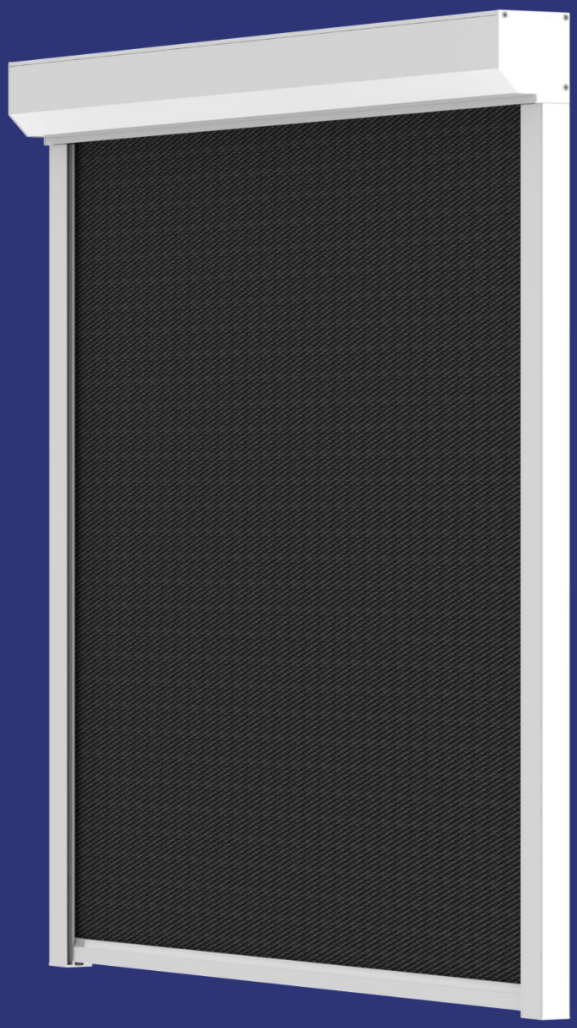
Environmental
Product
Declaration

According to EN15804+A2 (+indicators A1)

This declaration is for:
SunCircle Screens: models R90, G90 and G110

Provided by:
SunCircle B.V.



MRPI® registration:
1.1.00837.2025

Program operator:
Stichting MRPI®
Publisher:
Stichting MRPI®
www.mrpi.nl

Date of first issue:
22-5-2025
Date of this issue:
22-5-2025
Expiry date:
22-5-2030

COMPANY INFORMATION

SunCircle B.V.

Nijverheidsweg 22

3771 ME

Barneveld

Netherlands

31342443125

SunCircle B.V.

https://www.suncircle.nl

MRPI® REGISTRATION

1.1.00837.2025

DATE OF THIS ISSUE

22-5-2025

EXPIRY DATE

22-5-2030

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by Anne Kees Jeeninga, ADVIESLAB VOF. The LCA study has been done by Gerben den Besten, SunCircle B.V.. The certificate is based on an LCA-dossier according to EN15804+A2 (+indicators A1). It is verified according to the 'MRPI®-EPD verification protocol November 2020.v4.0'. EPDs of construction products may not be comparable if they do not comply with EN15804+A2. Declaration of SVHC that are listed on the 'Candidate list of Substances of Very High Concern for authorisation' when content exceeds the limits for registration with ECHA.

PROGRAM OPERATOR

Stichting MRPI®

Kingsfordweg 151

1043 GR

Amsterdam

PRODUCT

SunCircle Screens: models R90, G90 and G110

DECLARED UNIT / FUNCTIONAL UNIT

1 Productiveness (m2)

DESCRIPTION OF PRODUCT

SunCircle screens are designed for external installation on buildings, positioned vertically over transparent façade openings to effectively regulate heat and block intrusive sunlight.
SunCircle screens enhance privacy without obstructing the view, delivering an ideal blend of comfort, visibility, and energy efficiency.

VISUAL PRODUCT

MORE INFORMATION

https://www.suncircle.nl/screens/elektrisch/

Ing. L. L. Oosterveen MSc. MBA **Managing Director MRPI**	DEMONSTRATION OF VERIFICATION CEN standard EN15804 serves as the core PCR [1]
	Independent verification of the declaration an data according to EN15804+A2 (+indicators A1) Internal: External: X
	Third party verifier: Anne Kees Jeeninga, ADVIESLAB VOF
	[1] PCR = Product Category Rules

DETAILED PRODUCT DESCRIPTION (PART 1)

The production process of the R90, G90 and G110 models begins with the entry of new orders into our production system. Once an order is received, the sawing of components and the cutting and preparation of the fabric commence. Next, the order-picking process is conducted alongside preparatory work for attaching the screen fabric. Following these steps, the screen is assembled with precision. Finally, the product is carefully packed in cardboard and prepared for shipment, ensuring it arrives in perfect condition.

SunCircle screens come in a variaty of models based on the same high-quality screen system, meticulously designed to offer both functionality and aesthetic appeal. It comprises a cassette, side guides, durable fabric, an axle, and a bottom bar. The fabric features a zipper on each side, ensuring it stays securely in place within the side guides. The fabric can be retracted or extended from the cassette using an integrated tube motor within the axle or manually with a swing mechanism. Custom-made to meet your specific requirements, SunCircle screens within the scope of this study can accommodate widths up to 4000mm (expandable to 6500mm when coupled) and heights up to 3500mm. Note that in this study the tube motor is not included. Determining the environmental impact of a building with screens, the tube motor must be included separatly. This is determined by the branch organization VMRG since the impact of tube motors is significant and each system has always a single motor regardless of its size.

The RSL for SunCircle screens is 30 years, in compliance with the guidelines outlined in paragraph 6.3.3 of the EN 17213:2020 PCR for windows and doors (see references).

Component (> 1%)	(kg / %)
VERZWARING STAAL	0,837
BUIS 63	0,725
BOVENKAP (primair)	0,414
GELEIDER BASIS (primair)	0,494
ONDERKAP (primair)	0,265
ONDERLAT (primair)	0,19
SCREENDOEK	0,506
GELEIDER LIP (primair)	0,215
RITSPROFIEL	0,166

SCOPE AND TYPE

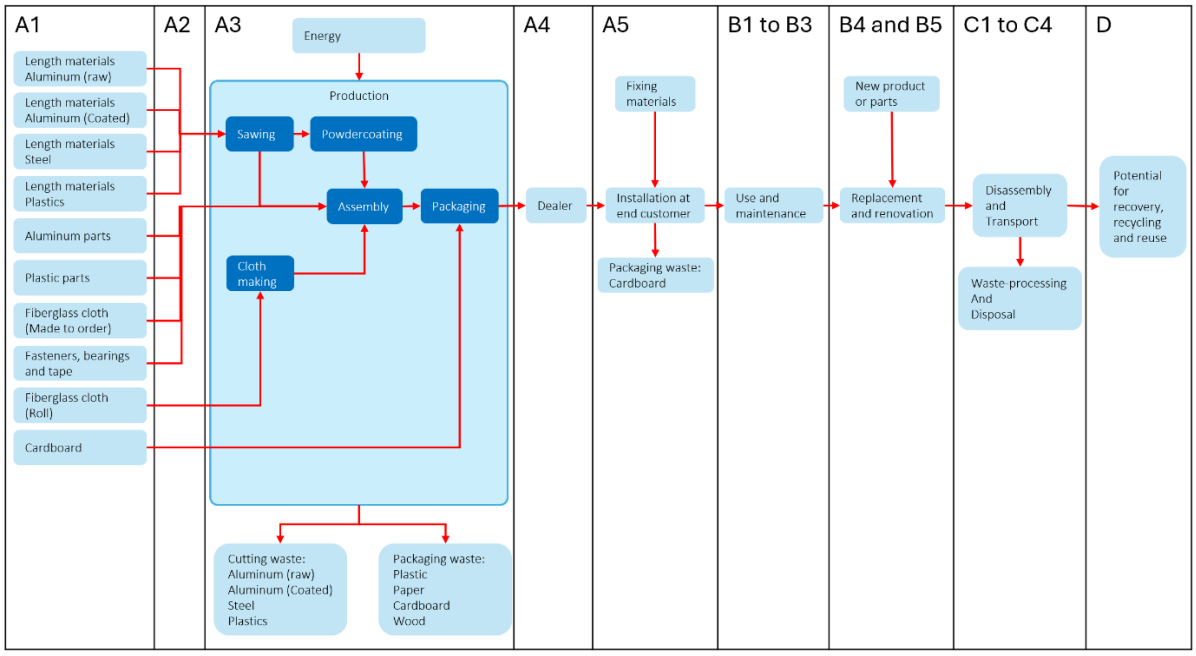
SunCircle screens are produced in Barneveld, sold in the Netherlands and the end-of-life is also situated in the Netherlands. This is a specific EPD for SunCircle Screen models R90, G90 and G110.

LCA method R<THINK: NMD Determination method v 1.1 | set1+2
LCA software*: Simapro 9.1.1
Characterization method: Bepalingsmethode 'set 1', 'set2' & param (NMD 3.4) v1.00
LCA database profiles: EcoInvent version 3.6
Version database: v3.17 (2024-05-22)
* Simapro is used for calculating the characterized results of the Environmental profiles within R<THINK.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse - Recovery - Recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared



REPRESENTATIVENESS

This EPD is representative for SunCircle screens, models R90, G90 and G110. The results of this EPD are representative for Netherlands, NL. This study is based on the R90 model, and the G90 and G110 model do not overshoot the 20% boundary in terms of ECI NL or on any of the environmental effect in set 1. Therefore the G90 and G110 are also represented in this study.

ENVIRONMENTAL IMPACT per functional unit or declared unit (indicators A1)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
ADPE	kg Sb eq.	6,67E-03	2,37E-05	5,93E-04	7,28E-03	2,67E-06	9,05E-07	0,00E+00	2,27E-08	5,83E-05	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,08E-06	1,42E-05	2,66E-08	2,88E-03
ADPF	MJ	3,42E+02	1,38E+01	6,14E+01	4,17E+02	1,59E+00	2,78E-01	0,00E+00	1,39E-02	3,11E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,45E-01	6,62E+00	5,19E-02	-2,84E+02
GWP	kg CO2 eq.	2,56E+01	9,08E-01	3,66E+00	3,01E+01	1,05E-01	2,67E-02	0,00E+00	7,97E-04	3,15E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,24E-02	2,54E+00	6,31E-03	-2,86E+01
ODP	kg CFC11 eq.	2,47E-06	1,64E-07	3,83E-07	3,02E-06	1,86E-08	3,42E-09	0,00E+00	8,37E-11	4,69E-07	0,00E+00	0,00E+00	ND	ND	0,00E+00	7,52E-09	1,03E-07	3,96E-10	-1,12E-06
POCP	kg ethene eq.	1,78E-02	5,23E-04	1,05E-03	1,94E-02	6,31E-05	2,69E-05	0,00E+00	4,88E-07	8,54E-04	0,00E+00	0,00E+00	ND	ND	0,00E+00	2,56E-05	2,70E-04	2,79E-06	-1,54E-02
AP	kg SO2 eq.	1,60E-01	4,25E-03	1,18E-02	1,76E-01	4,60E-04	1,18E-04	0,00E+00	3,93E-06	8,82E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,86E-04	3,05E-03	1,84E-05	-1,55E-01
EP	kg (PO4) 3 eq.	1,70E-02	7,81E-04	2,13E-03	1,99E-02	9,03E-05	2,48E-05	0,00E+00	4,99E-07	1,16E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	3,66E-05	3,71E-04	3,28E-06	-1,31E-02

Toxicity indicators and ECI (Dutch market)

HTP	kg DCB eq.	3,74E+01	3,77E-01	1,61E+00	3,94E+01	4,40E-02	2,53E-02	0,00E+00	3,14E-04	9,80E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,78E-02	4,30E-01	1,38E-03	-2,65E+01
FAETP	kg DCB eq.	3,52E-01	1,06E-02	4,15E-02	4,04E-01	1,29E-03	5,14E-04	0,00E+00	6,83E-06	2,78E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	5,21E-04	1,99E-02	1,82E-04	-1,46E-01
MAETP	kg DCB eq.	1,35E+03	3,93E+01	8,77E+01	1,47E+03	4,62E+00	3,26E+00	0,00E+00	2,17E-02	8,05E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,87E+00	4,84E+01	2,39E-01	-1,24E+03
TETP	kg DCB eq.	6,26E-02	1,32E-03	1,83E-02	8,23E-02	1,56E-04	3,78E-05	0,00E+00	9,42E-06	3,41E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,31E-05	1,44E-03	6,25E-06	4,51E-02
ECI	euro	5,65E+00	1,10E-01	4,12E-01	6,17E+00	1,26E-02	4,73E-03	0,00E+00	9,32E-05	3,05E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	5,11E-03	1,88E-01	5,82E-04	-4,74E+00
ADPF	kg Sb eq.	1,77E-01	6,61E-03	2,73E-02	2,11E-01	7,69E-04	1,34E-04	0,00E+00	5,83E-06	1,60E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	3,12E-04	3,26E-03	2,73E-05	-1,84E-01

ADPE = Abiotic Depletion Potential for non-fossil resources
ADPF = Abiotic Depletion Potential for fossil resources
GWP = Global Warming Potential
ODP = Depletion potential of the stratospheric ozone layer
POCP = Formation potential of tropospheric ozone photochemical oxidants
AP = Acidification Potential of land and water
EP = Eutrophication Potential
HTP = Human Toxicity Potential
FAETP = Fresh water aquatic ecotoxicity potential
MAETP = Marine aquatic ecotoxicity potential
TETP = Terrestrial ecotoxicity potential
ECI = Environmental Cost Indicator
ADPF = Abiotic Depletion Potential for fossil resources

ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2,64E+01	9,16E-01	3,63E+00	3,09E+01	1,06E-01	6,42E-01	0,00E+00	8,29E-04	3,51E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,28E-02	2,55E+00	6,99E-03	-2,95E+01
GWP-fossil	kg CO2 eq.	2,60E+01	9,15E-01	3,65E+00	3,06E+01	1,05E-01	2,45E-02	0,00E+00	8,11E-04	3,19E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,27E-02	2,55E+00	6,95E-03	-2,96E+01
GWP-biogenic	kg CO2 eq.	6,92E-02	4,39E-04	-3,59E-02	3,37E-02	4,87E-05	6,17E-01	0,00E+00	1,66E-05	3,16E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,97E-05	0,00E+00	4,07E-05	0,00E+00
GWP-luluc	kg CO2 eq.	2,78E-01	3,36E-04	1,78E-02	2,96E-01	3,86E-05	1,84E-05	0,00E+00	1,32E-06	2,85E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,57E-05	5,02E-04	2,82E-06	-1,02E-01
ODP	kg CFC11 eq.	2,56E-06	2,05E-07	3,68E-07	3,13E-06	2,33E-08	4,04E-09	0,00E+00	7,18E-11	4,75E-07	0,00E+00	0,00E+00	ND	ND	0,00E+00	9,43E-09	1,08E-07	4,83E-10	-1,23E-06
AP	mol H+ eq.	2,03E-01	5,59E-03	1,54E-02	2,24E-01	6,12E-04	1,59E-04	0,00E+00	4,73E-06	1,09E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	2,48E-04	3,74E-03	2,32E-05	-1,84E-01
EP-fresh water	kg P eq.	1,09E-03	8,13E-06	2,53E-04	1,36E-03	1,06E-06	4,17E-07	0,00E+00	6,48E-08	7,77E-05	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,31E-07	2,49E-05	1,05E-07	-9,61E-04
EP-marine	kg N eq.	2,44E-02	1,87E-03	2,54E-03	2,89E-02	2,16E-04	5,78E-05	0,00E+00	7,51E-07	2,30E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	8,74E-05	7,24E-04	7,14E-06	-2,80E-02
EP-terrestrial	mol N eq.	4,28E-01	2,06E-02	3,69E-02	4,85E-01	2,38E-03	6,31E-04	0,00E+00	8,73E-06	2,46E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	9,63E-04	8,32E-03	6,55E-05	-3,12E-01
POCP	kg NMVOC eq.	8,91E-02	5,82E-03	7,38E-03	1,02E-01	6,79E-04	1,92E-04	0,00E+00	2,75E-06	6,95E-03	0,00E+00	0,00E+00	ND	ND	0,00E+00	2,75E-04	2,31E-03	2,02E-05	-9,90E-02
ADP-minerals & metals	kg Sb eq.	6,67E-03	2,37E-05	5,93E-04	7,28E-03	2,67E-06	9,05E-07	0,00E+00	2,27E-08	5,82E-05	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,08E-06	1,42E-05	2,66E-08	2,88E-03
ADP-fossil	MJ, net calorific value	3,42E+02	1,38E+01	6,14E+01	4,17E+02	1,59E+00	2,78E-01	0,00E+00	1,39E-02	3,11E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,45E-01	6,62E+00	5,19E-02	-2,84E+02
WDP	m3 world eq. Deprived	8,31E+00	4,34E-02	1,58E+00	9,93E+00	5,69E-03	2,85E-03	0,00E+00	1,02E-01	8,24E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	2,31E-03	1,49E-01	1,51E-03	-2,47E+00

GWP-total	=	Global Warming Potential total
GWP-fossil	=	Global Warming Potential fossil fuels
GWP-biogenic	=	Global Warming Potential biogenictotal
GWP-luluc	=	Global Warming Potential land use and land use change
ODP	=	Depletion potential of the stratospheric ozone layer
AP	=	Acidification Potential, Accumulated Exceedence
EP-freshwater	=	Eutrophication Potential, fraction of nutrients reaching freshwater end compartment
EP-marine	=	Eutrophication Potential, fraction of nutrients reaching marine end compartment
EP-terrestrial	=	Eutrophication Potential, Accumulated Exceedence
POCP	=	Formation potential of tropospheric ozone photochemical oxidants
ADP-minerals & metals	=	Abiotic Depletion Potential for non-fossil resources [1]
ADP-fossil	=	Abiotic Depletion for fossil resources potential [1]
WDP	=	Water (user) deprivation potential, deprivation-weighted water consumption [1]

Disclaimer [1]:

- 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 experience with the indicator.

ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease inci-dence	1,90E-06	7,31E-08	6,61E-08	2,03E-06	9,49E-09	2,39E-09	0,00E+00	3,98E-11	9,32E-08	0,00E+00	0,00E+00	ND	ND	0,00E+00	3,85E-09	4,28E-08	3,40E-10	-2,23E-06
IRP	kBq U235 eq.	1,20E+00	5,91E-02	3,19E-01	1,58E+00	6,67E-03	1,21E-03	0,00E+00	9,59E-05	7,39E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	2,70E-03	2,77E-02	1,84E-04	-3,21E-01
ETP-fw	CTUe	6,17E+02	1,16E+01	1,01E+02	7,29E+02	1,42E+00	6,43E-01	0,00E+00	1,52E-02	7,13E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	5,75E-01	4,15E+01	4,33E+01	-7,30E+02
HTP-c	CTUh	6,49E-08	3,60E-10	2,76E-09	6,81E-08	4,60E-11	5,04E-11	0,00E+00	2,21E-12	1,35E-09	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,86E-11	1,00E-09	2,78E-12	-3,96E-08
HTP-nc	CTUh	8,46E-07	1,26E-08	6,59E-08	9,25E-07	1,55E-09	5,38E-10	0,00E+00	4,96E-11	5,30E-08	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,29E-10	2,50E-08	9,20E-11	-2,70E-07
SQP	-	5,47E+01	1,06E+01	4,06E+01	1,06E+02	1,38E+00	1,21E-01	0,00E+00	3,92E-03	1,30E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	5,59E-01	5,48E+00	7,80E-02	-7,97E+01

PM = Potential incidence of disease due to PM emissions

IRP = Potential Human exposure efficiency relative to U235 [1]

ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]

HTP-c = Potential Comparative Toxic Unit for humans [2]

HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]

SQP = Potential soil quality index [2]

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 to possible nuclear accidents, occupational exposure nor due to radioactive waste.

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 experience with the indicator.

OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	4,32E+00	3,51E-05	2,76E-01	4,60E+00	4,03E-06	1,57E-04	0,00E+00	2,38E-08	6,87E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	1,63E-06	1,44E-02	5,68E-08	1,67E-02
NHWD	kg	1,37E+01	7,52E-01	9,23E-01	1,53E+01	1,01E-01	9,56E-03	0,00E+00	1,68E-04	8,97E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,09E-02	2,26E-01	1,28E-01	-5,20E+00
RWD	kg	1,13E-03	9,25E-05	2,80E-04	1,50E-03	1,04E-05	1,69E-06	0,00E+00	8,12E-08	6,46E-05	0,00E+00	0,00E+00	ND	ND	0,00E+00	4,23E-06	2,93E-05	2,32E-07	-3,95E-04
CRU	kg	0,00E+00	0,00E+00	7,87E-03	7,87E-03	0,00E+00	6,64E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	1,87E-01	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	2,01E-01	2,01E-01	0,00E+00	2,84E-01	0,00E+00	0,00E+00	1,42E-01	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	3,74E+00	0,00E+00	0,00E+00
MER	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	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	-7,87E-02	-7,87E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,13E+00
ETE	MJ	0,00E+00	0,00E+00	-1,36E-01	-1,36E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-8,84E+00

HWD = Hazardous Waste Disposed
NHWD = Non Hazardous Waste Disposed
RWD = Radioactive Waste Disposed
CRU = Components for reuse
MFR = Materials for recycling
MER = Materials for energy recovery
EEE = Exported Electrical Energy
ETE = Exported Thermal Energy

RESOURCE USE per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	7,58E+01	1,82E-01	1,44E+01	9,04E+01	1,99E-02	1,25E-02	0,00E+00	1,88E-03	3,24E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	8,07E-03	7,00E-01	2,55E-03	-3,92E+01
PERM	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	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	7,58E+01	1,82E-01	1,44E+01	9,04E+01	1,99E-02	1,25E-02	0,00E+00	1,88E-03	3,24E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	8,07E-03	7,00E-01	2,55E-03	-3,92E+01
PENRE	MJ	3,65E+02	1,47E+01	6,56E+01	4,45E+02	1,69E+00	2,95E-01	0,00E+00	1,46E-02	3,34E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,84E-01	7,07E+00	5,51E-02	-3,01E+02
PENRM	MJ	9,13E-01	0,00E+00	-3,81E-02	8,74E-01	0,00E+00	3,26E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-1,67E+00
PENRT	MJ	3,66E+02	1,47E+01	6,56E+01	4,46E+02	1,69E+00	2,95E-01	0,00E+00	1,46E-02	3,34E+01	0,00E+00	0,00E+00	ND	ND	0,00E+00	6,84E-01	7,07E+00	5,51E-02	-3,02E+02
SM	kg	6,76E-01	0,00E+00	4,30E-02	7,19E-01	0,00E+00	2,44E-05	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	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	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	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	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	5,05E-01	1,55E-03	7,59E-02	5,82E-01	1,94E-04	1,43E-04	0,00E+00	2,38E-03	2,10E-02	0,00E+00	0,00E+00	ND	ND	0,00E+00	7,85E-05	5,61E-03	4,30E-05	-1,50E-01

PERE = Use of renewable energy excluding renewable primary energy resources
PERM = Use of renewable energy resources used as raw materials
PERT = Total use of renewable primary energy resources
PENRE = Use of non-renewable primary energy resources excluding non-renewable energy resources used as raw materials
PENRM = Use of non-renewable primary energy resources used as raw materials
PENRT = Total use of non-renewable primary energy resources
SM = Use of secondary materials
RSF = Use of renewable secondary fuels
NSRF = Use of non-renewable secondary fuels
FW = Use of net fresh water

BIOGENIC CARBON CONTENT per functional unit or declared unit (A1 and A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
BBCpr	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
BCCpa	kg C	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

BCCpr = Biogenic carbon content in product
BCCpa = Biogenic carbon content in packaging

CALCULATION RULES (PART 1)

Assumptions:
Energy consumption, was derived by the total energy consumption of the factory devided by the number of products produced in 2023. No existing EPDs could be provided by our suppliers, most environmental profiles we use are (combinations of) generic enviromental profiles with some small modifications based on the information our suppliers were able to provide. For the aluminium extrusion we could use the environmental profiles from our branche organization for primarai and secundair aluminium. Assuming a distribution of 70% primair and 30% secundair.

Cut off rules:
Product stage (A1-A3)
For the fabric confection, and the cutting of aluminum extrusion profiles and steel axles, capital goods were excluded as they fall below the cut-off threshold. All other input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. production waste) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass or 5% on impact per environmental effect.
Construction process stage (A4-A5)
All input flows (e.g. transportation to the construction site, additional raw material use for construction, installation energy (use)of energy use for assembly , etc.) and output flows (e.g. construction waste, packaging waste, etc.) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass or 5% on impact per environmental effect.
Use stage (B1-B3)
All (known) input flows (e.g. raw materials, transportation, energy use, packaging, etc.) and output flows (e.g. emissions to soil, air and water, construction waste, packaging waste, end-of-life waste, etc.) related to the building fabric are considered in this LCA. The total
neglected input flows do therefore not exceed the limit of 5% of energy use and mass or 5% on impact per environmental effect.
End of life stage (C1-C4)
All input flows (e.g. energy use for demolition or disassembly, transport to waste processing, etc.) and output flows (e.g. end-of-life waste processing of the product, etc.) are considered in this LCA. The total neglected input flows do therefore not exceed the limit of 5% of energy use and mass or 5% on impact per environmental effect. Benefits and loads beyond the system boundary (Module D) All benefits and loads beyond the system boundary resulting from reusable products, recyclable materials and/or useful energy carriers leaving the product system are considered in this LCA.

Data quality:
The product in this LCA is in accordance with the production method in the calendar year 2023, energy consumption and emissions to air refer to the calendar year 2023.
Completeness:
As far as is known, all environmental effects are taken into account. All raw materials, energy consumption, emissions and waste are included. A mass balance is available for the R90 model. See attachment: (Mass balance R90 screens.xlsx). The energy consumption is based on a complete production year in 2023.
Representativeness:
All data is based on figures and technical information relevant for the production year 2023. All this information originates from the one and only production facility of SunCircle located in Barneveld, the Netherlands. The current screen line of SunCircle to which this study applies, was developed in 2019 and first produced in 2020. The product composition SunCircle Screens: models R90, G90 and G110. (1480x2180)
3 Calculation rules
Environmental Product Declaration SunCircle Screens: models R90, G90 and G110. (1480x2180) 7 / 24 is in accordance with the production method from the manual that was last updated in june 2022. Consistency and reproducibility:
This LCA is based on actual data for the main product. Based on the assumptions and substantiations in this LCA, a reproduction by a third-party should be possible.

Allocation has not been applied in this LCA.

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 1)

In A-3 the process used for electricity was: [E0003] (ei3.6) Electricity (NL) - low voltage (max 1kV), with a Global Warming Potential total (GWP-total) of 0,651642 kg COeq. per 1 kWh. The scenarios assumed in A4 (TRANSPORT TO CONSTRUCTION SITE and A5 (ASSEMBLY) are shown in the next table. There are no significant environment impacts as a result of materials or energy used in the construction stage (A5). The following output flows leaving the system at module A5 are assumed.

Description	Value	unit
A4_Vehicle type used for transport	Lorry (Truck), unspecified (default) | market group for (GLO	
A4_Fuel type and consumption of vehicle	not available	
A4_Distance	150	km
A4_Capacity utilisation (including empty returns)	50	%
A4_Bulk density of transported products	inapplicable	
A4_Volume capacity utilisation factor	1	
A5_Output materials as result of loss during construction	0,0034	%
A5_Output materials as result of waste processing of materials used for installation/assembly at the building site	0	Kg
A5_Output materials as result of waste processing of used packaging	0,378	Kg

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 2)

No significant environment impact in the use stage (B1) modules, because there is no (significant) emission to air, soil or water. Technical maintenance (B2) is needed during Use Stage. For maintenance the scenario(s) as mentioned below are included in this EPD. The technical reference service life of some parts of the considered product does not equal the technical reference service life of the product. Therefore the Repair scenarios are assumed for module B3.

Description	Cycle (yr)	Number of cycles (n)	Amount per cycle	Total amount	Unit
B2_Fabric cleaning	5,00	5,00	0,276	1,380	kg
B2_Cleaning the cassette, bottom bar	1,00	29,00	0,034	0,986	kg
B3_SERGE 5% 010010 (SC3030)	15,00	1,00	0,506	0,506	kg
B3_Thermofixatie serge 5% doek	15,00	1,00	0,034	0,034	MJ

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 3)

No inputs are needed for the product at the de-construction / demolition phase (C1). The following distances and transport conveyance are assumed for transportation during end of life (C2) for the different types of waste processing.

Waste Scenario	Transport conveyance	Not removed (stays in work [km]	Landfill [km]	Incineration [km]	Recycling [km]	Re-use [km]
C2_Steel, light (NMD ID 73)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_aluminium, cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_plastics, reinforced (i.a. profiles, sheets, pipes) (NMD ID 46)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_PVC, pipes (NMD ID 64)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_plastics, via residue (NMD ID 43)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_Zinc / zinc coating galvanised steel (i.a. profiles, sheets, zinc coating) (NMD ID 75)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0
C2_finishes (adhered to wood, plastic, metal) (NMD ID 2)	Lorry (Truck), unspecified (default) | market group for (GLO)	0	100	150	50	0

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 4)

The scenario(s) assumed for end of life of the product (C3 and C4) are given in the following table. First the assumed percentages per type of waste processing are displayed, followed by the assumed amounts.

Waste Scenario	Region	Not removed (stays in work) [%]	Landfill [%]	Incineration [%]	Recycling [%]	Re-use [%]	Not removed (stays in work) [kg]	Landfill [kg]	Incineration [kg]	Recycling [kg]	Re-use [kg]
Steel, light (NMD ID 73)	NL	0	1,00	0,00	87,00	12,00	0	0,016	0,000	1,359	0,187
aluminium, cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	NL	0	3,00	3,00	94,00	0,00	0	0,070	0,070	2,185	0,000
plastics, reinforced (i.a. profiles, sheets, pipes) (NMD ID 46)	NL	0	0,00	100,00	0,00	0,00	0	0,000	0,506	0,000	0,000
PVC, pipes (NMD ID 64)	NL	0	10,00	20,00	70,00	0,00	0	0,017	0,033	0,116	0,000
plastics, via residue (NMD ID 43)	NL	0	20,00	80,00	0,00	0,00	0	0,021	0,082	0,000	0,000
Zinc / zinc coating galvanised steel (i.a. profiles, sheets, zinc coating) (NMD ID 75)	NL	0	5,00	0,00	95,00	0,00	0	0,004	0,000	0,076	0,000

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION (PART 5)

The presented Benefits and loads beyond the system boundary (D) in this EPD are based on the following calculated Net output flows in kilograms and Energy recovery displayed in MJ Lower Heating Value.

Waste Scenario	Net output flow [kg]	Energy recovery [MJ]
Steel, light (NMD ID 73)	1,546	0,000
aluminium, cast alloy for buildings (i.a. profiles, sheets, pipes) (NMD ID 4)	1,457	0,000
plastics, reinforced (i.a. profiles, sheets, pipes) (NMD ID 46)	0,000	10,884
PVC, pipes (NMD ID 64)	0,116	0,714
plastics, via residue (NMD ID 43)	0,000	2,537
Zinc / zinc coating galvanised steel (i.a. profiles, sheets, zinc coating) (NMD ID 75)	0,076	0,000
finishes (adhered to wood, plastic, metal) (NMD ID 2)	0,000	0,913

DECLARATION OF SVHC

The product does not contain substances featured on the Candidate List from the REACH regulations greater than 0.1% by mass of the total product.

REFERENCES

ISO 14040
ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework; EN ISO 14040:2006
ISO 14044
ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines; EN ISO 14044:2006
ISO 14025
ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures
EN 15804+A1
EN 15804+A1: 2013: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products
EN 15804+A2
EN 15804+A2: 2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products
NMD-verification protocol
NMD-verification protocol version 1.0, July 2020, foundation NMD
NMD Determination method
NMD Determination method Environmental performance Construction works v1.1 March 2022, foundation NMD
EPD Mermet
FRENCH ENVIRONMENTAL PRODUCT DECLARATION (EPD) Sunscreen® transparent technical fabrics for exterior and interior sun protection, including confection
Differences in ECI NL between screen models R90, G90 and G110.pdf
Differences per effect between screen models R90, G90 and G110.pdf