



## Environmental product declaration

### Termex- cellulose fiber

Valid for 5 years starting from 1.3.2014 assuming that there are no changes in the manufacturing process or source of purchased electricity.

Termex-Eriste Oy  
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[www.termex.fi](http://www.termex.fi)

#### Description of the product

Termex - cellulose insulation is made of newspaper, magnesium sulphate and boric acid. The product can be used as heat insulation in roofs, walls and floors and as additional heat insulation in log walls.

Puhallus-Termex can be freely installed in an open insulation space (horizontal and slightly tilting objects, roofs and base floors). Sidox-Termex can be blown with adhesives into an open insulation space (walls, roofs and base floors). Ontelo-Termex can be blown into a closed insulation space with high density without indentation (sloping floors, walls)

There is a blowing equipment in the installation car (truck) and a tube of 40m, operated by 2 installers. It should be possible to access the insulated space as near as possible. The installation can also be done with a do-it-yourself blowing equipment.

Specific weights	kg/m <sup>3</sup>
Puhallus-Termex	26 - 36
Vino-ontelo-Termex	42 - 65
Sidox-Termex	32 - 65
Pystyontelo-Termex	55 - 65

#### Technical features

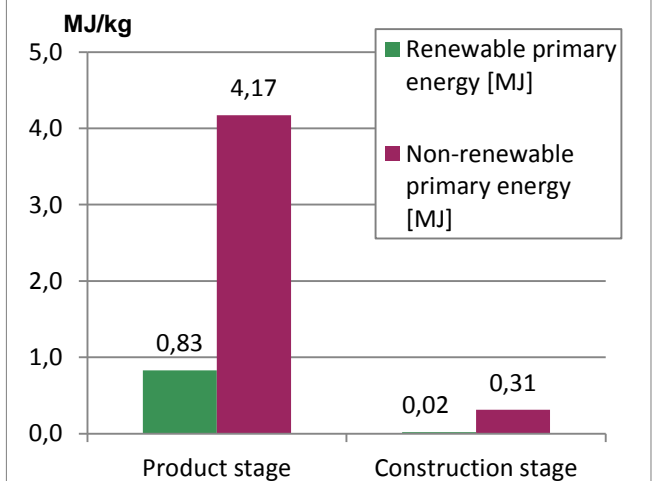
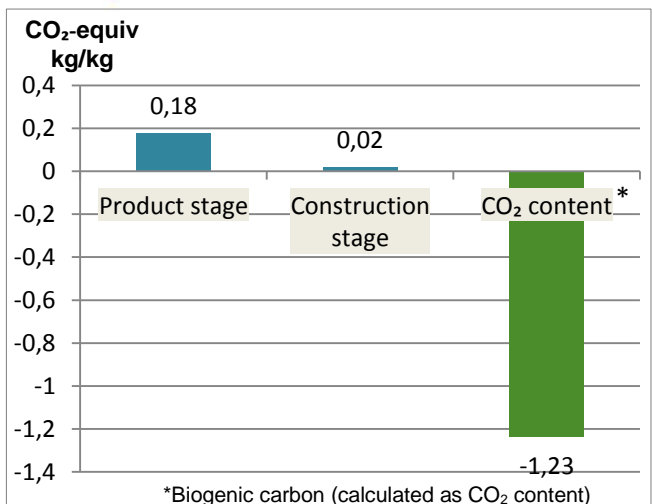
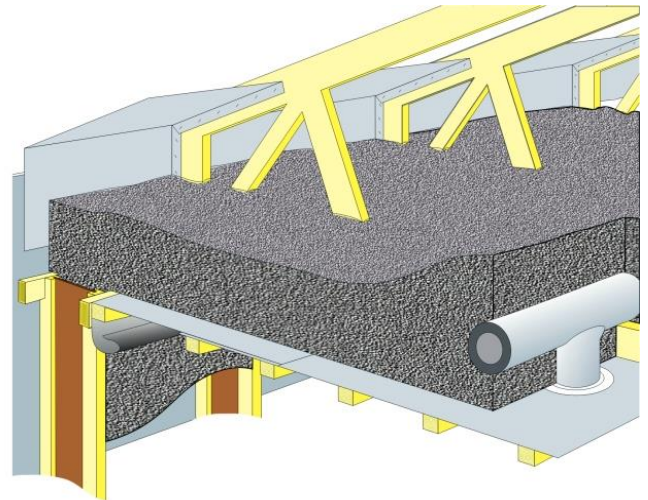
The European technical approval ETA 10/0399 and the CE-label  
 Indentation for Puhallus-Termex 20 %, others 0 %  
 Puhallus-Termex fire resistance class E

Thermal conductivity, λDECLARED (23,50)	
Puhallus-Termex	0,039 W/mK
Vino-Ontelo-Termex	0,040 W/mK
Sidox-Termex	0,040 W/mK
Pystyontelo-Termex	0,043 W/mK

The U-value depends on the insulation thickness and structure.

#### More information about the product:

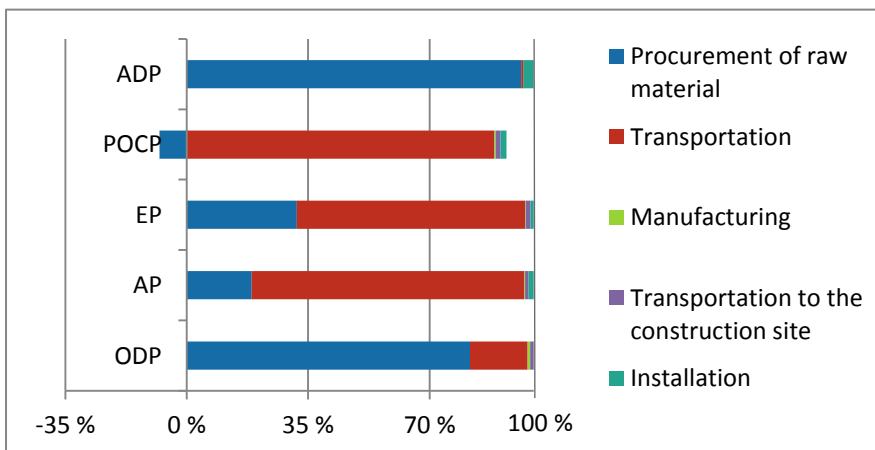
<http://www.termex.fi/en/ecological/approvals-and-reports>



The environmental product declaration is based on EN 15804:2012 and EN 16485:2014. CO<sub>2</sub> content is based on the EN 16449:2014. Impacts were calculated to the product and construction stages. The product stage, A1 – A3, consists of the procurement of raw-materials, transportation and manufacturing of the product. The construction stage, A4 - A5, consists of conventional transport to the construction site and installation of the product.

## Environmental impacts per 1 kg of the product

Environmental impact parameter	Unit	Product stage				Construction stage		
		A1	A2	A3	A1-A3	A4	A5	A4-A5
<b>Energy</b>								
Non-renewable primary energy	MJ	1,6	2,7	0,059	<b>4,3</b>	0,16	0,15	<b>0,31</b>
Renewable primary energy	MJ	0,059	0,002	0,93	<b>0,99</b>	1,2E-04	0,019	<b>0,019</b>
<b>Impact categories</b>								
Global warming potential, GWP	g CO <sub>2</sub> -equiv	70	104	4,4	<b>178</b>	6,0	14	<b>20</b>
Depletion potential of the stratospheric ozone layer, ODP	g CFC11-equiv	1,0E-06	2,1E-07	8,5E-09	<b>1,3E-06</b>	1,3E-08	-	<b>1,3E-08</b>
Acidification potential of soil and water, AP	g SO <sub>2</sub> -ekv	0,45	1,9	5,6E-03	<b>2,3</b>	0,024	0,036	<b>0,059</b>
Eutrophication potential, EP	g PO <sub>4</sub> <sup>3-</sup> -equiv	0,12	0,25	5,5E-04	<b>0,37</b>	5,3E-03	3,4E-03	<b>8,7E-03</b>
Formation potential of tropospheric ozone, POCP	g C <sub>2</sub> H <sub>4</sub> -equiv	-8,6E-03	0,097	4,4E-04	<b>0,089</b>	1,6E-03	1,9E-03	<b>3,4E-03</b>
<b>Resources</b>								
Abiotic depletion potential (ADP-elements) for non fossil resources, ADP	g SB-equiv	6,9E-04	4,1E-06	1,7E-07	<b>7,0E-04</b>	2,5E-07	2,1E-05	<b>2,1E-05</b>
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1,5	1,4	0,059	<b>3,0</b>	0,090	0,15	<b>0,24</b>
Use of secondary material	kg	0,83	-	-	<b>0,83</b>	-	-	-
Use of renewable secondary fuels	MJ	3,5E-04	-	-	<b>3,5E-04</b>	-	-	-
Use of non-renewable secondary fuels	MJ	7,0E-04	-	-	<b>7,0E-04</b>	-	-	-
Use of net fresh water	m <sup>3</sup>	4,2E-03	0,011	3,7E-04	<b>0,015</b>	6,6E-04	5,2E-04	<b>1,2E-03</b>
<b>Waste</b>								
Non-hazardous waste	g	1,5	0,058	4,1	<b>5,6</b>	3,6E-03	0,31	<b>0,31</b>
Hazardous waste	g	0,036		0,39	<b>0,43</b>	-	4,4E-05	<b>4,4E-05</b>
Radioactive waste	g	8,3E-04	2,6E-03	1,1E-04	<b>3,6E-03</b>	1,6E-04	4,1E-05	<b>2,0E-04</b>
Biogenic carbon as CO <sub>2</sub>	kg	1,2						


**Other life cycle stages**

According to the manufacturer:

- It can be assumed that during 50 years of normal use the product will not require any maintenance or repairs. Therefore, the environmental impacts during stages B2 (maintenance) – B4 (replacement) is zero.
- In the end of the life cycle (stage D) the product can be reused in another building or it can be used as fuel or soil amendment when diluted.

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