	
Hazardous waste disposed kg 2.49E-08 1.13E-08 1.38E-08 2.48E-08 3.43E-08 3.98E-08 3.51E-06 Non-hazardous waste disposed kg 1.94E-01 1.94E-01 2.10E-01 2.63E-01 4.80E-01 6.57E-01 8.68E-01 4.25E-02 High level radioactive waste kg 3.63E-07 3.55E-07 3.75E-07 4.26E-07 7.01E-07 9.37E-07 1.09E-06 1.28E-07 Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Components for reuse kg 0.00E+00 0	Waste Flows											
Non-hazardous waste disposed kg 1.94E-01 1.94E-01 2.10E-01 2.63E-01 4.80E-01 6.57E-01 8.68E-01 4.25E-02 High level radioactive waste kg 3.63E-07 3.55E-07 3.75E-07 4.26E-07 7.01E-07 9.37E-07 1.09E-06 1.28E-07 Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Components for reuse wg 0.00E+00	Hazardous waste disposed kg		kg	2.49E-08	1.13E-08	1.18E-08	1.39E-08	2.48E-08	3.43E-08	3.98E-08	3.51E-06	
High level radioactive waste kg 3.63E-07 3.55E-07 3.75E-07 7.01E-07 9.37E-07 1.09E-06 1.28E-07 Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Components for reuse kg 0.00E+00 0.00E+00 <td< td=""><td colspan="2">Non-hazardous waste disposed kg</td><td>kg</td><td>1.94E-01</td><td>1.94E-01</td><td>2.10E-01</td><td>2.63E-01</td><td>4.80E-01</td><td>6.57E-01</td><td>8.68E-01</td><td>4.25E-02</td></td<>	Non-hazardous waste disposed kg		kg	1.94E-01	1.94E-01	2.10E-01	2.63E-01	4.80E-01	6.57E-01	8.68E-01	4.25E-02	
Intermediate and low level radioactive waste kg 9.68E-06 9.47E-06 1.00E-05 1.14E-05 1.88E-05 2.52E-05 2.94E-05 2.76E-06 Output Material Flow Components for reuse kg 0.00E+00	High level radioactive waste kg		kg	3.63E-07	3.55E-07	3.75E-07	4.26E-07	7.01E-07	9.37E-07	1.09E-06	1.28E-07	
Output Material Flows Components for reuse kg 0.00E+00 <	Intermediate and low level radioactive waste k		kg	9.68E-06	9.47E-06	1.00E-05	1.14E-05	1.88E-05	2.52E-05	2.94E-05	2.76E-06	
Components for reuse kg 0.00E+00	Output Material Flows											
Materials for recycling kg 0.00E+00 0.00E+00 <td colspan="2">Components for reuse kg</td> <td>kg</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td>	Components for reuse kg		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Materials for energy recovery kg 0.00E+00 0.00E+	Materials for recycling k		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Recovered energy exported kg 0.00E+00 0.00E+00 </td <td colspan="2">Materials for energy recovery kg</td> <td>kg</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td> <td>0.00E+00</td>	Materials for energy recovery kg		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
	Recovered energy exported kg		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

 Table 14: APP-Modified Asphalt Base and Cap Sheets Individual Results

