Peikko Group Oy Deltabeam – Finland & Slovak Republic
EN 15804 Environmental product declaration

This is an environmental product declaration for business-to-consumer and business-to-business communication. The EPD covers life-cycle stages from cradle to gate (A1-A3). This EPD complies with the standards EN 15942 and ISO 14025. The life-cycle impact assessment used in this EPD complies with the standards EN 15804, ISO 14040 and ISO 14044. This EPD was produced with the www.360optimi.com cloud service by Bionova Ltd (www.bionova.fi).

General information

Table A.1 – General information		
a	Name and address of manufacturer	Peikko Group Oy, PL 104 Voimakatu 3, 15101 Lahti, Finland
b	Name of the product	Deltabeam
c	Description of the usage of the product	Deltabeam is used as a structural element combined with all general concrete slab types.
	Functional unit	One kg of DELTABEAM serving as structural element during the lifetime of the building.
	Declared unit	One kg of Deltabeam
	Reference service life (RSL)	RSL equals the lifetime of the building.
d	Main raw materials	Steel products; rebar, plate and profiles
e	Very dangerous materials	None
f	Applicable PCR-program	EN 15804 core product category rules
g	Representativeness and variability of results	The EPD represents the average of factories in Finland (Lahti) and Slovak republic (Kralova nad Vahom).
	Year represented	2014
h	Omitted life-cycle stages	Analysis includes stages A1-A3, other stages are excluded.
i	Statement of comparability	EPD of construction products may not be comparable if they not comply with EN 15804 and are not considered in a building context.
j	Coverage of EPD	EN 15804
k	Day of publishing	25.6.2015
	End of validity	24.6.2020
l	Performer of the LCA study	Noora Miilumäki, LCA Engineer, Bionova Ltd
	Signature of performer	Noora Miilumäki
m	Availability of additional information	www.peikko.com

Verification

Demonstration of verification	
Independent verification of the declaration and data according to EN ISO 14025	Internal
Third party verifier	-

Environmental impacts

Table A.2 – Parameters describing environmental impacts.					
Parameters	**Unit**	**A1 Raw materials**	**A2 Transportation to factory**	**A3 Manufacturing phase**	**A1-A3 Total**
Global warming (GWP)	kg CO2 e/ kg	2,65E0	7,07E-2	1,11E-1	2,83E0
Formation potential of tropospheric ozone (ODP)	kg CFC 11 e / kg	8,56E-9	9,48E-9	2,69E-8	4,50E-8
Acidification (AP)	kg SO2 e / kg	6,68E-3	3,40E-4	3,89E-4	7,41E-3
Eutrophication (EP)	kg (PO4)-3 e / kg	6,00E-4	7,42E-5	2,64E-4	9,39E-4
Formation of ozone of lower atmosphere (POCP)	kg C2H4 e / kg	1,07E-3	3,83E-6	1,16E-5	1,08E-3
Abiotic depletion potential, non-fossil resources (ADP-elements)	kg Sb e / kg	2,69E-4	4,90E-4	6,22E-4	1,38E-3
Abiotic depletion potential, fossil resources (ADP-fossil fuels)	MJ / kg	2,97E1	1,03E0	1,50E0	3,22E1

Usage of primary energy

Table A.3 – Parameters describing resource use - primary energy.					
Parameters	**Unit**	**A1 Raw materials**	**A2 Transportation to factory**	**A3 Manufacturing phase**	**A1-A3 Total**
Use of renewable primary energy energy resources as energy MJ	MJ / kg	1,65E-1	1,51E-1	2,50E-1	5,65E-1
Use of renewable primary energy resources as raw materials MJ		0	0	0	0
Total use of renewable primary energy MJ		1,65E-1	1,51E-1	2,50E-1	5,65E-1
Use of non renewable primary energy as energy MJ		2,94E1	1,98E0	3,48E0	3,49E1
Use of non renewable primary energy as raw materials MJ		0	0	0	0
Total use of non renewable primary energy MJ		2,94E1	1,98E0	3,48E0	3,49E1

Recycling materials, recycling energy and usage of water

Table A.4 – Parameters describing resource use - recycling materials, recycling energy and usage of water.					
Parameters	**Unit**	**A1 Raw materials**	**A2 Transportation to factory**	**A3 Manufacturing phase**	**A1-A3 Total**
Use of secondary materials	kg / kg	4,22E-1	0	3,07E-4	4,22E-1
Use of renewable secondary fuels	MJ / kg	2,08E-7	4,73E-3	6,21E-2	6,69E-2
Use of non renewable secondary fuels MJ		0	0	4,3E-3	4,30E-3
Use of net fresh water	m3 / kg	2,44E-2	1,17E-4	7,92E-2	1,04E-1

Other environmental information describing waste categories

Table A.5 – Parameters describing waste formation.					
Parameters	**Unit**	**A1 Raw materials**	**A2 Transportation to factory**	**A3 Manufacturing phase**	**A1-A3 Total**
Hazardous waste disposed	kg / kg	6,53E-4	3,45E-6	2,21E-3	2,87E-3
Non hazardous waste disposed	kg / kg	4,98E-1	1,29E-7	7,71E-3	5,05E-1
Radioactive waste disposed	kg / kg	4,43E-4	4,24E-10	1,05E-5	4,54E-4

Other technical information describing output flows

Table A.6 – Parameters describing output flows.					
Parameters	**Unit**	**A1 Raw materials**	**A2 Transportation to factory**	**A3 Manufacturing phase**	**A1-A3 Total**
Components for re-use	kg / kg	0	0	7,07E-3	7,07E-3
Materials for recycling	kg / kg	3,71E-5	0	1,99E-1	1,99E-1
Materials for energy recovery	kg / kg	0	1,42E-3	0	1,42E-3
Exported energy	MJ / kg	0	0	0	0

Table A.7 – Other technical information concerning the use phase.
Not part of the study. Additional information concerning the product may be available from the manufacturer.

Table A.8 – Additional information about dangerous compounds released during usage.
Not relevant. No tests have been carried out on the product concerning indoor climate.

EPD Extensions - Norway	
Carbon footprint declaration	Separate carbon footprint has not been calculated.
Content of dangerous substances	None of the following substances have been added to the product: Substances on the REACH Candidate list of substances of very high concern (of 13.01.2014) substances on the Norwegian Priority list (of.13.01.2014) and substances that lead to the product being classified as hazardous waste. The chemical content of the product complies with regulatory levels as given in the Norwegian Product Regulations.
Impact on the indoor environment	No impact on indoor environment.
Greenhouse gas emissions from the use of electricity in the manufacturing phase	Finnish and Slovakian electricity mixes are used at the production sites. Greenhouse gas emissions: FI 0,076 kg CO2 eqv / MJ, SK 0,078 kg CO2 eqv / MJ
Transport from the place of manufacture to a central warehouse	No transportation from place of manufacture to warehouse.

EPD Extensions - for certified construction projects	
Building life-cycle impact reduction	The product enables reducing building materials life-cycle emissions through less overall material consumption.
Materials and Resources: Building Product Disclosure and Optimization – Environmental Product Declarations	The product has an EPD compliant with ISO 14044 and EN 15804.
Materials and Resources: Building Product Disclosure and Optimization – Sourcing of Raw Materials	Product includes recycled content. The share of recycled content is 33 %.
Materials and Resources: Building Product Disclosure and Optimization – Material Ingredients	Product does not contain REACH high concern listed ingredients.