

ANNI OVIIR. RANGI MAJA OÜ.

Ehitusmaterjalide süsinikujalajälje arvutusmetoodika ja tööriistad

Teadmistepõhine Ehitus
2. september 2020

Anni Oviir

LCA JA LCC SPETSIALIST

Hoonete LCA ja LCC arvutused sert. süsteemidele. BREEAM, LEED, DGNB, jt

EPD'DE KOOSTAMINE JA VERIFITSEERIMINE

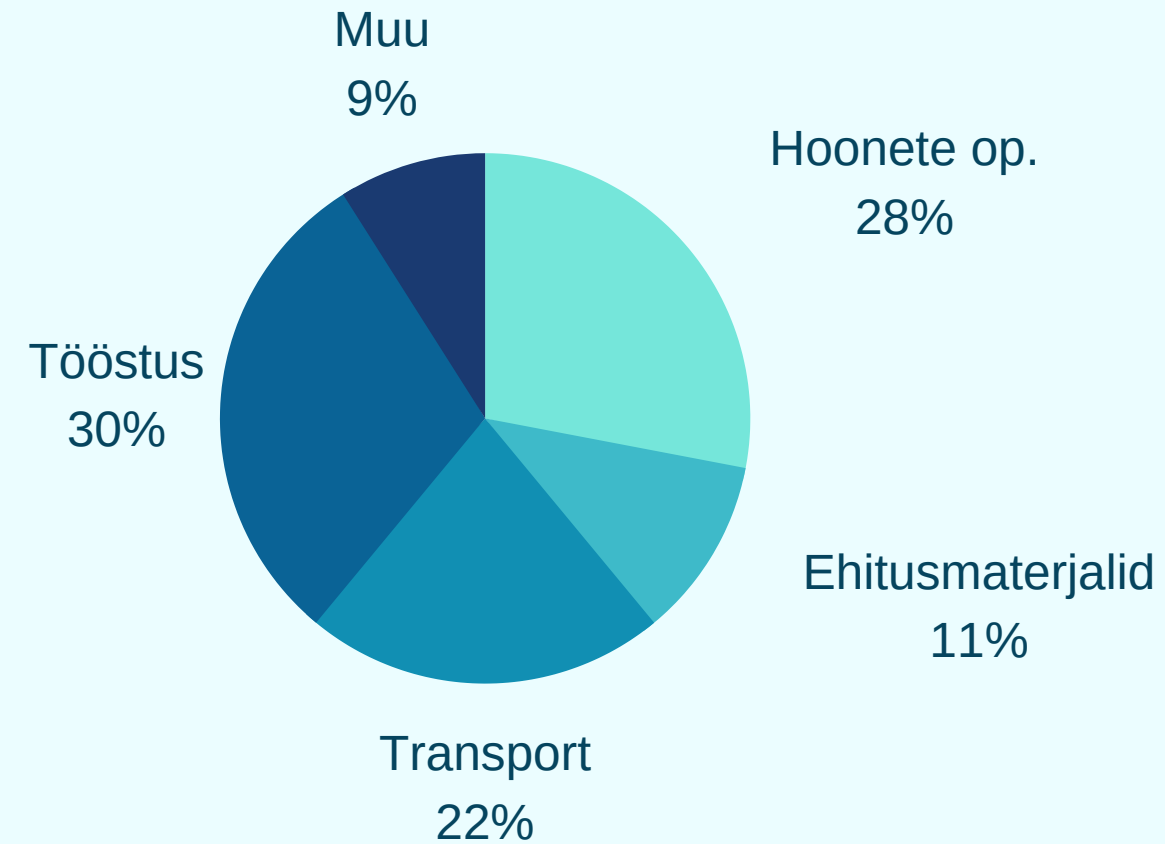
EPD'de koostamine, kvaliteedi kontroll, verifitseerimine vastavalt RTS EPD (Soome) või IBU EPD (Saksamaa) nõuetele

TEADUS- JA HARIDUSTÖÖ

Ekspert Tallinna Tehnikaülikooli Arhitektuuri ja Urbanistika Akadeemias
Lektor Tallinna Tehnikakõrgkoolis

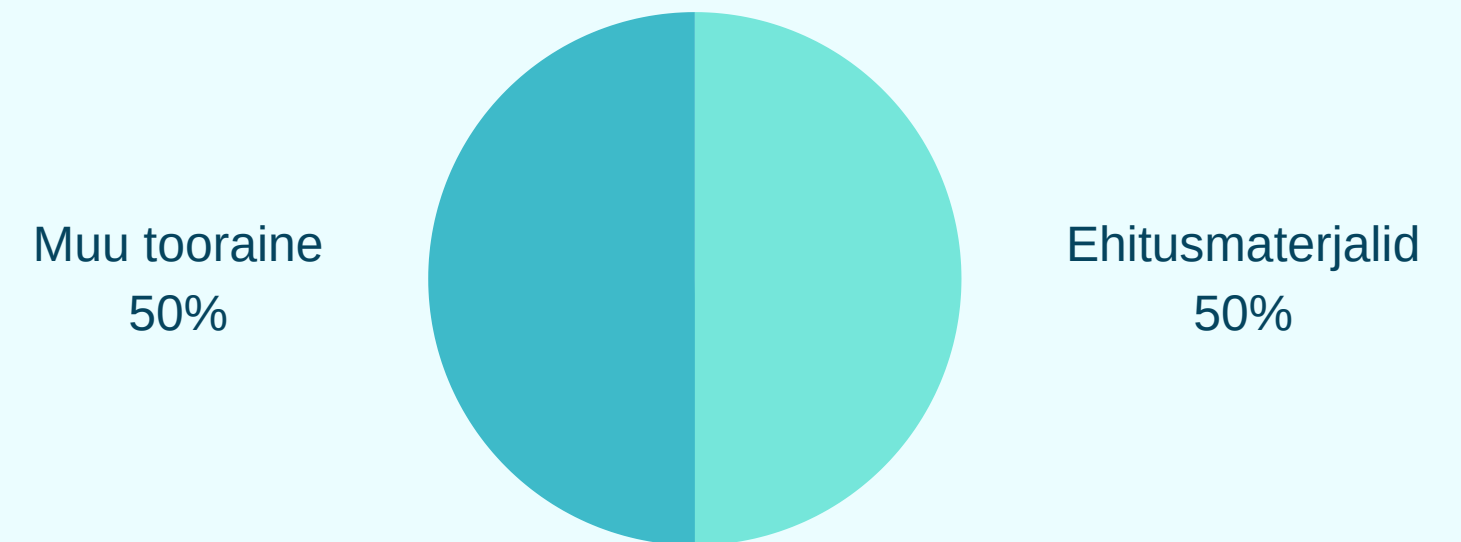
Millist probleemi lahendame?

2050. AASTAKS KLIIMANEUTRAALNE MAJANDUS



CO₂ EMISSIOONID

Maailm



TOORAINNE KAEVANDAMINE

Euroopa

”

AASTAKS 2060 LISANDUB 230 MILJARDIT
RUUTMEETRIT EHITATUD PINDA -
VÕRDNE KOGU GLOBAALSE
OLEMASOLEVA MAHUGA

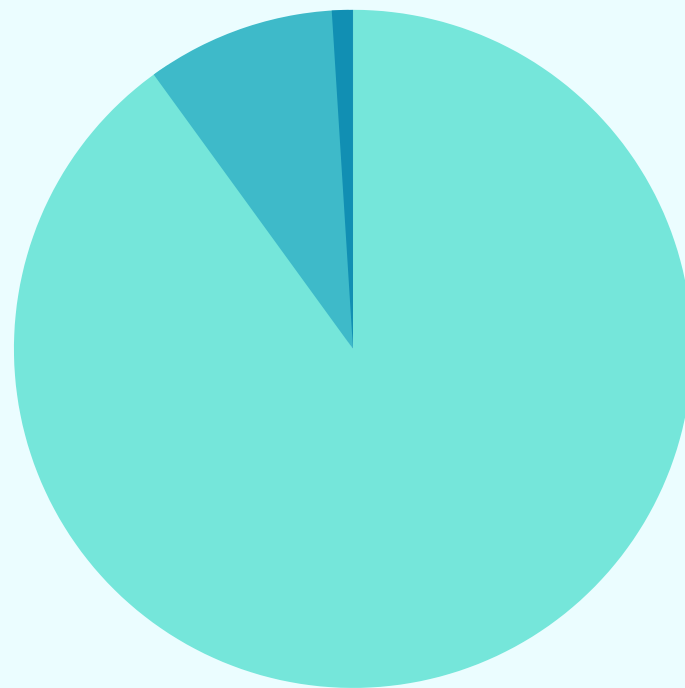
- UN ENVIRONMENT
GLOBAL REVIEW 2017

lcasupport.com | 2020

Keskmine hoone

Ehitusmaterjalid (A1-A3)

9%



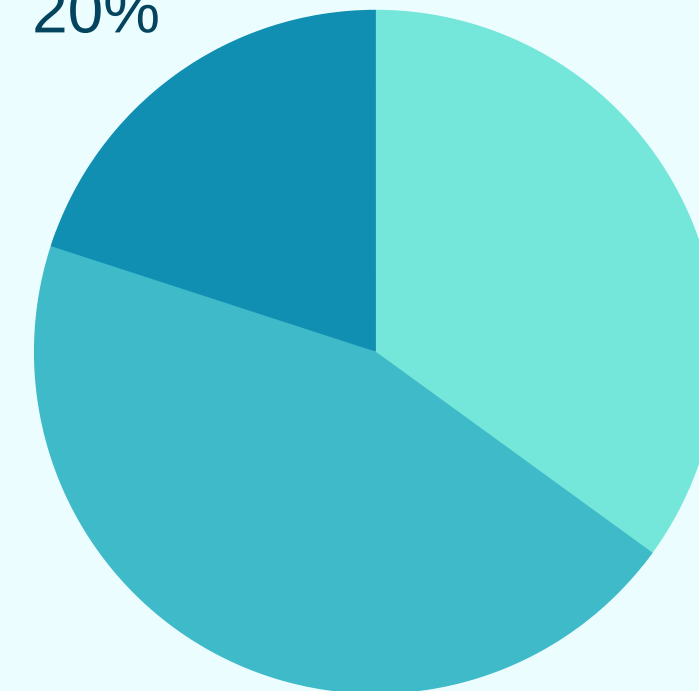
Operatiivne energia (B6)

90%

EESTI

Muu

20%



Ehitusmaterjalid (A1-A3)

35%

Operatiivne energia (B6)

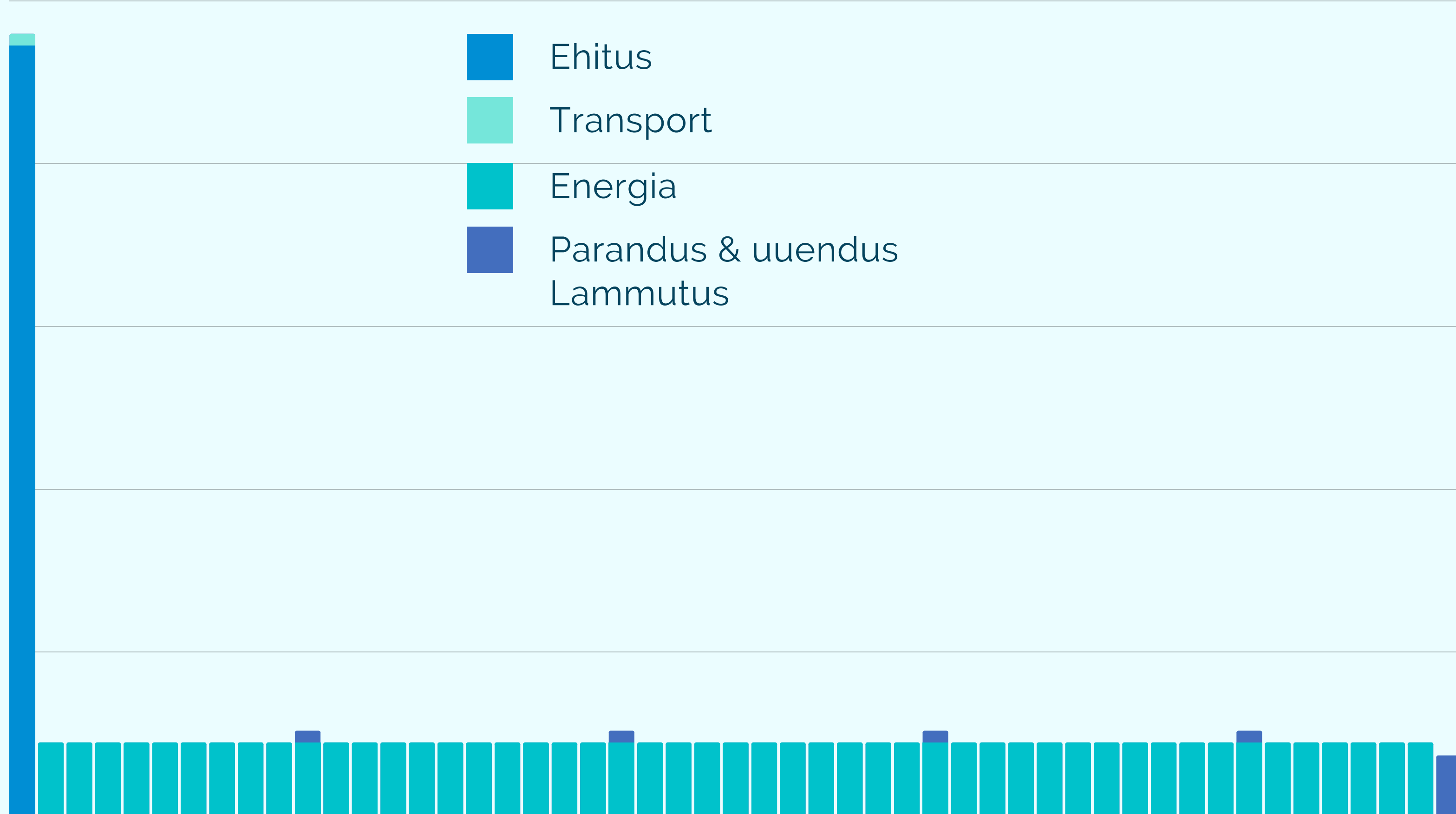
45%

NORRA

CO2 EMISSIONID

1,250,000
1,000,000
750,000
500,000
250,000
0

- Ehitus
- Transport
- Energia
- Parandus & uuendus
Lammutus



AASTAD

OLELUSRINGI HINDAMINE EHK *LIFE CYCLE ASSESSMENT*

Meetod toote elukaare mõjude arvutamiseks:

- kindlaks on määratud arvutuse ulatus ja süsteemi piirid
- võrreldakse sama ühiku alusel (nt 1m², 1m³, 1t,...)

EN 15987: HOONE LCA

EN 15804: EHITUSMATERJALI LCA

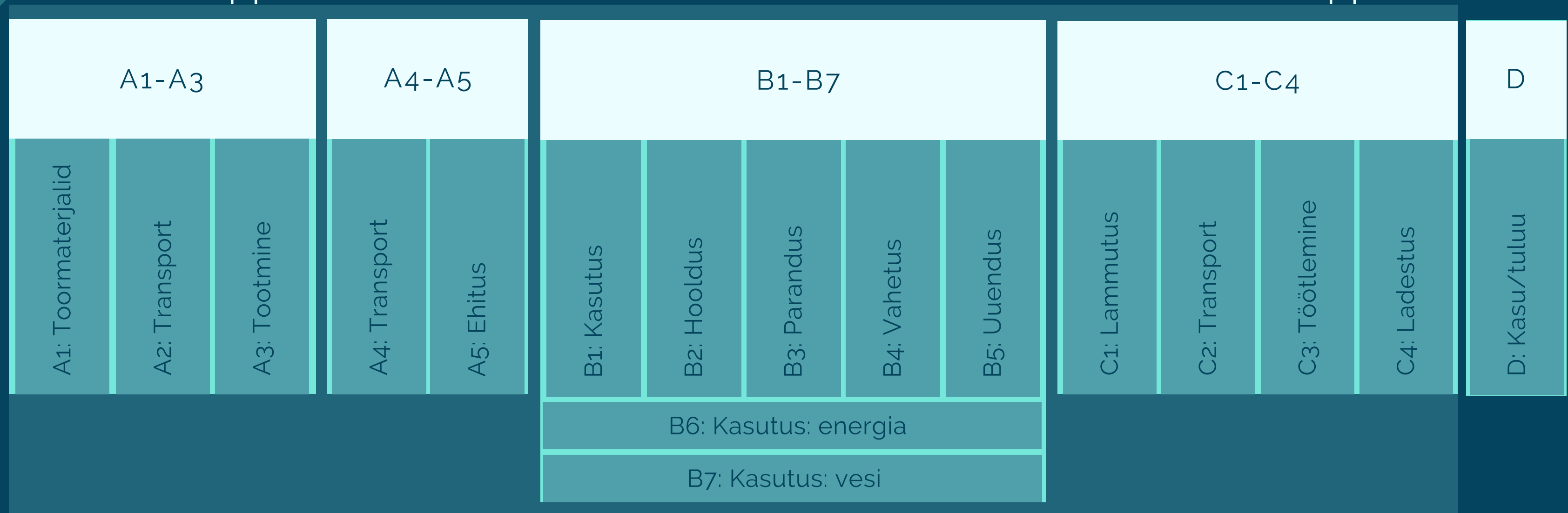
LCA ULATUS: ELUKAARE ETAPID

Toote etapp

Installatsioon

Kasutus

Elukaare lõpp



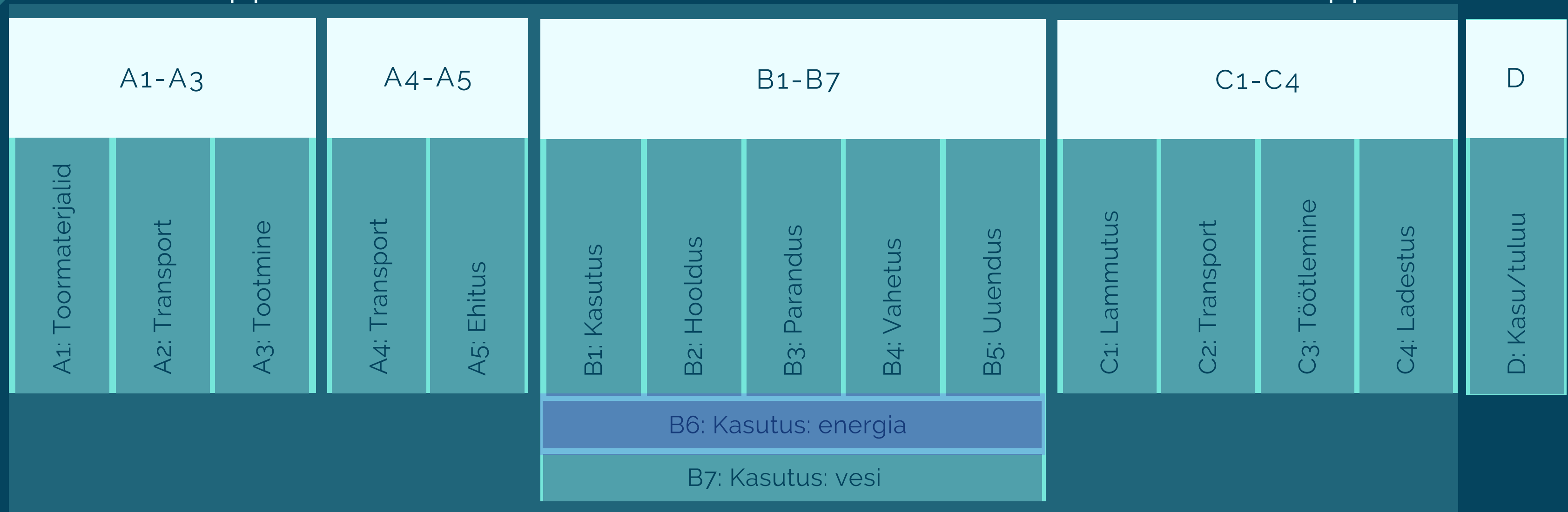
LCA ULATUS: ELUKAARE ETAPID

Toote etapp

Installatsioon

Kasutus

Elukaare lõpp



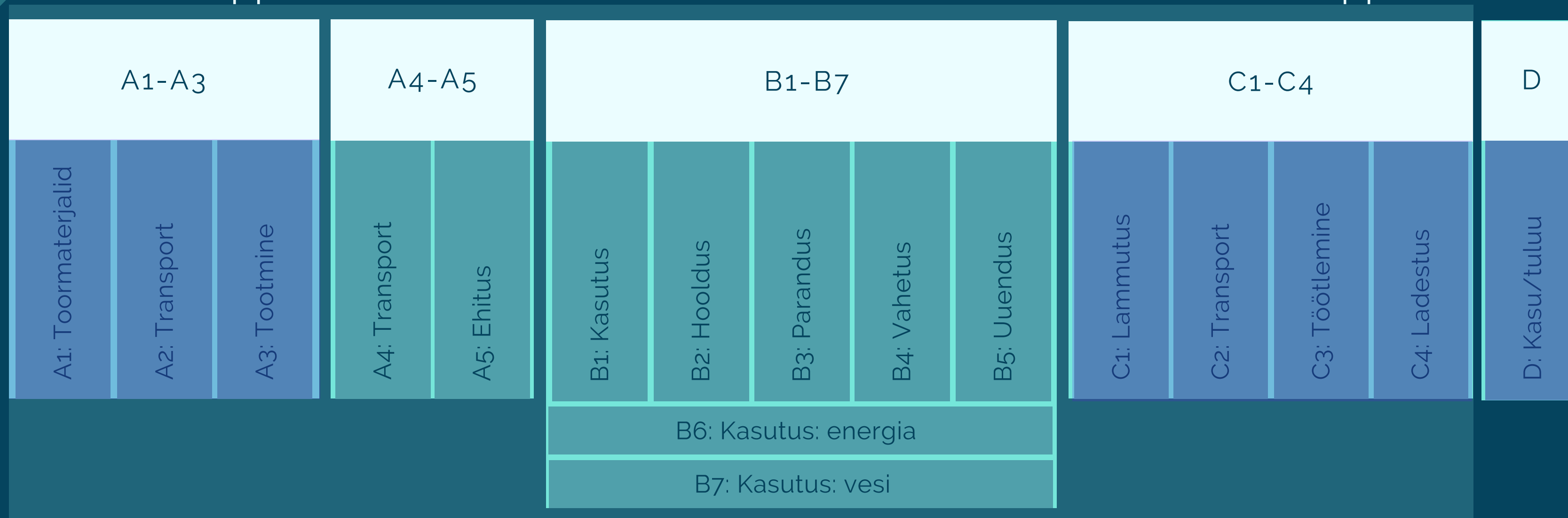
EN 15804+A2

Toote etapp

Installatsioon

Kasutus

Elukaare lõpp





BETOON-ELEMENT:

1. Deklareeritav ühik

TONN/RUUTMEETER/...

- kas tehas toodab ka teisi tooteid?
- tea tootmismahte



Toormaterjalid: A1

Millisest riigist tarnitud? (Energia profiil)

Kas teada spetsiifilised mõjud (toote EPD)?

Kui suur % taaskasutatud materjali? (Teras)



Transport: A2

Millisest riigist tarnitud? (Distantis)

Milline on transpordi meetod? (Veok, Kaubalaev)

Kas on tühivedusid? (täislast)

Sama materjal, mitu tarnijat?



Tootmine: A3

Milliseid lisamaterjale kulub? (Vineer, vormiõli, vesi)

Kas toode on pakendatud?

Kui palju kulub soojust, elektrit, vett?

Millised jäätmed tekivad? (sega-, olme-, ohtlikud-, +kogused)

C1-C4 ja D

ELUKAARE LÕPP

Põhinevad kõige tõenäolisemal stsenaariumil.



C1: Lammutus

1 TONNI LAMMUTUSEKS

x liitrit kütust

x liitrit vett

? jäätmed sorditakse kohapeal?



C2: Transport

- lähim ümbertöötlemis-jaam (km)
- lähim prügila
- transpordi viis
- transpordi distant
- tühivedu?



C3: Jäätmete töötlus

- kas jäätmed sorteeritud?
- mitu % läheb töötlemisele?
- milline töötlus? ümber-töötlus, taas-kasutus, põletus?



C4: Jäätmete ladestus

- kas jäätmed sorteeritud?
- mitu % läheb ladestamisele?



D: Jäätmete kasutus toormaterjalina

- material "end-of-waste" staadiumis
- millist toormaterjali asendab?



Tööriistad

ONE CLICK LCA (BIONOVA)

Eel-verifitseeritud EPD kalkulaatorid
Ecoinvent 3.6 LCI andmebaas ja One Click LCA
andmebaas

OPEN LCA

Valik andmebaase
LCA mudel materjali voona

GABI TARKVARA

GaBi andmebaas
Sisend ökobau.dat andmebaasi

Eesti regioonid EPDd



+ Add ▾

Licenses ▾

HELP ▾

Anni ▾

Main > > Flexible EPD Tool > Input data : Materials (A1-A3)

Cancel

Save

Results

More actions ▾

Hide filters ▾

Import data ▾



✓ Product description

✓ Declared unit

Materials (A1-A3)

✓ Manufacturing (A3/D)

✓ Delivery and installation (A4-A5)

Use stage, whole life-cycle (B1-B7)

✓ End of life (C-D)



Clear

Material

Filter: ▾

Country

🇪🇺 Estonia ✕ ▾

Type

manuf... ✕ ▾

Unit

Filter: ▾

Type of dataset

Filter: ▾

Characteristics

Filter: ▾

Market dataset

Filter: ▾

Save

Results

i The purpose of this query is to gather information about the raw materials of product. Provide all data for the declared unit. Allocate (divide) factory level data if necessary. You can use general cut-off rule if necessary to leave out minor items with low impact.

1. Manufacturing materials - A1 ☁ 0 Tons CO₂e - 85 %

Eesti regiooni EPDd

Product raw materials (EPDs from One Click LCA) [Compare answers](#)  C

Only the values of A1-A3 modules of the EPD are taken into account as part of this product's /



Click a category to see datapoint

- + Choose a category to see data or click here to see all.
- + External thermal insulation composite systems (ETICS) - 32 matches
- + Plain wood/timber (softwood and hardwood) - 5 matches 4%
- + Plywood - 2 matches
- + Sealants (silicone and others) - 1 matches
- + Rock wool insulation - 1 matches
- + Treated or coated timber - 1 matches

Eesti regioonid EPDd



WISA Birch plywood, coated

Program operator, publisher:	Building Information Foundation RTS Malminkatu 16 A 00100 Helsinki http://epd.rts.fi
Owner of the declaration:	UPM Plywood Oy
Name of the product:	WISA Birch plywood, coated
Declaration number:	RTS_18_19
Registration number:	RTS_18_19
ECO Platform reference number:	00000913
Issue date:	25.2.2019
Valid to:	29.10.2023
Scope of the declaration	This environmental product declaration covers the environmental impacts of WISA Birch plywood, coated. The declaration has been prepared in accordance with EN 15804:2012+A1:2013 and ISO 14025 standards and the additional requirements stated in the RTS PCR (English version, 2.6.2016). This declaration covers the life cycle stages from cradle-to-gate.
	Laura Sariola Markku Hedman Secretary of certification group RTS General Director
Verified according to the requirements of EN 15804+A1 (product group rules) Independent verification of the declaration and data, according to ISO14025:2010 ☒ Internal ☐ External Third party verifier: DI Hannu Karppi, Ramboll Finland Oy	

ROCKWOOL®

ENVIRONMENTAL PRODUCT DECLARATION
ECO PLATFORM EPD ref.No 00000379

ROCKWOOL®
Stone Wool Thermal Insulation for buildings
EPD according to EN 15804 and ISO 14025 and 3rd party verified ROCKWOOL Group EPD rules and LCA model

Manufacturer: Rockwool A.S. (CZ), Rockwool Hungary Kft., Rockwool Polska Sp. z o.o.

Owner of the declaration: ROCKWOOL UAB, A.Goltsauto 40B, LT01112 Vilnius, Lithuania

Contact person: Andrius Buska (andrius.buska@rockwool.com)

Date of issue: 01.02.2016
Valid until: 01.02.2021

Verification: External independent verification of the LCA background report and declaration, according to EN ISO 14025:2010

Third-party verifier: Building Research Institute (ITB), 00-611 Warsaw, Filtrów 1. ITB is the member of The European Platform for EPD program operators.

Life Cycle Assessment study
This environmental product declaration is based on a Life Cycle Assessment (LCA) background study according to EN15804:2012, PN-EN 13162+A1:2015-04 and ITB PCR A (PCR based on EN 15804) carried out by: ROCKWOOL® International A/S, Hovedgaden 584, 2640 Hedehusene, Denmark

In general, comparison of the environmental performance of construction products using EPDs shall be based on calculations which cover all life cycle stages (A1-D, "cradle to grave"). More information related to rules of comparability of EPDs can be found in EN 15804 clause 5.3.

ROCKWOOL
CREATE AND PROTECT®

Environmental Product Declaration No. 032/2016

ETICS-CERESIT CERETHERM CLASSIC

Henkel

Issuance date: 01.02.2016
Validity date: 01.02.2021

EPD program operator: Building Research Institute (ITB), 00-611 Warsaw, Filtrów 1 www.itb.pl
Contact person: Dominik Bekierski (d.bekierski@itb.pl)
ITB is the verified member of The European Platform for EPD program operators and LCA practitioners. www.eco-platform.org

Manufacturer: HENKEL Operations Sp. z o.o.
Office: ul. Domaniewska 41, 02-672 Warszawa
Contact person: Karol Bednarczyk, (karol.bednarczyk@henkel.com)
Website: www.henkel.pl

Manufacturing sites information:

Henkel Polska Operations Sp. z o.o. Siera Góra, 26-220 Stąporków Poland	Henkel Polska Operations Sp. z o.o. Pieszycka 6, 58-200 Dzierżonów Poland	Henkel Polska Operations Sp. z o.o. Wrzawa, 64-905 Stobno Poland
Henkel Balti Operations OÜ Klassi 9, 50409 Tartu, Estonia	Henkel Bulgaria Operations EOOD Building Materials Plant Mirovane, 1289 Sofia, Bulgaria	Henkel Srbija d.o.o. Save Kovacevica b.b, 22320 Indjija, Serbia
Henkel Romania Operations SRL Sosaua de Centura Pantelimon no 78, Romania	Henkel Romania Operations SRL Factory Campia Turzii 405100 Street Iancu Jianu 33, Romania	Henkel Romania Operations SRL Str. Petrusului, nr. 1392 Roznov, jud. Neamt Romania



Täna kuulamast Küsimused?