ROOFING

ENVIRONMENTAL PRODUCT DECLARATION
CRADLE - TO - GATE SIKAPLAN UNIVERSAL-60 ENERGYSMART



BUILDING TRUST

GENERAL INFORMATION

COMPANY
Sika Corporation — Roofing

PRODUCT TYPE
Single Ply Roofing Membrane

PRODUCT
Sikaplan Universal-60 EnergySmart roofing membrane, with a finished thickness of 60 mils.[1]

MANUFACTURING SITE
Canton, MA 02021

EPD SCOPE
- Cradle-to-Gate
- This declaration has been prepared in accordance with ISO 14025, ISO 21930, and NSF 1115-19-2026ext..

EPD LIMITATIONS
- EPDs from different programs (using different PCR) may not be comparable
- Declarations based on the NSF International SPRM PCR can be used to assist in comparative assertions only with cradle-to-grave assessments with the same product function and functional unit and on the basis of clearly defined scenarios.
- EPDs may enable comparison between products, but do not themselves compare products, as stated in ISO 14025, Sections 4 and 6.7.2. It shall be stated in EPDs created using this PCR that only EPDs prepared from cradle-to-grave life-cycle results, and based on the same function, quantified by the same functional unit, and taking account of replacement based on the product reference service life (RSL) relative to an assumed building service life, can be used to assist purchasers and users in making informed comparisons between products. The basis of a comparison shall include the product application in accordance with ISO 21930, Section 5.5, and clearly defined and justified scenarios for modules A4, A5, B1 to B7 and C1 to C4.
- EPDs based on cradle-to-gate and cradle-to-gate with options information modules shall not be used for comparisons. EPDs based on a declared unit shall not be used for comparisons.

DECLARED UNIT
1 square meter of Sikaplan Universal-60 EnergySmart single-ply roofing membrane, packaged, at factory gate.

STANDARDS
The Sikaplan Universal-60 EnergySmart roofing membrane meets the following standards and requirements:

- ASTM D4434
- Title 24 Compliant*
- FM Approval
- Miami-Dade County Approval
- Underwriters Laboratory Inc.
- Underwriters Laboratories of Canada

ORGANIZATION
Sika Corporation, based in Lyndhurst, NJ, is a leading manufacturer of products and systems for the construction and motor vehicle markets.

Sika Corporation's roofing division has more than 60 years of experience manufacturing high quality, thermoplastic (PVC), single-ply roofing and waterproofing systems for the non- residential market.

PRODUCT DESCRIPTION AND USE
With a track record of performance, Sikaplan roofing membranes are the products of choice for architects, specifiers and building owners who want the peace of mind that comes with buying from the performance leader.

Sikaplan Universal-60 roof membrane is a thermoplastic PVC membrane used in mechanically attached and adhered systems. Sikaplan Universal is polyester reinforced, which provides the high breaking and tearing strength needed to prevent excessive elongation and sheet deformation under the stresses produced by the wind uplift of the membrane in mechanically attached systems. A unique lacquer coating is applied to the top surface of the membrane which helps to reduce soiling.

RAW MATERIALS

The product is manufactured from PVC resin produced in the United States, with added plasticizers, fillers, pigments, heat stabilizers, flame retardants, and other additives. The PVC backing layer incorporates recycled content from both pre-consumer and post-consumer sources. The reinforcement layer is made from a polyester scrim.

TRANSPORT TO FACTORY

The raw materials are transported to the Canton, MA facility via truck, rail, and ocean modes of transport.

MANUFACTURE

All reported products are manufactured at the Sika Roofing and Waterproofing manufacturing facility in Canton, Massachusetts. The facility is equipped with a water tower, water chilling unit, hot oil unit, regrind plant, Heating, Ventilation, and Cooling (HVAC) system, and fabric filter. A regenerative thermal oxidizer (RTO), that operates with natural gas, controls VOC emissions to the air. There are no emissions to water or land during the manufacturing process.

Wastes such as plastic (PET, Polyethylene), cardboard, paper, and wood pallets are produced during manufacture. The different fractions are transported and recycled externally.



[1] White, Tan, Reflective Gray only

TECHNICAL DATA	UNITS	ASTM TEST METHOD	ASTM D4434 TYPE III REQUIREMENT	VALUE/TEST RESULTS
				60 mils
Weight	[kg/m^2]	–	–	1.6
Total Recycled Content (both pre— and post—consumer)[1]	[%]	–	–	10%
Reinforcing Material	–	–	–	Polyester
Overall Thickness	[mil]	D751	45	60 nominal
Resistance to Static Puncture	[lbf] (kg)	D5602	33 (15)	Pass
Resistance to Dynamic Puncture	[ft-lbf] (J)	D5635	14.7 (20)	Pass
Tensile Strength	[lbf] (N)	D751	200 (890)	303 (1348)
Linear Dimensional Change (C.D.), %	[%]	D1204	0.5 max.	0.24
Tear Strength	[lbf]	D751	45	45
Seam Strength, min., (% of original)[4]	[%]	D751	75	Pass
Retention of Properties After Heat Aging	[%]	D751	–	–
Breaking Strength, (% of original) (M.D. / X.M.D.)	[%]	D751	≥90	Pass
Elongation, (% of original) (M.D. / X.M.D.)	[%]	D751	≥90	Pass
Accelerated Weathering Test (Fluorescent Light, UV exposure)	–	G154	5,000 hours	–
Cracking (7x magnification)	–	None	None	Pass
Crazing (7x magnification)	–	None	None	Pass
Weight Change After Immersion in Water, %	[%]	D570	±3.0 max.	2.5
Reflectivity (white)	–	ASTM C1549	–	0.86[2] - 0.72[3]
Emissivity (white)	–	ASTM C1371	–	0.91[2] - 0.91[3]
Solar Reflective Index (white)	–	ASTM E1980	–	106[2] - 89[3]
Low Temperature Bend, -40 °F	[°F]	D2136	-40	Pass

[1] Pre-consumer material: roofing membrane trimmings from Sika's manufacturing process and market supplied post-industrial PVC scrap material. Post-consumer material: Sika roofing membranes and other PVC roofing material at the end of its service life (total average recycled content: minimum 10%)

[2] New Membrane

[3] 3 year aged membrane

[4] Failure occurs through membrane rupture not seam failure

LIFE CYCLE STAGES

PRODUCT STAGE			CONSTRUCTION STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS & LOADS BEYOND 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	Operational Energy Use During Product	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste Processing	Disposal	Reuse, Recovery, Recycling Potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

*MND: module not declared
*X': module reported

SYSTEM BOUNDARY

INCLUDED	
A1-A3	• Extraction and processing of raw materials, including fuels used in product manufacturing; • Transportation of raw materials including empty backhauls; • Manufacturing of the product; • Packaging of the product ready for shipment; • Transportation from the manufacturing site to recycling/reuse for pre-consumer waste and unutilized byproducts from manufacturing, including empty backhauls; and • Recycling/reuse of pre-consumer waste and by-products of production.
NOT INCLUDED	
A4-A5	• Transportation of product from manufacturing site to building site, including empty backhauls; • Installation on the building site including steel fasteners (0.111 kg/m^2) for a mechanically attached application; and • Disposal (landfill) of waste produced on the building site.
B1-B7	• Replacement according to the product's expected service life (B4) • It is assumed that no use inputs/outputs (B1), maintenance (B2), repair (B3), refurbishment (B5) or operational water (B6) and energy (B7) use is required for the roofing system.
C1-C4	• Dismantling/demolition of the roof system (assumed to be carried out manually using hand tools); • Average transport from building site to recycling (membrane)/landfill (fasteners), including empty backhauls; and • Recycling/landfilling processes.
D	• Potential net benefits from reuse, recycling, and/or energy recovery beyond the system boundary.
ALL MODULES	• Capital goods & infrastructure, production, equipment, delivery vehicles, lab equipment, personnel-related activities and energy and water use related to company management and sales, have been excluded in the scope of the study.

MATERIAL CONTENT DECLARATION

The material average percentage by weight for 1 m^2 for the Sikaplan Universal-60 EnergySmart is provided. Overall recycled content of the production line has been certified by UL Environment to be 10% according to ISO 14021. The attestation is available for review. The 10% value includes external scrap, internally reprocessed scrap, and off-spec PVC resin which is regarded as post-industry scrap.

MATERIAL AVERAGE PERCENTAGE BY WEIGHT FOR 1 M^2 SIKAPLAN UNIVERSAL-60 ENERGYSMART	
RAW MATERIAL INPUT	**TOTAL WEIGHT BY [%]**
PVC resin new material	40-45
Plasticizer	25-30
Polyester fabric (scrim reinforcement)	5-7
External Scrap	5-7
Rest of chemicals	11-15
Total weight (Input)	**100**

PACKAGING MATERIAL	**DECLARED PRODUCT**
	60 MILS
Cardboard [kg]	4.50E-2
Wood [kg]	2.39E-1
Polyester [kg]	4.90E-2
PE Film [kg]	3.00E-3
Total [kg/m^2]	**3.40E-1**
Biogenic Carbon in Packaging [kg C/m^2]	1.42E-1

"Rest of chemicals" include filler, heat stabilizer, pigments, and flame retardants.

LIFE CYCLE IMPACTS

The results displayed below apply to Sikaplan Universal-60 EnergySmart with a thickness of 60 mils.

RESULTS SIKAPLAN UNIVERSAL-60 ENERGYSMART		**DECLARED UNIT OF 1 M^2 MEMBRANE, PACKAGED, AT FACTORY GATE**
CATEGORY INDICATOR		**PRODUCT STAGE**
		A1-A3
GWP100, excl biogenic carbon	kg CO2 eq.	4.45E+00
AP	kg SO2 eq.	1.35E-02
EP Marine	kg N eq.	2.24E-03
EP Freshwater	kg P eq.	6.78E-04
ODP	kg CFC 11 eq.	1.61E-06
ADP_{fossil}	MJ surplus energy	9.34E+01
POCP	kg O3 eq.	2.42E-01
USE OF PRIMARY RESOURCES		
RPR_E	MJ	1.14E+01
RPR_M [1]	MJ	4.52E+00
RPR_T	MJ	1.59E+01
$NRPR_E$	MJ	6.90E+01
$NRPR_M$ [1]	MJ	3.34E+01
$NRPR_T$	MJ	1.02E+02
USE OF SECONDARY RESOURCES		
SM [1]	MJ	7.45E-02
RSF [1]	MJ	-
NRSF [1]	MJ	-

RE [1]	MJ	-
USE OF FRESHWATER		
FW	m3	6.11E-02
WASTE CATEGORIES AND OUTPUT FLOWS		
HWD [1]	kg	6.32E-05
NHWD [1]	kg	4.81E-02
HLRW [1, 3]	kg	-
ILLRW [1, 4]	kg	-
CRU [1]	kg	-
MR [1]	kg	4.76E-02
MER [1]	kg	-
EE [1]	MJ	2.28E+01
TRANSPARENCY INDICATORS		
BCRK	kg CO2 eq.	-4.12E-01

GWP100 = Global warming potential (100 years); AP = Acidification potential; EP = Eutrophication potential; ODP = Ozone depletion potential; ADP_{fossil} = Abiotic depletion potential; POCP = Photochemical ozone creation potential; RPR_E = Renewable primary energy resources as energy (fuel); RPR_M = Renewable primary resources as material; $NRPR_E$ = Non-renewable primary resources as energy (fuel); $NRPR_M$ = Non-renewable primary resources as material; SM = Secondary materials; RSF = Renewable secondary fuels; NRSF = Non-renewable secondary fuels; RE = Recovered energy; FW = Freshwater; HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; HLRW = High-level radioactive waste; ILLRW = Intermediate and low-level radioactive waste; CRU = Components for re-use; MR = Materials for recycling; MER = Materials for energy recovery; EE = Recovered energy exported from the product system

NOTES ON LCA RESULTS FOR SIKAPLAN UNIVERSAL-60 ENERGYSMART:

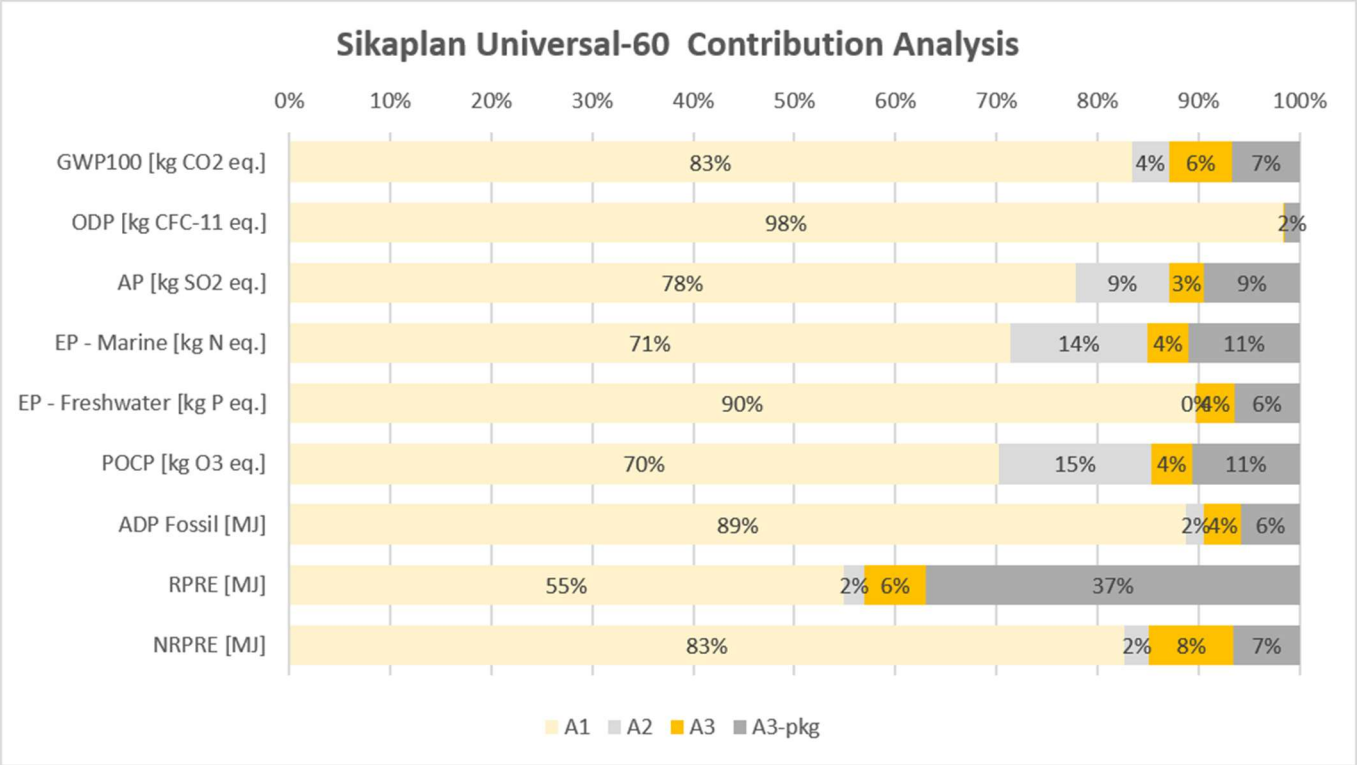
1. Calculated as per ACLCA ISO 21930 Guidance, respective sections 6.2 to 10.8.
2. "-" N/A for this product system "Not all LCA datasets for upstream materials includes these impact categories and thus results may be incomplete. Use caution when interpreting data in these categories" (NSF PCR for Single Ply Roofing Membrane, October 2019).
3. It should be noted that the foreground system (Canton, Massachusetts) does not generate any HLRW. High-level radioactive waste, e.g., when generated by electricity production, consists mostly of spent fuel from reactors." (ISO 21930:2017, clause 7.2.14).
4. It should be noted that the foreground system (Canton, Massachusetts) does not generate any ILLRW. Low- and intermediate-level radioactive wastes, e.g., when generated by electricity production, arise mainly from routine facility maintenance and operations (ISO 21930:2017, clause 7.2.14).
5. "Emerging LCA impact categories and inventory items are still under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting data in these categories: RPRE, RPRM, NRPRE, NRPRM, SM, RSF, NRSF, RE, HWD, NHWD, HLRW, ILLRW, CRU, MR,MER, EE" (NSF PCR for Single Ply Roofing Membrane, October 2019).

INTERPRETATION OF THE RESULTS

A dominance analysis for the impact categories is shown graphically per module, in the figures below. For the dominant modules, the main contributors are indicated and discussed.

The results of the Cradle-to-Gate assessment of Sikaplan Universal-60 EnergySmart show that raw materials dominate the overall score, with module A1 accounting for 70—98% of the category scores in 8 out of 9 indicators, the exception being RPRE (55%). By the same token, packaging makes an outsized contribution to indicator scores, exceeding the manufacturing impacts in all indicators.

Impact assessment and energy indicator results by stage – 1m² of Sikaplan Universal-60 EnergySmart- % basis



ADDITIONAL ENVIRONMENTAL INFORMATION

- The Sikaplan EnergySmart® membrane has a highly reflective, lacquer-coated surface that can reduce cooling and overall energy consumption in conditioned buildings. Sikaplan roof membranes exceed the cool roof requirements of California's Building Energy Code (Title 24), LEED® and Green Globes®.
- Sika's Roof Recycling Program has diverted more than 120 million pounds of pre-consumer and post-consumer vinyl membrane from landfill, recycling it back into roofing and waterproofing membrane products.
- The Canton, Massachusetts facility sources 100% of its electricity from renewable wind energy. The renewable energy credits are renewed on a 3yr interval. Sika has committed to maintain RECs for the entire period of EPD validity.
- Sikaplan Universal-60 EnergySmart 5-foot and 10-foot membranes have been validated by UL Environment to contain an average of 10% recycled content.
- Sikaplan Universal-60 EnergySmart roof membranes help building owners achieve LEED and Green Globes certification.

EPD VERIFICATION

This EPD was independently verified by ASTM in accordance with ISO 21930 and ISO 14025:

Internal ☐	**External** ☒	Lindita Bushi, PhD. Athena Sustainable Materials Institute 100-119 Ross Avenue Ottawa, Ontario, Canada K1Y0N6	**Signed:** Lindita Bushi
Program Operator		Timothy Brooke ASTM International 100 Bar Harbor Drive West Conshohocken, PA 19428 tbrooke@astm.org	**Signed:**
Declaration Holder		Sika Corporation	

Product group	**Date of Issue**	**Period of Validity**	**Declaration Number**
Single Ply Roofing Membranes	October 16, 2026	5 years	EPD 1290

DECLARATION TYPE	PRODUCT APPLICABILITY AND CHARACTERISTICS	CONTENT OF THE DECLARATION
A "Cradle-to-Gate" EPD for Sikaplan Universal-60 EnergySmart roofing membrane (60 mils). The modules included are A1-A3. The declaration is intended for use in Business to Business (B2B) communication.	The declared Sikaplan Universal-60 EnergySmart roofing membrane in 60 mils thickness is designed for low-slope and steep slope roofing applications. The membranes include an internal polyester reinforcement to provide the tear resistance required for mechanically-fastened roof systems.	This declaration follows Section 9, Content of NSF International Product Category Rules for Preparing an Environmental Product Declaration for Single-Ply Roofing Membranes, version 2, 2019.

EPD PROJECT REPORT INFORMATION

EPD PROJECT REPORT	Background LCA Report for Sika Corporation Single-ply roofing membranes – Canton, MA, June 2026
LCA AND EPD PREPARED BY:	Brandon Kuczenski, PhD, LCACP TrueNorth Collective 4537 Winnequah Rd Monona, WI 53716, USA brandon@truenorthcollective.net

PCR INFORMATION

PROGRAM OPERATOR	NSF International
REFERENCE PCR	NSF International, Product Category Rule for Environmental Product Declarations, PCR for Single Ply Roofing Membranes October 2019; Version PCRExt 2026-110
DATE OF ISSUE	10/11/2019
PCR REVIEW WAS CONDUCTED BY:	Thomas P. Gloria, PhD (Chair), Industrial Ecology Consultants, t.gloria@industrial-ecology.com Mr. Jack Geibig, EcoForm Mr. Bill Stough, Sustainable Research Group

GLOBAL BUT LOCAL PARTNERSHIP



WHO WE ARE

With more than 100 years of experience, Sika is a worldwide innovation and sustainability leader in the development and production of systems and products for commercial and residential construction, as well as the transportation, marine, automotive, and renewable energy manufacturing industries.

Sika has subsidiaries in 102 countries around the world and, in over 400 factories, produces innovative technologies for customers worldwide. In doing so, it plays a crucial role in the transformation of the construction and transportation sector toward greater environmental compatibility. With more than 34,000 employees, the company generated sales of CHF 11.76 billion in 2024.

Our most current General Sales Conditions shall apply.
Please consult the Product Data Sheet prior to any use and processing.
ISO 14001: 2004-Compliant

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Green Globes® is a trademark of the Green Building Initiative.

SIKA CORPORATION–ROOFING & WATERPROOFING
100 Dan Road
Canton, MA 02021
Tel: 888-509-3350
usa.sika.com/roofing

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