



## Alkorplan F 35076 Roofing membrane

# EPD

Foundation for  
Environmental  
Declarations in Industry



**EPD no.:** 0006

Issued, date: 01.08.2005

Valid until, date: 31.07.2008

**Third-party verification of conformity**

We confirm that this environmental declaration has been carried out according to ISO 14044, ISO 14025 and ISO 21930, and Product category rules (PCR) of Mechanical fixed single ply roof waterproofing membranes (EN 13956). The documentation has been carried out with the Ecodec-tool.

The declaration has been prepared by:



Oslo : 01.08.2005

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Head of product certification

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**Manufacturer**

Renolit Belgium NV  
Industripark De Bruwaan 9 B-9700 Oudenaarde Belgium  
Organisation no. 00053872  
ISO 14001/EMAS etc. : No  
Market area: Scandinavia

**Background information**

Scope  
Year of study  
Expected service life of building  
Service life of product  
Functional unit (FU)

Cradle to grave  
2004  
60 years  
30 years  
m<sup>2</sup> installed roofing membrane and 60 years

**Product description**

Alkorplan F 35076 roofing membrane is made of PVC-P with a woven polyester reinforcement. Alkorplan F 35076 contains UV stabilizer and complies with NT 006 regarding Fire. Alkorplan F 35076 can be supplied in several colours, 1.05, 1.60 and 2.10 m width and 1.2, 1.5, 1.8 and 2.0 mm thick. The resistance against wind uplift is secured by means of mechanical anchors to the construction, both on new and old roofs.

**Product specification**

	Part %	Scope	Quantity (kg/FU)
PVC	47 %	100 %	0,8
Platicziser	34 %	100 %	0,5
Polyester	6 %	100 %	0,1
Fire, heat and UV stabelizer	13 %	74 %	0,2
SUM	100 %	97 %	1,6

**Environmental Indicators**

Global warming	9,6 kg CO2 equiv.
Energy use	151,5 MJ
Recycled materials	0 %

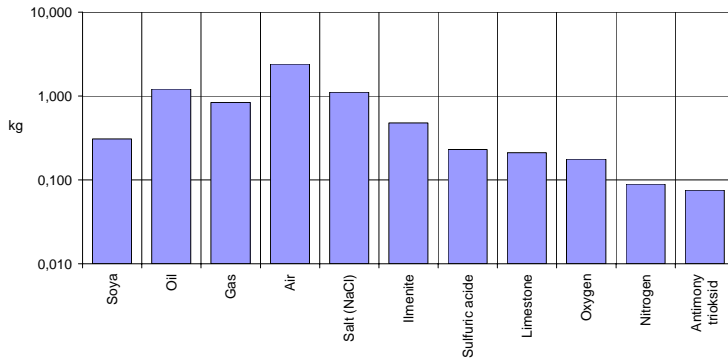
## Use of resources

### Material resources

All figures refer to functional unit (FU)

R = Recycled materials * = Raw materials	Type	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Reuse/ recycling	Total
<b>Renewable materials</b>									
Soya	*	kg	0,3						0,3
<b>Non-renewable materials</b>									
Oil	*	kg	1,2						1,2
Gas	*	kg	0,8						0,8
Air		kg	2,4						2,4
Salt (NaCl)		kg	1,1						1,1
Ilmenite		kg	0,5						0,5
Sulfuric acide		kg	0,2						0,2
Limestone		kg	0,2						0,2
Oxygen		kg	0,2						0,2
Nitrogen		kg	0,1						0,1
Antimony trioksid		kg	0,1						0,1
Feedstock	*	MJ							93,5

### Material resources



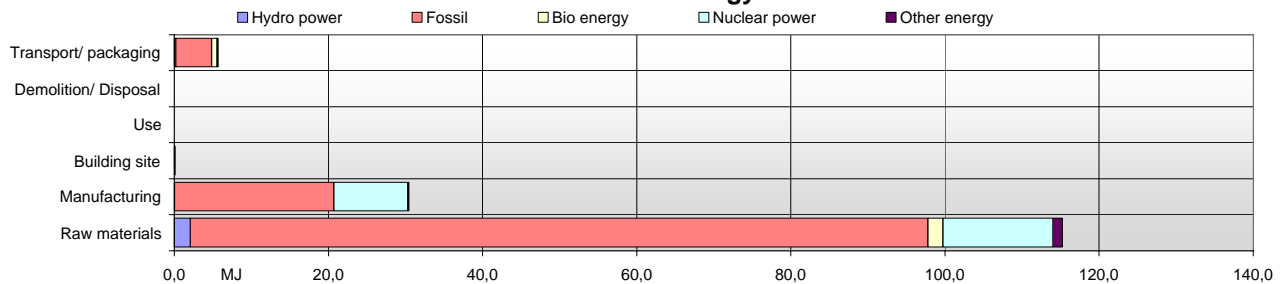
Renewable materials 0 %, Non-renewable materials 100 %,  
Recycled materials 0 %

The product does not contain tropical wood. No chemicals  
from the Norwegian OBS-list are used.

### Energy resources

	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Transport/ packaging	Total
<b>Renewable energy</b>								
Hydro power	MJ	2,1	0,0	0,1			0,2	2,4
Bio energy	MJ	2,0					0,7	2,7
<b>Non-renewable energy</b>								
Oil	MJ	31,0	0,2	0,0			3,1	34,3
Gas	MJ	52,9	17,6	0,0			1,1	71,6
Coal	MJ	11,8	2,9	0,0			0,5	15,2
Nuclear power	MJ	14,3	9,6	0,0			0,1	24,0
Other energy	MJ	1,2	0,2	0,0			0,0	1,3
<b>Total</b>								<b>151,5</b>

### Energy use



### Water

Potable water 0,02 m<sup>3</sup>

### Land

Land used 0,00 m<sup>2</sup>

## Emissions and environmental impacts

### Environmental impact

	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Transport/ packaging	Total
Climate change	kg CO <sub>2</sub> -equiv.	7,8	1,4	0,0			0,3	9,58
Destruction of the ozone layer	kg ODP -equiv.	0,0	0,0	0,0				0,00
Acidification	kg SO <sub>2</sub> -equiv.	0,1	0,0	0,0			0,0	0,06
Formation of photochemical oxidants	kg POCP- equiv.	0,0	0,0	0,0			0,0	0,01
Eutrophication	kg PO <sub>4</sub> -equiv.	0,0	0,0	0,0			0,0	0,01

All figures refer to functional unit (FU)

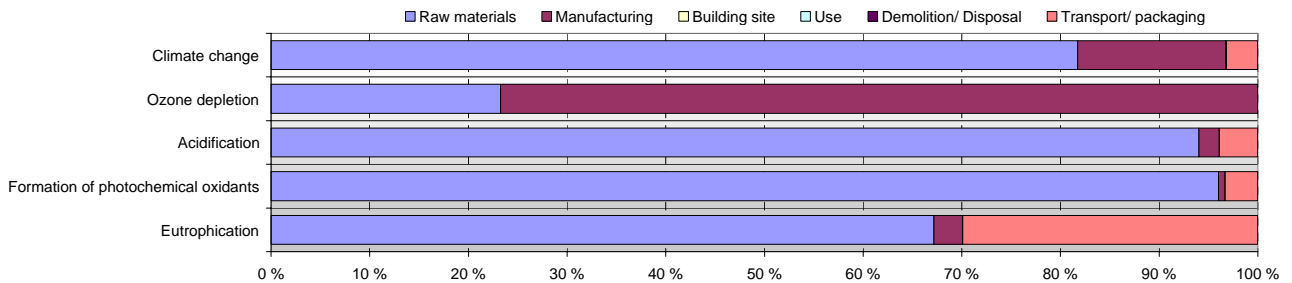
### Emission to air

	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Transport/ packaging	Total
CO <sub>2</sub>	g	7163,9	1350,9	0,7			283,9	8799,5
CO	g	24,8	0,3	0,0			2,5	27,6
SO <sub>2</sub>	g	36,1	0,3	0,0			0,7	37,2
NO <sub>x</sub>	g	33,7	1,5	0,0			2,5	37,6
NM/VOC	g	9,1	0,1	0,0			0,6	9,8
Particles (PM10)	g	8,7	0,1	0,0			0,5	9,3
CH <sub>4</sub>	g	25,6	3,4	0,0			0,4	29,4
N <sub>2</sub> O	g	0,0	0,0	0,0			0,0	0,1
NH <sub>3</sub>	g	0,1	0,0	0,0				0,1
Pb	g	0,1	0,0	0,0			0,0	0,1
Hg	g	0,1	0,0	0,0				0,1
HCl	g	0,1	0,0	0,0			0,0	0,1
VCM	g	0,9						0,9
Organisk	g	2,1						2,1
DCE	g	0,8						0,8
Metals	g	0,1						0,1
H <sub>2</sub>	g	0,1						0,1
Cl	g	0,1						0,1

### Emissions to water

	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Transport/ packaging	Total
Substance/fibre	g	7,5					0,1	7,6
COD	g	3,6	0,0	0,0			0,1	3,7
BOD	g	0,3	0,0	0,0			4,3	4,5
Phosphorus P	g	0,0	0,0	0,0			0,4	0,4
Cl <sup>-</sup>	g	45,2						45,2
Na <sup>+</sup>	g	5,2						5,2
Cl	g	4,8						4,8

### Impact categories



Emissions to indoor environment are not relevant for this product

## Waste treatment

All figures refer to functional unit (FU)

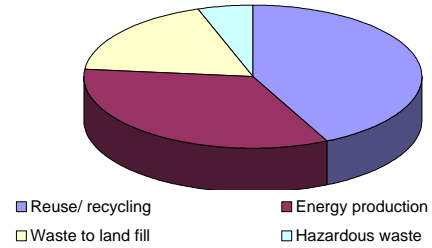
	Unit	Raw materials	Manufacturing	Building site	Use	Demolition/ Disposal	Total
Reuse/ recycling	kg	0,0				1,6	1,6
Energy production	kg	0,0				1,3	1,3
Waste to land fill	kg	0,3	0,1	0,0		0,3	0,7
Hazardous waste	kg	0,2	0,0	0,0		0,0	0,2
Energy production	MJ						25,1

Renolit Belgium NV has as a member of ESWA (European Single Ply Waterproofing Association), signed a voluntary commitment for recycling of old roofing membranes. The commitment is to recycle at least 50 % of the collectable, available quantity of roofing membranes waste by 2005.

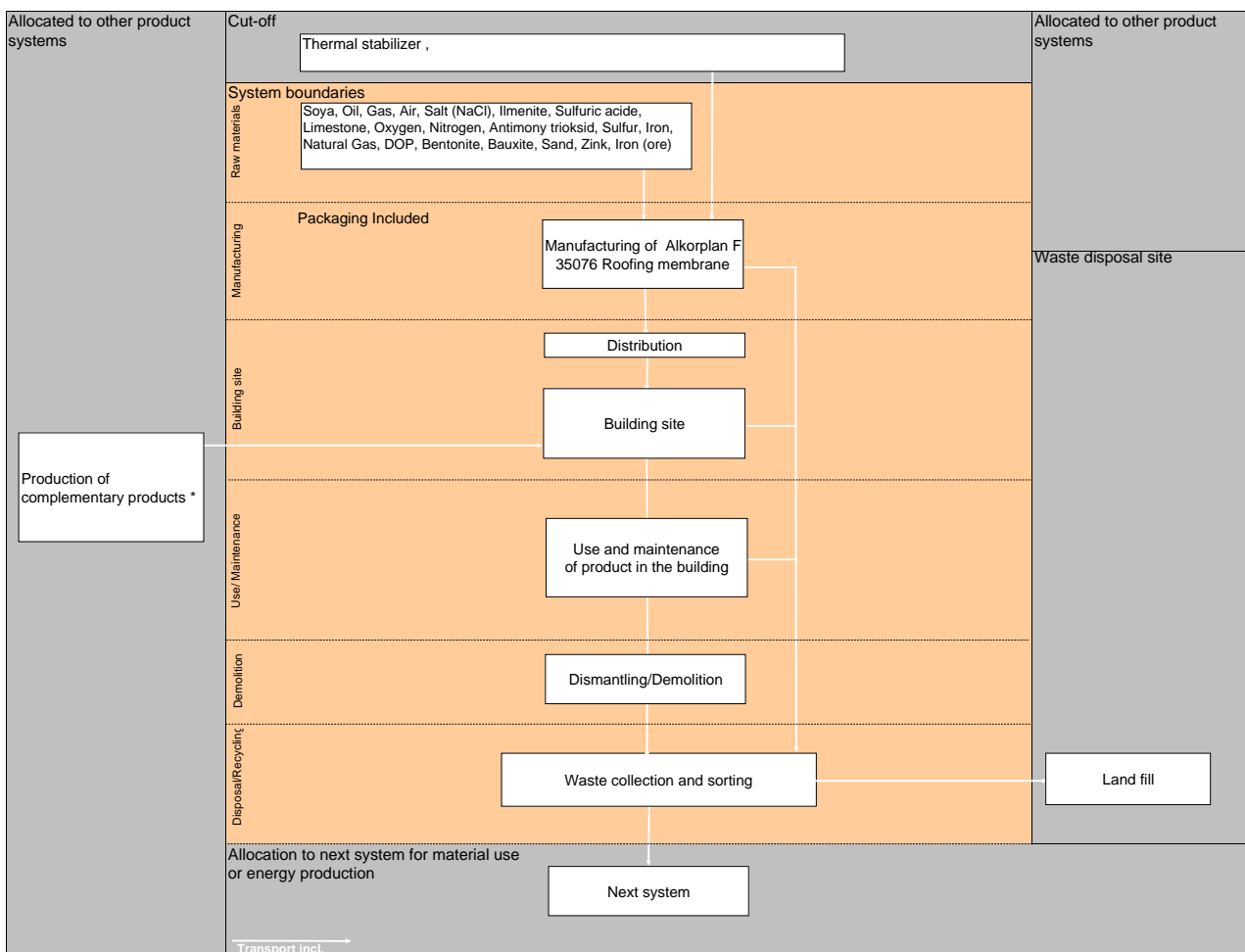
Recycled materials will be processed and prepared to raw materials for new membranes.

In the future organic materials will not be allowed to be sent to land fill (EU-directive). It is expected that 40 % of the roofing membranes will be used for energy production.

Waste treatment



## System boundaries



\* Fasteners not included

Uncertainty	±	10 %
Materials with product specific data		0 %
Cut-off		1,5 %

References: NBI Report 18073 10.04.2006