ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025 / ISO 21930

READY MIXED CONCRETE

EPD HUB, HUB-0896
Publishing date 24 November 2023, last updated date 24 November 2023, valid until 24 November 2028

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Transportbetons MB SIA
Address	Cukura street 32, Liepaja, Latvia LV-3414
Contact details	mbbetons@mbbetons.lv
Website	https://www.mbbetons.lv/en

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR version 1.0, 1 Feb 2022
Sector	Construction product
Category of EPD	Third party verified EPD
Scope of the EPD	Cradle to gate with options, A4, A5 and modules C1-C4, D
EPD author	AS UPB, Dzintaru street 17, Liepaja, Latvia
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal certification ☑ External verification
EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	ready mixed concrete C30/37
Additional labels	-
Product reference	-
Place of production	Latvia - Liepaja, Ventspils, Talsi Saldus, Jelgava, Ādaži, Valmiera, Nītaure, Gulbene, Rēzekne, Daugavpils
Period for data	Calendar year 2022
Averaging in EPD	Multiple factories
Variation in GWP-fossil for A1-A3	<10 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 m3
Declared unit mass	2380 kg
GWP-fossil, A1-A3 (kgCO2e)	2,08E+02
GWP-total, A1-A3 (kgCO2e)	2,08E+02
Secondary material, inputs (%)	1.05
Secondary material, outputs (%)	78.6
Total energy use, A1-A3 (kWh)	454.0
Total water use, A1-A3 (m3e)	2,00E+00

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Most advanced and largest ready mix concrete network in Latvia consisting of 11 factories. Distance of supply of ready mix concrete up to 50 km in any region of the country. SIA Transportbetons MB is equipped with a large and modern transport fleet able to supply ready mix concrete safely and quickly to any site located anywhere in Latvia. Transportbetons MB is characterized by quality, flexibility and experience, as well as high level of service and wide range of products. During the course of the development of ready mix concrete sector, so far, Transportbetons MB has included 9 stationary and 2 mobile concrete production units. Due to the situation of production units and the output thereof, we are able to guarantee fast supply of good quality ready mix concrete to any place, at any time and volume. In cooperation with Concrete research center (BPC) performs an independent quality controls for ready mixed concrete.

PRODUCT DESCRIPTION

Product is produced in accordance with EN 206+A2:2021, LVS156-1:2017, EN 206:2013 standards. The product is 1 m3 of C30/37 Ready-Mix Concrete. The material consists of in certain proportions of cement, aggregates, water and chemical admixtures. Ready-Mix concrete mix is typically used for the foundations and slabs of reinforced-concrete frames. Ready-mixed concrete is made by mixing coarse and fine aggregates, cement and water in controlled proportions. Chemical admixtures are used to reduce water content and improve fresh and hardened concrete properties. Delivered to site on a just-in-time basis, ready-mix concrete may be cast into any conceivable shape with almost no limit on volume. When hardened, concrete can carry substantial compressive loads by itself, but is more frequently reinforced to substantially increase its tensile and flexural strength.

The results presented in this EPD are derived from C30/37 Ready-Mix Concrete manufactured at the Saldus plant.

The GWP total A1-A3 of the different strength class from different manufacturing plant are presented in the Annex 1.

Further information can be found at https://www.mbbetons.lv/en/mes

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	100	Latvia
Fossil materials	-	-
Bio-based materials	-	-

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 m3 of ready mixed concrete
Mass per declared unit	2380 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	x	x	x	x	x		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstr./demol.	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR.

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission. Packaging is not provided.

The concrete is manufactured in an automated batching plant where all the raw materials are weighed automatically, according to the recipe. Concrete mixing is done in a close system thus does not cause any losses in production.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts occurred from final products delivery to construction sites (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

Transportation from the manufacturing plants to the building site has been calculated using a most likely scenario for the export of the declared unit around Latvia by lorry. The average distance of transportation from production plants to construction site is assumed as 50 km by lorry. Scenario (A5) is modelled as installation of a typical ready mixed concrete in a building. Fossil fuel for building machinery are included and also losses.

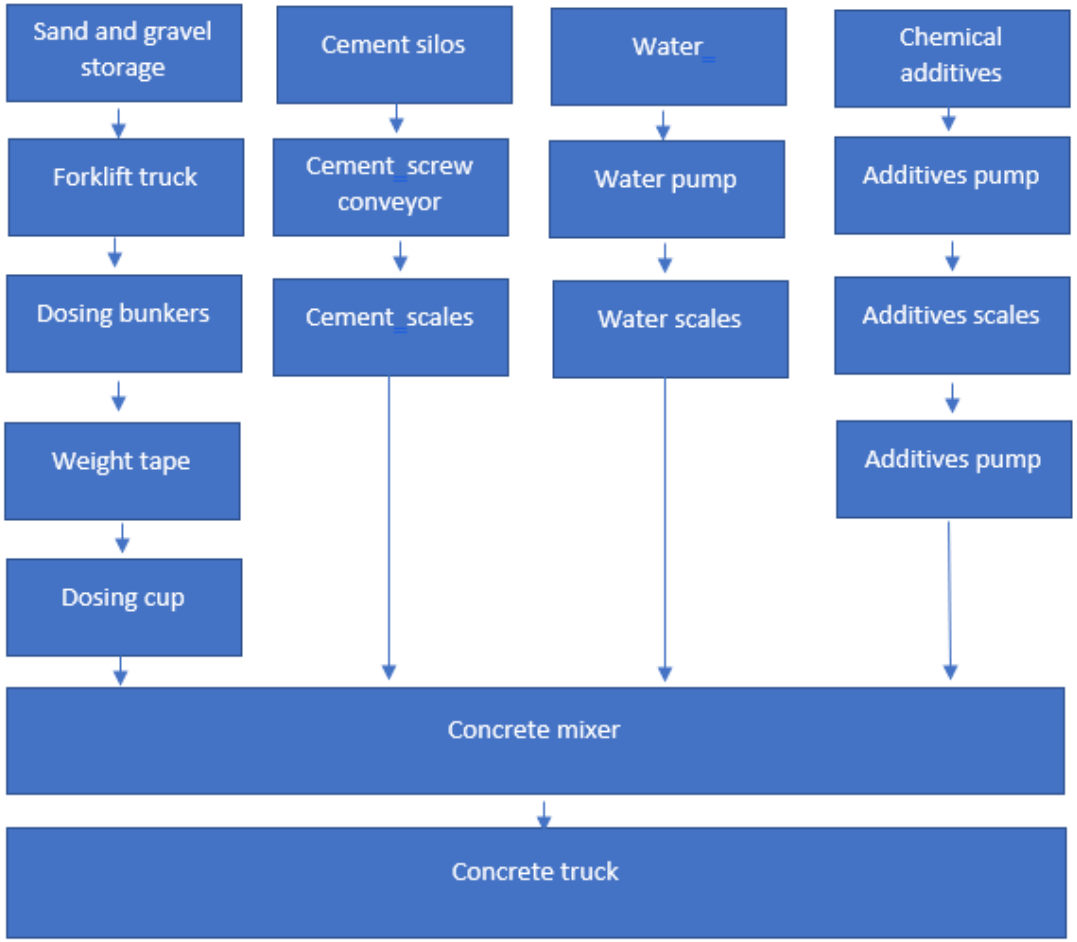
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

At the end-of-life, in the demolition phase 100% of the waste is assumed to be collected as separate construction waste. The demolition process consumes energy in the form of diesel fuel used by building machines (C1). The dismantled concrete elements are delivered to the nearest construction waste treatment plant (C2). At the waste treatment plant waste that can be reused, recycled or recovered for energy is separated and diverted for further use (C3). Unusable materials are disposed of in a landfill (C4). Due to the recycling potential of reinforcement steel and concrete, they can be used as secondary raw material. About 80 % of the concrete are recycled, this avoids the use of virgin raw materials (National waste management plan Latvia for 2021- 2028). Unusable materials are disposed in a landfill (C4), it is assumed that 20 % of concrete is disposed in a landfill. Due to the recycling potential of concrete, they can be used as secondary raw materials. This avoids the use of the virgin raw materials (D).

MANUFACTURING PROCESS



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the reference standard and the applied PCR. The study does not exclude any hazardous materials or substances. The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass. Packaging is not relevant for ready mixed concrete.

The production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy, and water use related to company management and sales activities are excluded.

Carbonation is not taken into account in the calculations. Carbonation is a natural process occurring when carbon dioxide is emitted during cement production is rebound to the concrete during the use and end of life stages of a building.

The modules B1-B7 have not been calculated nor included in the LCA calculations as that is not mandatory for this LCA report

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	No allocation
Packaging materials	Not applicable
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple factories
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	<10 %

Scaling factors for different concrete strength classes depending on factories location please see in Annex 1.

The obtained result for factories differs less than 10 % as the manufacturing processes, raw materials and technologies are similar across for all factories.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. Ecoinvent and One Click LCA databases were used as sources of environmental data.

ENVIRONMENTAL IMPACT DATA

CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1,98E+02	5,52E+00	5,17E+00	2,08E+02	4,14E+00	1,60E+01	MND	MND	MND	MND	MND	MND	MND	3,31E+00	1,04E+01	7,65E+00	2,51E+00	-6,00E+00
GWP – fossil	kg CO_2e	1,97E+02	5,52E+00	5,18E+00	2,08E+02	4,14E+00	1,60E+01	MND	MND	MND	MND	MND	MND	MND	3,31E+00	1,04E+01	7,65E+00	2,51E+00	-6,00E+00
GWP – biogenic	kg CO_2e	7,03E-03	0,00E+00	-7,03E-03	3,16E-18	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP – LULUC	kg CO_2e	2,77E-02	2,07E-03	5,30E-04	3,03E-02	1,55E-03	2,44E-03	MND	MND	MND	MND	MND	MND	MND	3,30E-04	3,88E-03	7,62E-04	2,37E-03	-4,00E-03
Ozone depletion pot.	kg CFC_{-11}e	5,01E-06	1,38E-06	9,70E-07	7,35E-06	1,03E-06	1,59E-06	MND	MND	MND	MND	MND	MND	MND	7,07E-07	2,58E-06	1,64E-06	1,01E-06	-8,40E-07
Acidification potential	mol H^+e	5,77E-01	1,76E-02	3,48E-02	6,29E-01	1,32E-02	8,02E-02	MND	MND	MND	MND	MND	MND	MND	3,44E-02	3,30E-02	7,95E-02	2,36E-02	-5,46E-02
EP-freshwater[2)]	kg Pe	1,24E-04	3,94E-05	2,03E-05	1,84E-04	2,96E-05	3,25E-05	MND	MND	MND	MND	MND	MND	MND	1,10E-05	7,39E-05	2,53E-05	2,63E-05	-9,52E-05
EP-marine	kg Ne	2,21E-01	3,88E-03	1,53E-02	2,40E-01	2,91E-03	3,27E-02	MND	MND	MND	MND	MND	MND	MND	1,52E-02	7,28E-03	3,52E-02	8,16E-03	-1,59E-02
EP-terrestrial	mol Ne	2,49E+00	4,30E-02	1,64E-01	2,70E+00	3,23E-02	3,62E-01	MND	MND	MND	MND	MND	MND	MND	1,67E-01	8,07E-02	3,86E-01	8,97E-02	-2,17E-01
POCP ("smog")[3)]	kg NMVOCe	6,02E-01	1,69E-02	4,56E-02	6,65E-01	1,27E-02	9,66E-02	MND	MND	MND	MND	MND	MND	MND	4,59E-02	3,18E-02	1,06E-01	2,61E-02	-5,05E-02
ADP-minerals & metals[4)]	kg Sbe	4,17E-04	1,35E-05	2,97E-06	4,34E-04	1,01E-05	2,81E-05	MND	MND	MND	MND	MND	MND	MND	1,68E-06	2,53E-05	3,88E-06	5,76E-06	-1,37E-04
ADP-fossil resources	MJ	5,51E+02	8,82E+01	7,64E+01	7,16E+02	6,62E+01	1,13E+02	MND	MND	MND	MND	MND	MND	MND	4,45E+01	1,65E+02	1,03E+02	6,87E+01	-8,66E+01
Water use[5)]	m^3e depr.	2,06E+04	4,07E-01	6,57E-01	2,06E+04	3,05E-01	1,03E+03	MND	MND	MND	MND	MND	MND	MND	1,20E-01	7,63E-01	2,77E-01	2,18E-01	-2,96E+01

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator.

Scaling factors for different concrete strength classes depending on factories location, please see in Annex 1.
Example - Factory location Gulbene, strength class C35/45: *2,08E+02 *1.18 = 245 kgCO2eq/m3*

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	3,83E-06	6,40E-07	1,43E-06	5,89E-06	4,81E-07	2,50E-06	MND	MND	MND	MND	MND	MND	MND	9,22E-07	1,20E-06	1,63E-05	4,75E-07	-1,21E-06
Ionizing radiation[6)]	kBq U235e	3,33E+00	4,54E-01	2,33E-01	4,02E+00	3,41E-01	5,68E-01	MND	MND	MND	MND	MND	MND	MND	2,05E-01	8,52E-01	4,73E-01	3,11E-01	-1,59E+00
Ecotoxicity (freshwater)	CTUe	6,50E+02	7,33E+01	3,08E+01	7,54E+02	5,50E+01	8,86E+01	MND	MND	MND	MND	MND	MND	MND	2,68E+01	1,37E+02	6,19E+01	4,48E+01	-1,47E+02
Human toxicity, cancer	CTUh	2,76E-08	1,91E-09	1,68E-09	3,12E-08	1,43E-09	3,37E-09	MND	MND	MND	MND	MND	MND	MND	1,03E-09	3,58E-09	2,37E-09	1,12E-09	-1,29E-08
Human tox. non-cancer	CTUh	3,31E-07	7,46E-08	2,45E-08	4,30E-07	5,60E-08	6,25E-08	MND	MND	MND	MND	MND	MND	MND	1,94E-08	1,40E-07	4,47E-08	2,93E-08	-1,39E-07
SQP[7)]	-	4,76E+02	1,03E+02	6,77E+00	5,85E+02	7,71E+01	5,23E+01	MND	MND	MND	MND	MND	MND	MND	5,79E+00	1,93E+02	1,34E+01	1,47E+02	-1,99E+02

6) EN 15804+A2 disclaimer for Ionizing radiation, human health. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator; 7) SQP = Land use related impacts/soil quality.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,20E+02	1,14E+00	2,20E+01	1,43E+02	8,56E-01	7,74E+00	MND	MND	MND	MND	MND	MND	MND	2,54E-01	2,14E+00	5,88E-01	5,97E-01	-2,97E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,20E+02	1,14E+00	2,20E+01	1,43E+02	8,56E-01	7,74E+00	MND	MND	MND	MND	MND	MND	MND	2,54E-01	2,14E+00	5,88E-01	5,97E-01	-2,97E+01
Non-re. PER as energy	MJ	5,54E+02	8,82E+01	7,64E+01	7,19E+02	6,62E+01	1,13E+02	MND	MND	MND	MND	MND	MND	MND	4,45E+01	1,65E+02	1,03E+02	6,87E+01	-8,67E+01
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	5,54E+02	8,82E+01	7,64E+01	7,19E+02	6,62E+01	1,13E+02	MND	MND	MND	MND	MND	MND	MND	4,45E+01	1,65E+02	1,03E+02	6,87E+01	-8,67E+01
Secondary materials	kg	2,50E+01	2,48E-02	2,32E-02	2,51E+01	1,86E-02	1,28E+00	MND	MND	MND	MND	MND	MND	MND	1,74E-02	4,66E-02	4,03E-02	1,44E-02	-2,35E-01
Renew. secondary fuels	MJ	1,32E+02	2,19E-04	6,47E-05	1,32E+02	1,64E-04	6,60E+00	MND	MND	MND	MND	MND	MND	MND	5,70E-05	4,11E-04	1,32E-04	3,77E-04	-1,76E-03
Non-ren. secondary fuels	MJ	6,42E+02	0,00E+00	0,00E+00	6,42E+02	0,00E+00	3,21E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,97E+00	1,17E-02	1,55E-02	2,00E+00	8,77E-03	1,06E-01	MND	MND	MND	MND	MND	MND	MND	2,70E-03	2,19E-02	6,25E-03	7,52E-02	-6,87E-01

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	6,08E-01	9,45E-02	7,61E-02	7,78E-01	7,09E-02	1,38E-01	MND	MND	MND	MND	MND	MND	MND	5,96E-02	1,77E-01	1,38E-01	0,00E+00	-6,70E-01
Non-hazardous waste	kg	8,83E+00	1,64E+00	7,18E-01	1,12E+01	1,23E+00	1,48E+00	MND	MND	MND	MND	MND	MND	MND	4,19E-01	3,08E+00	9,68E-01	4,76E+02	-3,63E+00
Radioactive waste	kg	2,42E-03	6,08E-04	3,27E-04	3,35E-03	4,56E-04	7,09E-04	MND	MND	MND	MND	MND	MND	MND	3,13E-04	1,14E-03	7,24E-04	0,00E+00	-6,38E-04

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	3,17E-02	0,00E+00	1,82E+02	1,82E+02	0,00E+00	1,28E+02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,90E+03	0,00E+00	0,00E+00
Materials for energy rec	kg	9,38E-02	0,00E+00	0,00E+00	9,38E-02	0,00E+00	4,69E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	5,06E-01	0,00E+00	0,00E+00	5,06E-01	0,00E+00	2,53E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	2,01E+02	5,47E+00	5,11E+00	2,11E+02	4,10E+00	1,61E+01	MND	MND	MND	MND	MND	MND	MND	3,27E+00	1,03E+01	7,56E+00	2,46E+00	-5,90E+00
Ozone depletion Pot.	kg CFC_{-11}e	4,22E-06	1,09E-06	7,93E-07	6,11E-06	8,18E-07	1,27E-06	MND	MND	MND	MND	MND	MND	MND	5,60E-07	2,04E-06	1,29E-06	8,02E-07	-6,83E-07
Acidification	kg SO_2e	4,07E-01	1,43E-02	2,50E-02	4,46E-01	1,07E-02	5,74E-02	MND	MND	MND	MND	MND	MND	MND	2,45E-02	2,68E-02	5,66E-02	1,78E-02	-3,88E-02
Eutrophication	kg PO_4^3e	8,31E-02	3,02E-03	6,02E-03	9,22E-02	2,27E-03	1,27E-02	MND	MND	MND	MND	MND	MND	MND	5,69E-03	5,67E-03	1,31E-02	3,84E-03	-1,14E-02
POCP (“smog”)	kg C_2H_4e	2,09E-02	6,65E-04	6,47E-04	2,22E-02	4,99E-04	1,96E-03	MND	MND	MND	MND	MND	MND	MND	5,36E-04	1,25E-03	1,24E-03	7,47E-04	-1,75E-03
ADP-elements	kg Sbe	4,16E-04	1,31E-05	2,82E-06	4,32E-04	9,86E-06	2,79E-05	MND	MND	MND	MND	MND	MND	MND	1,65E-06	2,46E-05	3,82E-06	5,68E-06	-1,36E-04
ADP-fossil	MJ	5,51E+02	8,82E+01	7,64E+01	7,16E+02	6,61E+01	1,13E+02	MND	MND	MND	MND	MND	MND	MND	4,45E+01	1,65E+02	1,03E+02	6,87E+01	-8,67E+01

ANNEX 1

SCALING TABLE

Example - Factory location Gulbene, strength class C35/45: *208*1.18 = 245 kgCO2eq/m3*

Strength class/Factory location	C16/20	C20/25	C25/30	C30/37	C35/45	C40/50
Liepāja	0.86	0.89	0.92	0.97	1.05	1.19
Ventspils	0.79	0.82	0.86	0.96	1.06	1.19
Talsi	0.72	0.75	0.79	0.88	1.05	1.18
Saldus	0.80	0.84	0.87	1.00	1.07	1.20
Jelgava	0.76	0.83	0.89	0.96	1.06	1.19
Ādaži	0.69	0.76	0.86	0.92	1.02	1.19
Valmiera	0.72	0.85	0.91	0.98	1.08	1.21
Gulbene	1.01	1.08	1.15	1.15	1.18	1.25
Rēzekne	1.01	1.07	1.14	1.14	1.17	1.24
Daugavpils	0.83	0.90	0.93	1.08	1.12	1.23
Mobile	-	-	0.91	0.99	-	-

VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online
This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited
24.11.2023

VERIFIED ISO 14025