

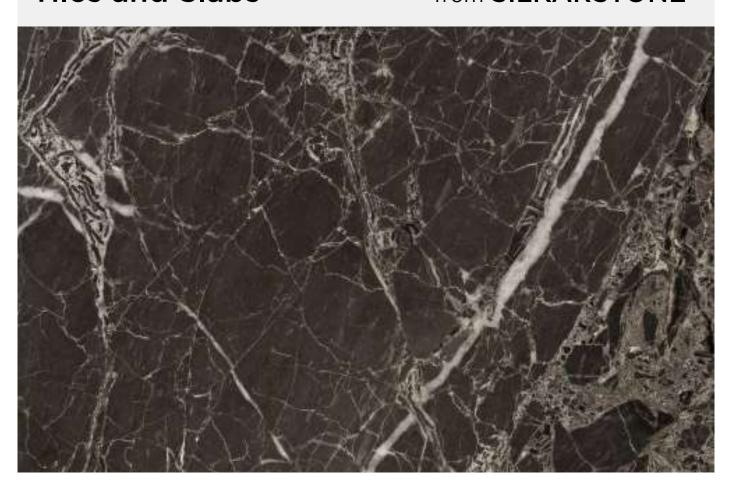


ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 and EN 15804:2012+A2:2019 for

10 mm Reinforced Tiles and Slabs

from **SILKARSTONE**







Programme:	EPD Turkey, a fully aligned regional programme www.epdturkey.org	The International EPD® System www.environdec.com
Programme operator:	EPD Turkey: SÜRATAM - Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15 34415 Kagıthane/Istanbul, TURKEY	EPD International AB
EPD registration number:	S-P-01975	
Publication date:	11.11.2020	
Validity date:	10.11.2025	
Revision date:	01.09.2021	
Revision version:	1.1	
Geographical scope:	Global	



Owner of the EPD:

Silkar Madencilik San. ve Tic. A.S. Silkar Plaza Orta Mahalle Topkapı Maltepe Cad. N0:6 Bayrampaşa/Istanbul, Turkey

^{*}Product name and brand name changed from earlier version to version 1.1 along with minor editorial changes.

LSP - X

10 mm REINFORCED TILES and SLABS



Laminated Stone Panels

WHEN WEIGHT MATTERS

Programme Information

Programme

EPD Turkey, a fully aligned regional programme

SÜRATAM - Turkish Centre for Sustainable Production Research & Design Nef 09 B Blok No:7/15 34415 Kağıthane/Istanbul, TURKEY

> www.epdturkey.org info@epdturkey.org

The International EPD® System

EPD International AB Box 210 60 SE-100 31 Stockholm Sweden

www.environdec.com info@environdec.com

Product Category Rules (PCR): 2019:14 Version 1.0, 2019-12-20, Construction Products and CPC 54 Construction Services, EN 15804:2012 + A2:2019 Sustainability of Construction Works

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

EPD process certification

EPD verification (



Third party verifier: Vladimír Kočí, PhD

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

Yes

No



The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

About Company

At SilkarStone, we are proud to be a leading stone manufacturer, producing a variety of natural stone, mosaics, slabs, and tiles, and exporting product to over 35 countries across the globe.

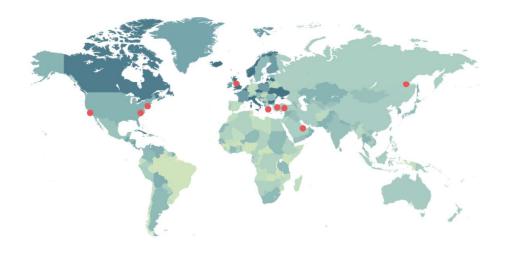
Our company was established over thirty years ago, owns multiple quarries in Turkey and Greece, and two factories in Turkey. This vertical integration allows product quality to be controlled from start to finish while providing unparalleled service to clients planning complex architectural projects. With showrooms in London and Istanbul, as well as a joint venture in Qatar, China and the United States, we are able to assist with projects all over the world, providing quality custom products for large-scale bespoke projects.

Through our sister company AKDO Intertrade, exclusive products are distributed to more than 350 dealers under the "AKDO" brand in the luxury tile and stone market of the United States.

Silkar is one of the largest mosaic manufacturers in the world, with exclusive designs and an impressive palette of natural stone colors. Our ability to produce incredible details custom mosaics and exclusive mosaic tiles make Silkar a unique company in the design world.

In addition to offering slabs, mosaics, and cut-to-size tile, we continually invest in innovation beyond traditional stone product. Because of investments in new technologies such as lightweight laminated stone panels, Silkar has experienced great success within industries such as luxury yachting, furniture, interior, and exterior wall cladding, and more.

After working with mother nature's product for so long, we respect the earth and green movements. To date. Silkar continues to set standards in the natural stone industry with sustainable manufacturing. As a result of EPD (environmental product deceleration) calculated studies. we have environmental impact within the complete life cycle for nine products according to ISO 14044 standard and published third-party approved statements. Silkar has EN ISO 9001 Quality Management System, EN ISO 14001 Environmental Management System and ISO 45001 Occupational Health & Safety Management System Certifications. We hope to be your solution partner in the natural stone business. Allow us to show you why SilkarStone has become an international leader in the natural stone industry.



Product Information

SILKAR reveals its larger revolution in natural stone: Reinforced Tiles and Slabs (LSP - X). It is larger, yet lighter and thinner. Therefore, it is easy to transport, installed and it is light weight! It has a thickness of a 10 mm in a panel dimensions which would normally require 20-20 mm thickness.

LSP - X is made from a natural stone with a density of 2. 7 tons/ m^3 . Weighing in 27 kg in 10 mm thickness, LSP - X is supported by 13% backing material with 4% glue by weight.

The UN CPC code of the product is 3761.





27 kg/m²

Installation



Adhesion; Cement, Epoxy, Silicone

Thickness



10 mm

Finish



Polished / Honed / Brushed / Sandblasted / Sandblasted & Brushed

Dimensions



MAX 1800x3000 mm

Technical Properties

	Value	Test Standards
Modulus of Rupture (N/mm²)	43.7	ISO 10545-4
Breaking Load (N)	4709	ISO 10545-4
Breaking Strength (N/mm²)	4394	ISO 10545-4
Slip Resistance (Sandblasted)	R13	DIN 51130
Slip Resistance (Sandblasted)	С	DIN 51097
Reaction to Fire	B - s1 d0	EN 13501
Rupture energy (Joule)	>53	EN 14158
Impact Resistance	Class 1- No Damage	ISO 7892
Tensile Adhesion Strength for Adhesive (N/mm²)	>1	EN 12004
Bond Strength	190 psi	ASTM C 482
Flexural Strength - Dry	9440 psi	ASTM C 880
Flexural Strength - Wet	5477 psi	ASTM C 880
Freeze Thaw (Mass Chancing)	%0.21	ASTM C 660

COLOR OPTIONS

Customize your Laminated Stone Panels with our largeselection of premium natural stones.

Astra White Astra White Venato Athens Gray Brown Queen Café Latte Dark Calacatta Calacatta Helena Carrara Castano Brown Coastal Gray Crema Alexandra Crema Cornucopia Dark Olive Emperador Dark **Ephesus Dune** Granville Beige Lilac Maya White Nero Marquina New Luget Oro Gray Oro White Savana Gray Silver Gray Silver Stone Silver Wood Terra Gray Vega Light Waving Wood

LCA Information

Declared Unit	1 m² LSP - X with 10 mm in thickness and a weight of 27 kg.
Time Representativeness	2019
Database(s) and LCA Software Used	TLCID ver. 1.0 (Turkish Lifecycle Inventory Database), Ecoinvent 3.6, SimaPro 9.1

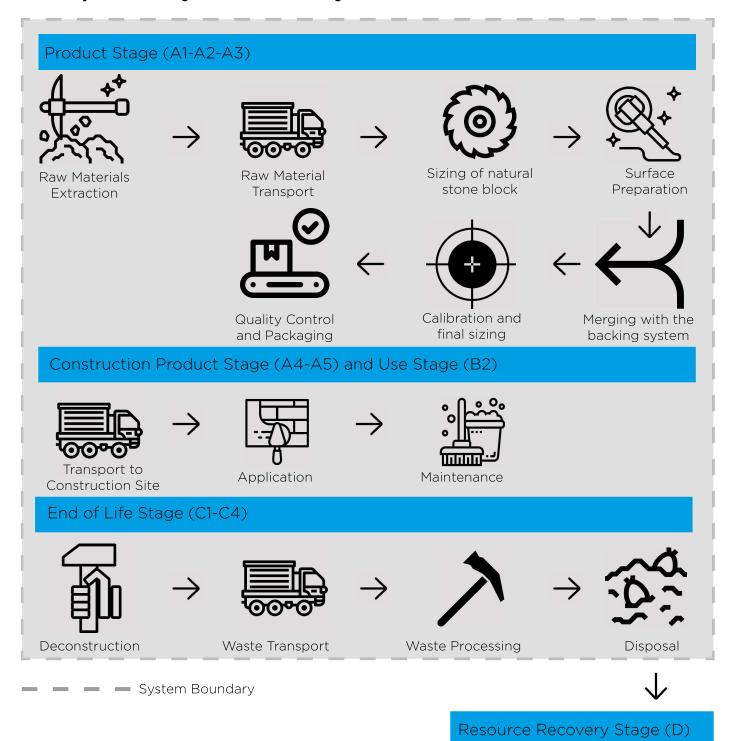
The inventory for the LCA study is based on the 2019 production figures for LSP - X by SILKARSTONE production plants in Bilecik, Turkey.

This EPD's system boundary is cradle to grave. The system boundary covers A1 - A3 product stages, A4 - A5 construction, B1 - B7 use and C1 - C4 end of life and D stages.

Upstream		9 9							Downstream							Other Environmental Information
Raw Material Supply	Transport	Manufacturing	Transport	Construction Installation	əsn	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction, demolition	Transport	Waste Processing	Disposal	Future reuse, recycling or energy recovery potentials
A1	A2	А3	Α4	A5	B1	B2	В3	В4	B5	В6	В7	C1	C2	C3	C4	D
X	Χ	X	Χ	X	Χ	X	X	Χ	Χ	X	Χ	Χ	Χ	Χ	X	X

X = Included in LCA

Description of System Boundary



Excluded Lifecycle Stages: Travel to and from work by personnel, business travel, etc. are excluded life cycle stages.

A1: Raw Material Supply

SILKARSTONE's productions start from mining. The company supplies its raw materials necessary from its mine sites or other mines. Raw material supply includes raw material extraction/preparation and pre-treatment processes before production.

A2: Transportation

Transport is relevant for delivery of raw materials and other materials to the plant and the transport of materials within the plant. Transport of raw materials to production site is taken as the weight average values for transport from raw materials supplier in 2019.

A3: Manufacturing

Manufacturing starts with the selection of the blocks suitable for the products. After reinforcing the block, the block is sliced and dried. Production continues with the slab epoxy process for adding more durability. After surface preparation, a structure backing system is mounted on a natural stone slab. Finally, the product is calibrated and prepare the surface and now it is ready as slabs or cut to final size. Final products are quality checked and package to delivery.

A4: Transport From the Gate to the Site

Transport of final product to construction site is taken as the weight average values for transport to customers in 2019.

Scenario Information	Value (expressed per functional/declared unit)
Vehicle Type	Road, Lorry, >32 metric ton, Euro 5 Motor Sea, Container Ship
Data Type	Related transport data from Ecoivent 3.6
Distance to Construction Site	878 km weighted average by lorry to all markets 2664 km weighted average by ship to all markets
Bulk Density of Transported Products	2700 kg/m³

A5: Assembly

This stage includes the LSP - X application on the construction site. There is no energy use during installation, manpower is sufficient. For the installation of LSP - X to the surface, $6-7 \text{ kg/m}^2$ cement based adhesive mortar is used according to the product technical datasheet.

Scenario Information	Value (expressed per functional/declared unit)
Ancillary Materials for Installation	6-7 kg/m² cement based adhesive mortar
Water Use	included in the mortar 0.00065 m³ water
Other Resource Use	Not necassary
Quantitative description of energy type (regional mix) and consumption during the installation process	Not necassary

B1: Use Stage is related to any impacts done during use of the product.

B2: Maintenance

This stage is related to any activities to maintain the function of the product in its life time. It includes cleaning with water and detergent. SILKARSTONE recommends to use detergent containing stain remover or neutral low-sulphate and rinse with tap water after cleaning.

Monthly for about 50 years, 5 gr detergent and 0.1 L water use are assumed to clean the surfaces of natural stone products.

Scenario Information	Value (expressed per functional/declared unit)
Maintenance Process	Cleaning the surface of product
Maintenance Cycle	Monthly during 50 years (600 times)
Ancillary Materials for Maintenance	3 kg during whole cycle
Net Fresh Water Consumption	0.012 m ³
Energy Input During Maintenance	Not necassary

B3: Repair is not necessary in use.

B4 : Replacement is not necessary in use.

B5: **Refurbishment** is not necessary in use

B6: Operational Energy Use

No energy is used in operation.

B7: Operational Water Use

No water is used in operation.

C1: Deconstruction and Demolition

There is no energy use during uninstallation. manpower and some tools are sufficient.

C2: Transport

This stage includes the transportation of the discarded conductors to final disposal. Average distance from demolition site to waste processing site for final disposal is assumed to be 100 km.

C3: Waste Processing

If the wastes are going to landfill or to be inert filler, there is no need for any waste process.

C4: Disposal

Disposal is the final stage of product life. LSP-X may dispose with any disposal scenario after construction and demolition as their final fate and modelled as such for this EPD. It is assumed that 25% of the wastes used as inert filler, 75% of the wastes send to the inert landfill site.

D: Benefits and Loads

In this stage, inert filler benefits were calculated specified in the disposal stage.

More Information

per EPD requirement are given in the LCA result waste amounts were also allocated from 2019 tables. All energy calculations were obtained total waste arisings. The natural stone sector has using Cumulative Energy Demand (LHV) a high amount of production wastage due to its methodology, while fresh water use is calculated nature. All production wastage is included in with selected inventory flows in SimaPro the LCA model. Wastes arising from production according to the PCR.

There are no co-products in the production. Hence, there is no need for co-product allocation. No substances included in the Candidate

products was presented.

The results of the LCA with the indicators as Accordingly, hazardous and non-hazardous are disposed in accordance with regional legal regulations and sent to inert waste sites.

List of Substances of Very High Concern for Energy consumptions and transports datasets authorization under the REACH regulations are were allocated based on the production present in SILKARSTONE's products, either figures in 2019 and the weighted averaged of above the threshold for registration with the environmental impacts for the SILKARSTONE's European Chemicals Agency or above 0.1% (wt/ wt).



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Impact Category	Unit	Α1	A2	A3	A1-A3	А4	A5	B1	B2	B3	B4	B5	B6	B7	Cl	C2	C3	C4	Q
GWP - Fossil	kg CO_2 eq	10.0	1.80	5.41	17.2	2.41	1.68	0	2.98	0	0	0	0	0	0	0.209	0	0.121	-0.216
GWP - Biogenic	$kg\ {\rm CO}_2\ {\rm eq}$	42.1E-3	771E-6	-2.12E+0	-2.07	1.16E-3	29.0E-3	0	-6.95	0	0	0	0	0	0	152E-6	0	240E-6	-172E-6
GWP - Luluc	$kg CO_2 eq$	10.9E-3	9-3189	40.5E-3	0.052	9-3526	770E-6	0	4.29E+0	0	0	0	0	0	0	61.0E-6	0	33.8E-6	-124E-6
GWP - Total	kg CO ₂ eq	10.1	1.81	3.33	15.2	2.41	1.71	0	0.322	0	0	0	0	0	0	0.209	0	0.121	-0.216
ODP	kg CFC-11 eq	1.69E-6	406E-9	298E-9	2.39E-6	547E-9	105E-9	0	496E-9	0	0	0	0	0	0	49.1E-9	0	49.9E-9	-41.9E-9
AP	mol H+ eq	0.059	0.022	0.029	0.110	0.026	0.007	0	0.041	0	0	0	0	0	0	0.001	0	0.001	-0.002
EP - Freshwater	kg PO ₄ eq	3.53E-3	108E-6	4.10E-3	0.008	153E-6	261E-6	0	1.27E-3	0	0	0	0	0	0	14.8E-6	0	12.4E-6	-31.9E-6
EP - Marine	kg N eq	0.013	900.0	900.0	0.024	0.007	0.002	0	0 0 0 4 0	0	0	0	0	0	0	0.0003	0	0.000	-0.001
EP - Terrestrial	ba N lom	235	19.8	87.5	342	27.5	31.0	0	368	0	0	0	0	0	0	2.59	0	2.20	-3.20
POCP	kg NMVOC	0.042	0.018	0.015	0.075	0.022	0.005	0	0.019	0	0	0	0	0	0	0.001	0	0.001	-0.002
ADPE	bə qs бү	260E-6	24.1E-6	17.1E-6	302E-6	35.6E-6	109E-6	0	204E-6	0	0	0	0	0	0	3.57E-6	0	1.11E-6	-5.21E-6
ADPF	ſΜ	162	26.5	66.1	254	35.9	11.6	0	31.4	0	0	0	0	0	0	3.25	0	3.39	-3.07
WDP	m³ depriv.	4.87	0.072	4.82	92.6	0.104	0.175	0	11.6	0	0	0	0	0	0	0.011	0	0.152	-0.267
PΜ	disease inc.	1.50E-6	162E-9	175E-9	1.84E-6	184E-9	75.4E-9	0	605E-9	0	0	0	0	0	0	18.9E-9	0	22.3E-9	-20.5E-9
IR	kBq U-235 eq	111	0.131	0.123	1.37	0.179	0.064	0	0.195	0	0	0	0	0	0	0.017	0	0.015	-0.016
ETP - FW	CTUe	235	19.8	87.5	342	27.5	31.0	0	368	0	0	0	0	0	0	2.59	0	2.20	-3.20
HTTP - C	UT2	9.69E-9	670E-12	2.31E-9	12.7E-9	887E-12	521E-12	0	10.2E-9	0	0	0	0	0	0	63.8E-12	0	50.8E-12	-157E-12
HTTP - NC	CTUh	283E-9	21.0E-9	49.4E-9	354E-9	29.7E-9	15.6E-9	0	249E-9	0	0	0	0	0	0	2.95E-9	0	1.57E-9	-3.28E-9
SQP	1d	28.2	22.4	205	255	33.7	19.2	0	321	0	0	0	0	0	0	3.72	0	710	-6.51
Acronyms	GWP-total: Climate change, GWP-fossil: Climate change- fossil, GWP-biogenic: Climate change - biogenic, GWP-luluc: Climate change - land use and transformation, ODP: Ozone layer depletion, AP: Acidification terrestrial and freshwater, EP-freshwater: Eutrophication freshwater, EP-marine: Eutrophication marine, EP-terrestrial: Eutrophication, ADP: ADPE: Abiotic depletion - elements, ADPF: Abiotic depletion - fossil resources, WDP: Water scarcity, PM: Respiratory inorganics - particulate matter, IR: Ionising radiation, ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human health effects, SQP: Land use related impacts, soil quality.	nate chang yer depleti terrestrial, rganics - p	ge, GWP-foon, AP: Aoporp. Procp. Procp. Procp. particulate use relate	ossil: Climat cidification lotochemic matter, IR: d impacts, a	e change terrestria al oxidatio Ionising r	- fossil, GW and fresh on, ADPE: , adiation, E	/P-biogenic: water, EP-fre Abiotic deple TP-FW: Eco	c: Clin freshv oletior cotoxi	enic: Climate change - biogenic, GWP-Iuluc: P-freshwater: Eutrophication freshwater, EF depletion - elements, ADPF: Abiotic depleti Ecotoxicity freshwater, HTP-c: Cancer hun	ye - bi <mark>.</mark> ophica ts, AD ⁄ater, H	ogeni ation PF: A HTP-c	c, GW freshw biotic : Can	P-Iulu 'ater, deple cer hu	c: Clir EP-m etion - uman	nate c arine: fossil health	thange - Iar Eutrophica I resources I effects, H	nd use ition r , WDF	e and tran: marine, EP P: Water so :: Non-car	WP-biogenic: Climate change - biogenic, GWP-Iuluc: Climate change - land use and transformation, nwater, EP-freshwater. Eutrophication freshwater, EP-marine: Eutrophication marine, EP-terrestrial: Abiotic depletion - elements, ADPF: Abiotic depletion - fossil resources, WDP: Water scarcity, PM: ETP-FW: Ecotoxicity freshwater, HTP-c: Cancer human health effects, HTP-nc: Non-cancer human
Legend	A1: Raw Material Supply, A2: Transport, A3: Manufacturing, A1-A3: Transport, C3: Waste Processing, C4: Disposal, D: Benefits and Loads	al Supply, Naste Proc	A2: Transp sessing, C ²	oort, A3: N I: Disposal,	1anufactu D: Benefit	A1-A d Load	.3: Sum of A1, ds Beyond the	A1, A the Sy	Sum of A1, A2, and A3, A4: 1 Beyond the System Boundary.	A4: 7	ransp	A4: Transport to idary.	Site,		nstalla	A5: Installation, C1: De-Construction,	e-Cor	nstruction,	C2: Waste
Disclaimer 1	This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.	egory deal r accidents constructi	s mainly w s, occupat on materia	vith the eve ional expos als is also n	ntual impa ure nor du ot measur	act of low c Le to radios ed by this	dose ionizir active wast indicator.	ng rad se disp	liation on h oosa <mark>l in</mark> un	uman dergro	healt ound f	n of th acilitie	e nuc ss. Pot	lear fu ential	uel cyc ionizi	ile. It does ing radiatio	not ca In fron	onsider eff n the soil,	ects due to from radon
Disclaimer 2	The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.	his enviror	nmental in	npact indic	ator shall	w pesn eq	ith care as	the u	uncertainti	es on	these	resul	s are	high	or as	there is lim	nited (experience	ed with the

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Impact Category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	5	C2	C3	C4	
PERE	ſM	10.2	0.285	37.7	48.2	0.409	1.25	0	61.2	0	0	0	0	0	0	0.041	0	0.027	-0.063
PERM	ſχ	0	0	0	0.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERT	ſΜ	10.2	0.285	37.7	48.2	0.409	1.25	0	61.2	0	0	0	0	0	0	0.041	0	0.027	-0.063
PENRE	ſΜ	162	26.5	66.1	254	35.9	11.6	0	37.4	0	0	0	0	0	0	3.25	0	3.39	-3.07
PENRM	ſΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PENRT	ſΜ	162	× 26.5	66.1	254	35.9	11.6	0	37.4	0	0	0	0	0	0	3.25	0	3.39	-3.07
SM	K	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	ſΜ	. 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 ,	0	0	0
NRSF	ſΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m ³	0.182	0.005	0.087	0.274	0.007	0.034	0	0.881	0	0	0	0	0	0	0.001	0	0.004	-0.020
					Waste	& Outpi	ut Flows for 1 m^2	or 1 n	η² of LSP	X - 0									
Impact Category	Unit	A1	A2	A3	A1-A3	Α4	A5	B1	B2	B3	B4	B5	B6	B7	D D	C2	C3	O4	Ω
HWD	kg	0	0	0.011	0.011	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NHWD	kg	0	0	26.6	26.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RWD	A Q	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 -	0	0	0
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	X Ø	0	0	0	0	0	% O	0	0	0	0	0	0	0	0	0	0	0	0
MER	Kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EE (Electrical)	ſΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EE (Thermal)	ſW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Acronyms	PERE: Use of renewable primary energy excluding resources used as raw materials, PERM: Use of renewable primary penergy resources used as raw materials, PENRM: Use of non-renewable primary primary energy excluding resources used as raw materials, PENRM: Use of non-renewable primary energy, SM: Secondary material, RSF: Renewable secondary fuels, NRSF: Non-renewable primary energy, SM: Secondary material, RSF: Renewable secondary fuels, FW: Net use of fresh water, HWD: Hazardous waste disposed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposed, CRU: Components for reuse, MFR: Material for recycling, MER: Materials for energy recovery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy.	enewable perional properties as used as undary fuel nts for reu	orimary envansy envansy envansy envergers envansy energers, sa, FW: Netse, MFR: Merse, MFR: M	ergy exclury, PENRE: rials, PENR use of fresaterial for raterial for r	ding resor Use of no XT: Total u sh water, h	rces used n-renewabl se of non-r tWD: Haza MER: Mater	as raw materials, e primary energy renewable primar rdous waste dispo	terials, energy primal se disp	PERM: U 'excluding ry energy, osed, NH'	se of range	enewa irces u econc on-ha; trical)	ible prised as	imary raw r ateria Is was	energ naterik I, RSF: te disp	yy resonals, PE Rene posed	ources us INRM: Use INRM: Ese INRMD: R. INRMD: R.	ed as e of nor condar adioac	PERM: Use of renewable primary energy resources used as raw materials, excluding resources used as raw materials, PENRM: Use of non-renewable pry energy, SM: Secondary material, RSF: Renewable secondary fuels, NRSF. Ssed, NHWD: Non-hazardous waste disposed, RWD: Radioactive waste disposery, EE (Electrical): Exported energy electrical, EE (Thermal): Exported energy electrical.	ials, PERT: le primary RSF: Non- disposed, ed energy,
Result per fur	Result per functional declared unit	ed unit																	
Biogenic Carbon Content	oon Content							Unit								A1-A3			

Biogenic carbon content in productkg Ckg C0Biogenic carbon content in packagingkg C0.5	Biogenic Carbon Content	Unit	A1-A3
Biogenic carbon content in packaging	Biogenic car <mark>b</mark> on content in product	kg C	0
	Biogenic carbon content in packaging	kg C	0.5

Note: It was assumed 50% of the wood packaging material is biogenic carbon.

Additional Information

For the American market, environmental impacts were calculated with the TRACI 2.1 method as additional information. The results of the calculations taken with the same LCA model are given in the table below.

			Env	ironmental	Environmental Impacts for 1 m^2 of LSP – X	$^{\prime}$ 1 m 2 of LS	Ь - Х				
Impact Category	Unit	Α1	A2	A3	A1-A3	А4	A5	B2	C2	C4	D
GWP	kg ${\sf CO}_2$ ed	9.71	1.79	5.33	16.8	2.39	1.68	717	0.207	0.118	-0.213
ODP	kg CFC-11 eq	1.82E-6	429E-9	340E-9	2.59E-6	579E-9	114E-9	526E-9	52.1E-9	52.7E-9	-44.6E-9
Smog	kg O ₃ eq	0.767	0.373	0.290	1.43	0.441	0.111	0.274	0.017	0.025	-0.040
АР	$kg SO_2$ eq	0.050	0.019	0.025	0.093	0.023	900.0	0.029	0.001	0.001	-0.002
ЕР	kg N eq	0.032	0.002	0.032	0.065	0.003	0.003	0.051	0.0002	0.0002	-0.0004
Carcinogenics	CTUh	542E-9	50.5E-9	373E-9	965.23E-9	67.2E-9	40.6E-9	246E-9	6-305.3	4.59E-9	-10.8E-9
No Carcinogenics	CTUh	3.38E-6	320E-9	1.28E-6	4.98E-6	472E-9	257E-9	2.63E-6	49.6E-9	14.2E-9	-53.9E-9
RE	kg PM2.5 eq	0.26	0.002	0.026	0.288	0.002	0.001	0.006	0.0001	0.0001	-0.0002
Ecotixicity	CTUe	153	11.2	40.9	205	16.1	9.39	136	1.60	0.693	-2.77
FFD	MJ surplus	17.5	3.83	6.20	27.5	5.17	1.13	3.16	0.466	0.491	-0.405
Acronyms	GWP: Global Warming Potential. ODP: Ozone Layer Depletion. AP: Acidification Potantial. EP: Eutrophication Potantial. FFD: Fossil fuel Depletion.	arming Poter Depletion.	ıtial. ODP: Oz	one Layer D	epletion. AP: 🗸	Acidification I	Potantial. EP:	Eutrophicat	ion Potantial		RE: Respiratory Effects.
Legend	AI: Raw Material Supply. A2: Transport. A3: Manufacturing. A1-A3: Sum of A1. A2. and A3. A4: Transport to Site. A5: Installation. C1: De-Construction. C2: Waste Transport. C3: Waste Processing. C4: Disposal. D: Benefits and Loads Beyond the System Boundary.	l Supply. A2: T port. C3: Was	ransport. A3 ste Processing	: Manufactur 3. C4: Dispos	ufacturing. A1-A3: Sum of A1. A2. and A3. A4: Transport to Site. Disposal. D: Benefits and Loads Beyond the System Boundary.	n of A1. A2. al and Loads Be	nd A3. A4: Tri yond the Syt	ansport to Sil stem Bounda	te. A5: Installa Iry.	ation. C1: De-C	onstruction.

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/The International EPD® System/ The International EPD® System is a programme for type III environmental declarations, maintaining a system to verify and register EPD®s as well as keeping a library of EPD®s and PCRs in accordance with ISO 14025. www.environdec. com

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/TLCID/ Turkish Life Cycle Inventory Database, Turkish Center for Sustainable Production Research and Design (SURATAM), www.suratam.org

Contact Information

EPD registered through fully aligned regional programme:

EPD Turkey:

www.epdturkey.org

The International EPD® System www.environdec.com

Programme



THE INTERNATIONAL EPD® SYSTEM



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Programme operator

EPD Turkev:

SÜRATAM - Turkish Centre for Sustain- Box 210 60 able Production Research & Design

Nef 09 B Blok No:7/15,

34415 Kağıthane / Istanbul, TURKEY

EPD International AB

SE-100 31 Stockholm. Sweden

www.epdturkey.org info@epdturkey.org www.environdec.com info@environdec.com



Contact: Mesut Kandemir

Quality Management Representative

Phone: +90 228 216 01 90

Owner of the declaration

Silkar Madencilik San. ve Tic. A.S. Orta Mahalle Topkapı Maltepe Cad.

NO:6 Silkar Plaza

Bayrampasa-Istanbul, Turkey

www.silkarstone.com info@silkarstone.com

LCA practitioner



Turkey:

Lalegül Sok. No:7/18 Kağıthane 34415 4. Levent - Istanbul, Turkey

+90 212 281 13 33

United Kingdom: 4 Clear Water Place Oxford OX2 7NL, UK 0 800 722 0185

www.metsims.com info@metsims.com

3rd party verifier



Vladimír Kocí, PhD LCA Studio Šárecká 5,16000 Prague 6 - Czech Republic www.lcastudio.cz

