PROGRAMME OPERATOR

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COMPANY INFORMATION

HERTALAN®

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PRODUCT

HERTALAN® EASY COVER FR

MRPI®-REGISTRATION

1.1.00054.2019

EPD-REGISTRATION

00000910

DATE OF ISSUE

12-4-2019

DATE OF EXPIRY

12-4-2024

DECLARED UNIT/FUNCTIONAL UNIT

Roofing materials
One square meter waterproof roofing material on a flat or gently sloping roof with a maximum gradient of 20°. Based on a roof of 1.000 m^2 (40x25 m^1), representative for a roof of more than 50 m^2. Including prescribed fastening, overlay and installation method. Excluding insulation and the roof structure. **Unit: m^2 per mm thickness**

SCOPE OF DECLARATION

This MRPI®-EPD certificate is verified by **Harry van Ewijk of SGS Search**.
The LCA study has been done by **NIBE BV**.
The certificate is based on an LCA-dossier according to ISO14025, NEN-EN15804+A1 and Assessment Method - Environmental Performance Construction and Civil Engineering Works (GWW) – version 2.0 November 2017. It is verified according to the EPD-MRPI® verification protocol May 2017. EPD of construction products may not be comparable if they do not comply with NEN-EN15804+A1. 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.

DESCRIPTION OF PRODUCT

HERTALAN® EASY COVER FR EPDM roofing including adhesives and sealants (HERTALAN KS143 for the flat part and HERTALAN KS137 for the borders). HERTALAN® EASY COVER FR complies to the fire resistance requirements of NEN 6063.

VISUAL PRODUCT

MORE INFORMATION

www.hertalan.com

DEMONSTRATION OF VERIFICATION

CEN standard EN15804 serves as the core PCR[a]
independent verification of the declaration and data, according to EN ISO 14025:2010
☐internal ☒external
(where appropriate[b]) Third party verifier:  Harry van Ewijk of SGS Search
a Product Category Rules b Optional for B-to-B communication; mandatory for B-to-C communication (see EN ISO 14025:2010,9.4).

DETAILED PRODUCT DESCRIPTION

General

HERTALAN® EASY COVER FR is a roofing and waterproofing membrane. EPDM sheets are connected in the factory by the special hot bonding technique of HERTALAN®. This yields a completely sealed roofing membranes of a bigger area than usual. Thereby the assembly on the roof can be much quicker.

- **1,31 kg/m² per mm thickness**

Available thicknesses: 1,20-1,50-2,00 mm.

Production process

The entire production process takes place at Kampen-NL. The mixing of the raw materials is followed by shaping the uncured mixture into a sheet material. In the next step, by heat treatment, the EPDM mixture will be vulcanized. After vulcanization the product will be cut into the required sizes or through hot bonding seam process formed into bigger prefab sheets.

Delivery and assembly

Depending on the delivery form, HERTALAN® EASY COVER FR
is rolled or folded out at the desired position on the roof surface. The HERTALAN® EASY COVER FR is secured in place by adhering, mechanically fixing or placing ballast onto it. Depending on the application method only spray equipment (adhesive) or tools for mechanically fixing are required. No particular measures are required to ensure protection of the fitters health. The instructions in the installation guideline must be observed.

Rolls of HERTALAN® EASY COVER FR are provided with a label through tape. Up to 10 rolls are placed onto a pallet. Prefabricated sheets are folded up, packed in PE foil and placed onto a pallet. Packaging material can be recycled separately.

RSL

The HERTALAN® roofing systems are on the market for more than 40 years. According to report 37236/99-VI (SKZ, D) HERTALAN® roofing systems have an expected service life of 50 years and more.

COMPONENT*	[KG]
EPDM Easy Cover FR roofing	82%
Hertalan ks143/ks137	18%

***> 1% TOTAL MASS**

HERTALAN® EASY COVER FR is a homogeneous EPDM mixture consisting of 25-40 % EPDM synthetic rubber, 10-20 % mineral oil, 15-25 % filler, 15-30 % carbon black and 0-10 % additives.

SCOPE AND TYPE

The geographical location is the Netherlands and the product is produced in Kampen (The Netherlands).
The product is applied in roofing and the end of life phase is in the Netherlands. The background database is EcoInvent version 3.3 and the LCA software used is Simapro 8.5. The EPD is a "Cradle to gate with options" EPD. The EPD is a specific EPD for a specific product.

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	Refurbishement	Operational energy use	Operational water use	De-construction emopliotion	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	MNA	MNA	MNA	MNA	MNA	x	x	x	x

X = Module assessed
MNA = Module Not Assessed

The following paragraphs contain the results. For modules B1, B2 and B3 the results were zero for all (impact) categories. Therefore they were left out of the result tables.

REPRESENTATIVENESS (IF AVERAGE)

Not applicable.

ENVIRONMENTAL IMPACT per functional or declared unit

FU: m^2 per mm thickness

	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	C2	C3-C4	D
ADPE	kg Sb eq.	5,32E-05	4,49E-07	5,55E-07	5,42E-05	1,09E-07	-5,02E-10	1,01E-07	4,04E-07	-2,70E-07
ADPF	kg Sb eq.	5,28E-02	1,41E-03	4,03E-03	5,82E-02	2,86E-04	-1,36E-04	2,65E-04	7,05E-04	-1,87E-02
GWP	kg CO_2eq.	4,89E+00	1,93E-01	5,34E-01	5,62E+00	3,86E-02	-1,01E-02	3,58E-02	4,60E+00	-2,27E+00
ODP	kg CFK-11 eq.	7,35E-07	3,50E-08	4,02E-07	1,17E-06	7,22E-09	-1,27E-09	6,69E-09	4,73E-08	-1,99E-07
POCP	kg ethene eq.	3,49E-03	1,35E-04	1,02E-04	3,72E-03	2,34E-05	-6,81E-07	2,16E-05	1,07E-04	-3,42E-04
AP	kg SO_2 eq.	1,95E-02	1,46E-03	1,12E-03	2,21E-02	1,71E-04	-1,05E-05	1,58E-04	8,53E-04	-2,56E-03
EP	Kg PO43- eq.	3,14E-03	2,04E-04	2,27E-04	3,57E-03	3,36E-05	2,45E-07	3,11E-05	1,45E-04	-3,69E-04
Toxicity indicators (only for Dutch Market)										
HTP	kg 1,4 DB eq.	1,45E+00	8,57E-02	8,72E-02	1,63E+00	1,68E-02	1,30E-03	1,55E-02	8,24E-02	-1,76E-01
FAETP	kg 1,4 DB eq.	4,24E-01	2,31E-03	1,20E-01	5,46E-01	4,93E-04	8,84E-05	4,57E-04	3,17E-03	-5,15E-03
MAETP	kg 1,4 DB eq.	2,39E+02	9,14E+00	9,72E+00	2,58E+02	1,87E+00	7,24E-01	1,73E+00	6,92E+00	-2,24E+01
TETP	kg 1,4 DB eq.	7,44E-02	6,57E-04	1,34E-02	8,85E-02	1,34E-04	-1,80E-05	1,24E-04	1,19E-03	-2,60E-03

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.

RESOURCE USE per functional or declared unit

FU: m² per mm thickness

	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	C2	C3-C4	D
PERE	MJ	2,52E+00	4,61E-02	1,21E+00	3,77E+00	8,24E-03	-4,96E-02	7,64E-03	1,31E-01	-2,64E+00
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
PERT	MJ	2,52E+00	4,61E-02	1,21E+00	3,77E+00	8,24E-03	-4,96E-02	7,64E-03	1,31E-01	-2,64E+00
PENRE	MJ	1,20E+02	3,14E+00	8,25E+00	1,31E+02	6,39E-01	-2,78E-01	5,92E-01	1,45E+00	-3,81E+01
PENRM	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
PENRT	MJ	1,20E+02	3,14E+00	8,25E+00	1,31E+02	6,39E-01	-2,78E-01	5,92E-01	1,45E+00	-3,81E+01
SM	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
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
NRSF	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
FW	M3	4,57E-02	5,81E-04	1,37E-02	6,01E-02	1,16E-04	-1,14E-04	1,08E-04	3,32E-03	-1,83E-02

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials;
PERM = Use of renewable primary energy resources used as raw materials;
PERT = Total use of renewable primary energy resources;
PENRE = Use of non-renewable primary energy excluding non-renewable primary 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 material;
RSF = Use of renewable secondary fuels;
NRSF = Use of non-renewable secondary fuels;
FW = Use of net fresh water.

OUTPUT FLOWS AND WASTE CATEGORIES per functional or declared unit

FU: m² per mm thickness

	UNIT	A1	A2	A3	TOTAL A1-A3	A4	A5	C2	C3-C4	D
HWD	Kg	4,57E-04	2,18E-05	3,10E-05	5,10E-04	4,47E-06	-9,45E-07	4,14E-06	2,75E-05	-1,05E-04
NHWD	Kg	1,29E-01	1,47E-01	1,69E-02	2,93E-01	3,64E-02	2,72E-03	3,37E-02	5,27E-01	-2,34E-02
RWD	Kg	4,34E-04	2,00E-05	1,63E-05	4,71E-04	4,11E-06	-4,35E-07	3,81E-06	5,50E-06	-4,61E-05
CRU	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
MFR	Kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,73E-03	0,00E+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
EEE	MJ	7,20E-01	0,00E+00	0,00E+00	7,20E-01	0,00E+00	1,81E-01	0,00E+00	0,00E+00	1,98E+01
ETE	MJ	3,81E-01	0,00E+00	0,00E+00	3,81E-01	0,00E+00	9,57E-02	0,00E+00	0,00E+00	1,05E+01

HWD = Hazardous waste disposed;
NHWD = Non-hazardous waste disposed;
RWD = Radioactive waste disposed;
CRU = Components for re-use;
MFR = Materials for recycling;
MER = Materials for energy recovery;
EEE = Exported electrical energy;
ETE = Exported thermal energy

CALCULATION RULES

Cut of rules

There is no cut-off of inputs and outputs in any of the processes during the life cycle stage, hence the environmental impact of all unit processes of each life cycle stage are considered.

Data quality

Specific data was collected from Carlisle through a questionnaire. In the case of missing data, a relevant proxy was searched and adjusted to the corresponding unit process.

Data collection

Production data concerning the material composition are collected in the period 2013-2014 and relate to the year 2013. The amounts of electricity and gas use for production are based on consumption data in the year 2013. The data has been re-examined in 2018 and deemed to be still representative for the current processes.

Allocations

Proces	Allocation procedure
Multi input processes	Landfill is a multi input process. For the modelling of landfill of the materials the EcoInvent method was followed Incineration is a multi input process. For the modelling of landfill of the materials the EcoInvent method was followed as well as the guidelines of the Dutch PCR for construction products (Bepalingsmethode).
Multi output processes	No multi output processes were applied

SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the HERTALAN® EASY COVER FR manufacturing process, as well as waste processing up to the end-of waste state.

A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road, boat and/or train. On average, the transport characteristics for this life cycle stage are the following:

Transport type	Truck	Transoceanic freight ship
Weight*Distance	1180 kgkm	3240 kgkm
EcoInvent Process	Transport, lorry >16t, fleet average/RER).	Transport, transoceanic freight ship/OCE U)

A3. Manufacturing

This module covers the manufacturing of HERTALAN® EASY COVER FR and includes all processes linked to production such as storing, mixing, packing and internal transportation. Use of electricity and fuels production are taken into account as well.

The manufacturing process takes place at one production site. For upstream (raw material processes) and downstream processes (application, use, and waste processing) generic data is used when no specific data is obtained.

The manufacture of production equipment and infrastructure is not included in the system boundary. Packaging-related flows in the production process and all up-stream packaging are included in the manufacturing module.

A4. Transport to customer

This module has been declared for the Dutch situation.

The following steps are necessary to transport the EPDM roofing from the manufacturing site to the customer

#	Name	Description
1	Loading	The roofing membranes are loaded on the truck at the manufacturing site
2	Transport	The roofing membranes are transported to the building site
3	Unloading	The roofing membranes are unloaded from the truck and carried to the roof

The estimated distance to the building site has been set at 150 km (standard A4 transport distance for construction products in the Netherlands). The steps of loading and unloading have not been taken into account.
The transport needed for 1000 m^2 is shown below:

Transport process	Transport, lorry >16t, fleet average/RER).
Weight*Distance EPDM membranes	260,59 tkm
Weight*Distance glue	58,02 tkm

A5. Application and use

This module has been declared for the Dutch situation.

The HERTALAN® EASY COVER FR roofing membranes are manually glued to the roof.
Therefore no energy is needed.
The following amount of glue is needed.
HERTALAN KS137 and HERTALAN KS143: 0,35 kg/m^2 (including waste)
The components of the glue have been supplied by Paramelt.

C2. Transport to incineration, landfill or recycling

This module has been declared for the Dutch situation.

Below the weights that need to be transported to the waste processor are shown.
The following distances are assumed (standard C2 transport distances for construction products in the Netherlands):
- Transport from demolition to sorting location and recycling: 50 km
- Transport from demolition to sorting location and landfill: 100 km
- Transport from demolition to sorting location and incineration: 150 km

Transported weights of waste for easy cover (FR) per 1000 m^2								
Weights [kg]					Tonkm per product [ton] * [kg]			
	Total	landfill	incineration	recyling	landfill	incineration	recyling	total
EPDM	1737,3	173,7	1476,7	86,9	17,4	221,5	4,3	243,2
Glue	386,8	0,0	386,8	0,0	0,0	58,0	0,0	58,0
Packaging cardboard	41,7	0,0	41,7	0,0	0,0	6,3	0,0	6,3
Packaging foil	1,7	0,2	1,5	0,1	0,0	0,2	0,0	0,2
Total	2167,5	173,9	1906,7	87,0	17,4	286,0	4,3	307,7

Additional note
The waste scenarios have been declared for the Dutch situation.

DECLARATION OF SVHC

None of the substances contained in the product are listed in the “Candidate List of Substances of Very High Concern for authorisation”, or they do not exceed the threshold with the European Chemicals Agency.

REFERENCES

- EN 15804:2012+A1:2013 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products, of 11/2013.
- ISO 14040/14044 on Life Cycle Assessments.
- Smit, Bart, 2018. Personal communication with Bart Smit, Carlisle Construction Materials B.V.

REMARKS

None.