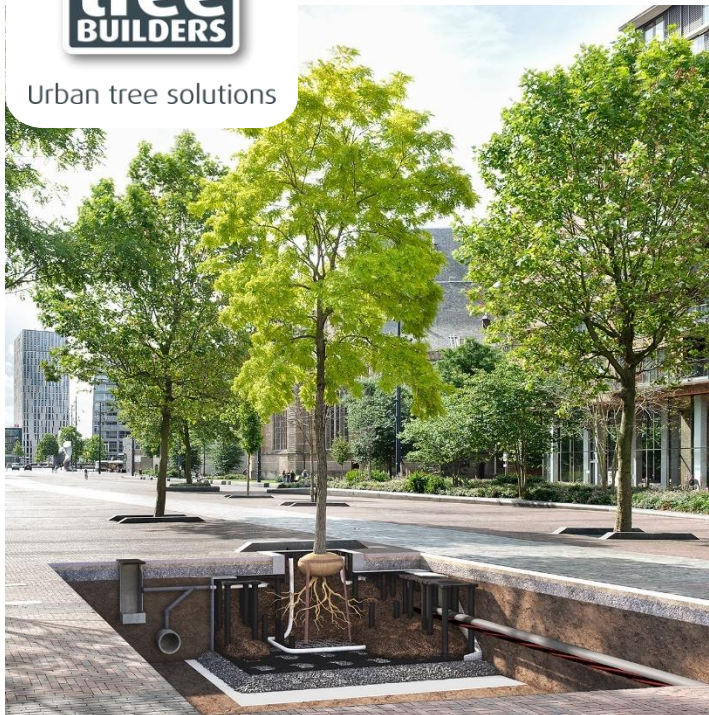


ENVIRONMENTAL PRODUCT DECLARATION

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



Urban tree solutions



TreeParker – GreenMax TreeBuilders

EPD HUB, HUB-1739

Published on 04.07.2024, last updated on 16.07.2024, valid until 04.07.2029.



Created with One Click LCA



GENERAL INFORMATION

MANUFACTURER

Manufacturer	GreenMax-TreeBuilders
Address	De Morgenstond 16, NL-5473HG, Heeswijk-Dinther, The Netherlands
Contact details	info@treebuilders.eu
Website	www.treebuilders.eu

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 1.1, 5 Dec 2023
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	Joost Luyendijk
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal verification <input checked="" type="checkbox"/> 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	TreeParker
Additional labels	TreeParker is sold by TreeBuilders, a member of the GreenMax Group
Product reference	-
Place of production	Przodkowo, Poland
Period for data	January 1st - December 31st 2023
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3	-30% to +28% %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 unit of TreeParker
Declared unit mass	17.24 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	6,23E+01
GWP-total, A1-A3 (kgCO ₂ e)	6,01E+01
Secondary material, inputs (%)	38.9
Secondary material, outputs (%)	887
Total energy use, A1-A3 (kWh)	266
Net fresh water use, A1-A3 (m ³)	0.8

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

TreeBuilders is specialized in providing the best possible growth conditions for urban trees by collaborating closely with local authorities, contractors and landscape architects worldwide. Our aim is to increase the life expectancy of urban trees. Only then can we benefit from the environmental gain that healthy trees have to offer us. Our urban tree planting system allows trees in the urban environment to grow while also providing the best method for sustainable urban water management. By connecting blue, green and grey urban infrastructures we create sustainable urban landscapes and future-proof cities.

PRODUCT DESCRIPTION

The TreeParker soil-cell system is a modular designed product to accommodate the healthy growth of a tree in the urban environment thus providing environmental benefits in the city. A tree-parker unit consists of a frame, 4 vertical posts and a deck. The posts of the system can be cut to length between 400 mm to 1500 mm. depending on the system requirements provided by the (landscape architect). The TreeParker system is designed in such way that an average traffic load can be carried and transferred into the deeper layers of soil. This results in a rootball chamber that contains a volume of fertilized, non compacted soil providing an optimized tree growing environment without interfering with surrounding surface and sub-surface infrastructure.

The frame and deck are made from glass fibre reinforced PP. The posts are made from PVC. The product has a dark grey colour scheme, comparable to RAL7016. A single TreeParker unit covers approximately 0,36 square meter at a variable height.

The modular design offers flexibility during design and installation, but also guarantees a high recycling rate. Individual components can be separated during disassembly at the end-of-life stage, therefor different materials can be separated on site.

Further information can be found at www.treebuilders.eu.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Metals	-	-
Minerals	13.75	EU
Fossil materials	86.25	EU
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	0.98

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 unit of TreeParker
Mass per declared unit	17.24 kg
Functional unit	-
Reference service life	100 years

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 as well as packaging materials 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.

Raw materials used for the frame and deck in this product are a blend of glass fibre reinforced and recycled polypropylene (PP). The vertical posts are made of polyvinylchloride (PVC). The distances between the manufacturing locations and the GreenMax warehouse has been determined. Distances of raw materials and the final product consist only of road transport. The frame and deck are formed through injection

moulding, vertical posts are extrusion profiling, cut-to-length. It is considered 1% of manufacturing loss within the injection moulding and extrusion processes.

The electric energy required for the injection moulding process consist of 100% renewable sources. The vertical posts are packaged in recyclable cardboard boxes, strapped to a wooden pallet. The frames and decks are stacked directly on a wooden pallet and wrapped in a PE film.

TRANSPORT AND INSTALLATION (A4-A5)

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

Transportation impact from final product delivery to construction sites (A4) cover fuel direct emissions, environmental impact of fuel production, as well as related infrastructure emissions. The average distance from the GreenMax warehouse to the installation site is 589 km by road transport combined with 350 km by sea freight (if applicable), based on 1 year of averaged sales data.

Transport does not cause any loss of products, as the components are packed properly.

The product is assembled manually, however site preparation is done by use of a hydraulic excavator. The amount of excavated soil is removed from the installation site by using a tipper lorry. The excavated soil is moved to a depot, waiting to be reused. Average distance from site to depot is assumed to be 50 km.

Excavation activities are calculated using the EcoInvent datapoint. Transport of the excavated soil cover fuel direct emissions, environmental impact of fuel production, as well as related infrastructure emissions. To complete the installation of the product a geotextile fabric is required, which is included in this part of the calculation.

Once the installation of TreeParker unit is completed, the entire assembly is filled with a mixture of fertilized soil providing necessary nutrients for healthy growth of the tree.

The impact of this fertilized soil is calculated using the EPD for this product, Once the system is filled with soil the associated packaging of the declared unit is reaching the end of life. It is assumed that the wood pallet, cardboard box and PE film will be recycled according to local legislation. Average distance from depot to installation site is assumed to be 50 km. Transport of the fertilized soil cover fuel direct emissions, environmental impact of fuel production, as well as related infrastructure emissions.

All packaging materials are 100% recyclable materials.

PRODUCT USE AND MAINTENANCE (B1-B7)

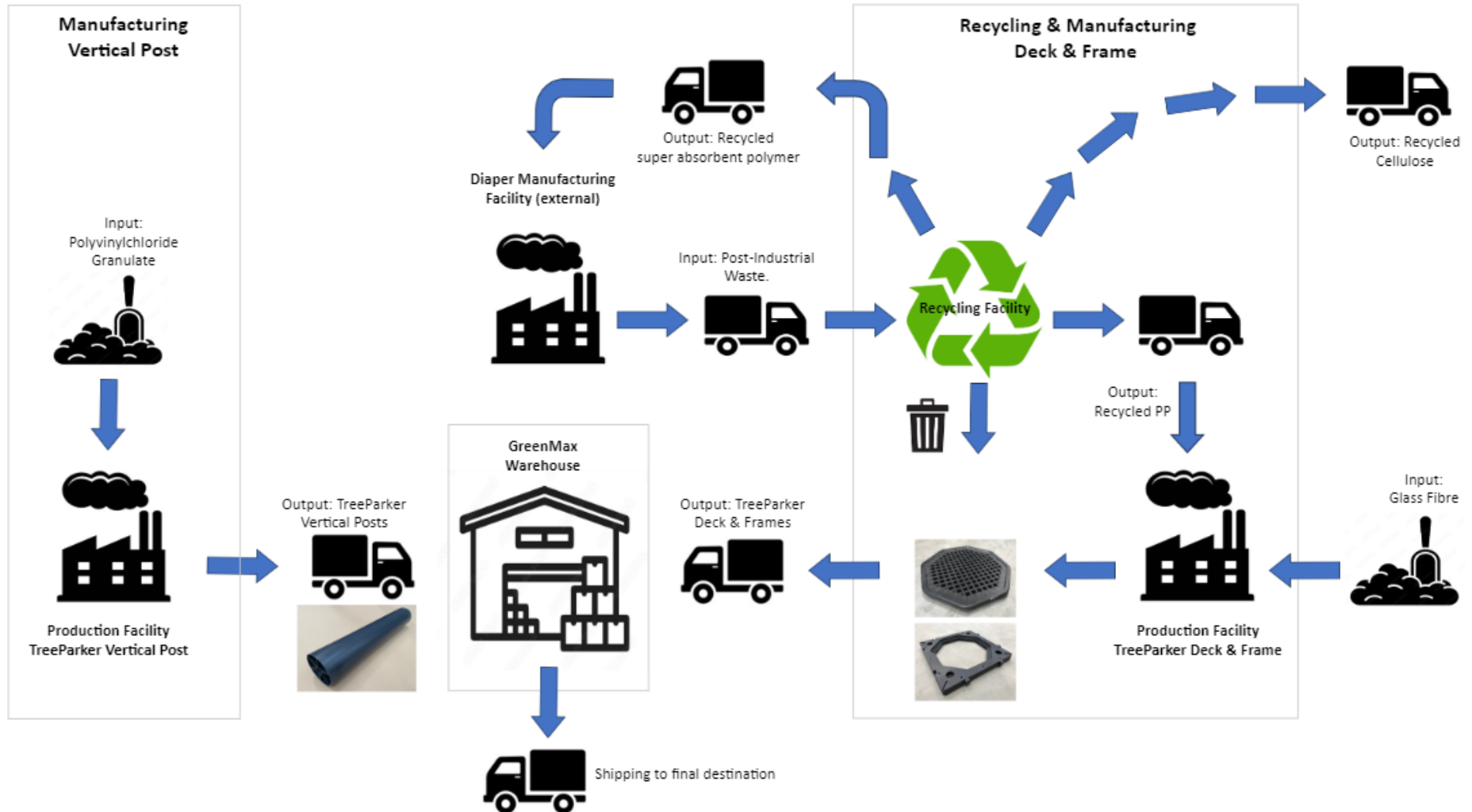
This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

The assumption is that the same equipment and methodologies for construction are used for the de-construction of the product (C1). The end-of-life product is manually disassembled on site, allowing efficient processing of the individual components. Current figures for end-of-life treatment of the materials classified as waste are conservatively increased, where it is expected that the amount of recycled content will increase during the expected lifetime of the product. (C3-C4). The end of waste scenarios for PVC, PP and Geotextile are (listed in same order): 10/60/60% incineration, 85/40/30% recycling and 5/0/10% landfill for materials used. Benefits outside the system boundaries are assumed to be the net positive carbon gains because of the decrease in demand for raw polymers as a result of the recycling of the individual product components, and packaging, the same is applied to wood chipping from the recycling of the wooden pallets provided (D)

MANUFACTURING PROCESS

TREEPARKER Manufacturing A1-A3



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.

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	Allocated by mass or volume
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

AVERAGES AND VARIABILITY

Type of average	Multiple products
Averaging method	Averaged by shares of total mass
Variation in GWP-fossil for A1-A3	-30% to +28% %

The LCA calculations are based upon the Declared Unit (DU) consisting of a single TreeParker Unit, with a system height of 1000 mm.

The system height for TreeParker however may be adjusted to fit project requirements. The system height ranges from 0,5 m - 1,5 m, referred to as Project Unit (PU)

The covered surface is fixed for each TreeParker unit, 0,36 m² / unit.

Please use conversion table in the document appendix in order to convert the declared unit GWP (A1-A3) into the specific project unit GWP (A1-A3).

Use equation below in order to calculate the Project GWP (A1-A3):

$$\text{Project GWP (A1-A3)} = \text{PU GWP (A1-A3)} \times (\text{Area covered (m}^2\text{)} / 0,36)$$

OR

$$\text{Project GWP Total A1-A3} = \text{PU GWP Total (A1-A3)} \times \text{number of units}$$

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. The EPD Generator uses Ecoinvent v3.8, Plastics Europe, Federal LCA Commons and One Click LCA databases 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 ₂ e	5,09E+01	2,88E+00	6,33E+00	6,01E+01	9,49E-01	3,59E+01	MND	MND	MND	MND	MND	MND	MND	4,63E-01	1,93E-01	1,74E+01	5,97E-02	-2,69E+01
GWP – fossil	kg CO ₂ e	5,09E+01	2,88E+00	8,55E+00	6,23E+01	9,48E-01	3,37E+01	MND	MND	MND	MND	MND	MND	MND	4,63E-01	1,93E-01	1,74E+01	5,97E-02	-2,69E+01
GWP – biogenic	kg CO ₂ e	0,00E+00	0,00E+00	-2,22E+00	-2,22E+00	0,00E+00	2,22E+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 ₂ e	6,00E-02	1,07E-03	4,87E-03	6,59E-02	3,89E-04	1,41E-02	MND	MND	MND	MND	MND	MND	MND	5,76E-05	8,00E-05	1,76E-03	2,61E-05	-2,19E-02
Ozone depletion pot.	kg CFC ₁₁ e	1,02E-05	6,69E-07	1,93E-07	1,11E-05	2,11E-07	7,15E-06	MND	MND	MND	MND	MND	MND	MND	9,86E-08	4,18E-08	3,07E-07	8,81E-09	-7,56E-06
Acidification potential	mol H ⁺ e	2,52E-01	1,15E-02	6,12E-02	3,25E-01	3,27E-03	1,24E-01	MND	MND	MND	MND	MND	MND	MND	4,70E-03	5,88E-04	6,96E-03	2,40E-04	-1,59E-01
EP-freshwater ²⁾	kg Pe	1,98E-03	2,34E-05	1,09E-03	3,09E-03	7,98E-06	3,02E-04	MND	MND	MND	MND	MND	MND	MND	2,34E-06	1,63E-06	4,45E-05	4,16E-07	-1,03E-03
EP-marine	kg Ne	4,57E-02	3,24E-03	7,45E-03	5,64E-02	7,14E-04	3,23E-02	MND	MND	MND	MND	MND	MND	MND	2,06E-03	1,24E-04	2,07E-03	9,11E-05	-2,35E-02
EP-terrestrial	mol Ne	4,99E-01	3,57E-02	8,21E-02	6,17E-01	7,93E-03	3,57E-01	MND	MND	MND	MND	MND	MND	MND	2,26E-02	1,38E-03	2,27E-02	9,09E-04	-2,63E-01
POCP (“smog”) ³⁾	kg NMVOCe	1,53E-01	1,18E-02	2,35E-02	1,88E-01	2,85E-03	1,18E-01	MND	MND	MND	MND	MND	MND	MND	6,22E-03	5,04E-04	6,37E-03	2,70E-04	-8,11E-02
ADP-minerals & metals ⁴⁾	kg Sbe	1,23E-03	6,83E-06	3,03E-05	1,26E-03	2,93E-06	1,52E-04	MND	MND	MND	MND	MND	MND	MND	3,26E-07	6,64E-07	2,01E-05	9,54E-08	-2,65E-04
ADP-fossil resources	MJ	9,20E+02	4,37E+01	9,80E+01	1,06E+03	1,41E+01	5,07E+02	MND	MND	MND	MND	MND	MND	MND	6,20E+00	2,80E+00	1,11E+01	6,63E-01	-4,85E+02
Water use ⁵⁾	m ³ e depr.	2,17E+01	1,96E-01	2,46E+00	2,44E+01	6,24E-02	2,47E+00	MND	MND	MND	MND	MND	MND	MND	2,40E-02	1,24E-02	8,00E-01	4,16E-03	-1,09E+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.

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	2,40E-06	3,31E-07	1,53E-07	2,88E-06	8,73E-08	3,14E-06	MND	MND	MND	MND	MND	MND	MND	1,25E-07	1,59E-08	1,05E-07	4,86E-09	-1,44E-06
Ionizing radiation ⁶⁾	kBq U235e	5,36E+00	2,10E-01	3,00E-01	5,87E+00	6,66E-02	2,29E+00	MND	MND	MND	MND	MND	MND	MND	2,90E-02	1,31E-02	1,13E-01	3,30E-03	-2,08E+00
Ecotoxicity (freshwater)	CTUe	9,44E+02	3,90E+01	1,30E+02	1,11E+03	1,28E+01	4,41E+02	MND	MND	MND	MND	MND	MND	MND	4,12E+00	2,57E+00	1,29E+02	1,79E+00	-5,26E+02
Human toxicity, cancer	CTUh	2,89E-08	9,63E-10	6,02E-09	3,59E-08	3,45E-10	1,24E-08	MND	MND	MND	MND	MND	MND	MND	2,35E-10	7,15E-11	4,46E-09	2,07E-11	-1,32E-08
Human tox. non-cancer	CTUh	9,12E-07	3,85E-08	1,61E-07	1,11E-06	1,18E-08	4,07E-07	MND	MND	MND	MND	MND	MND	MND	3,02E-09	2,35E-09	5,77E-08	5,40E-10	-3,68E-07
SQP ⁷⁾	-	1,92E+02	5,04E+01	1,84E+02	4,27E+02	1,23E+01	3,68E+02	MND	MND	MND	MND	MND	MND	MND	8,47E-01	2,07E+00	1,08E+01	1,64E+00	-2,61E+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	6,43E+01	4,99E-01	4,18E+01	1,07E+02	1,63E-01	6,37E+00	MND	MND	MND	MND	MND	MND	MND	5,25E-02	3,31E-02	1,26E+00	1,39E-02	-4,98E+01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,94E+01	1,94E+01	0,00E+00	-1,94E+01	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	6,43E+01	4,99E-01	6,13E+01	1,26E+02	1,63E-01	-1,31E+01	MND	MND	MND	MND	MND	MND	MND	5,25E-02	3,31E-02	1,26E+00	1,39E-02	-4,98E+01
Non-re. PER as energy	MJ	7,10E+02	4,38E+01	9,65E+01	8,50E+02	1,41E+01	4,97E+02	MND	MND	MND	MND	MND	MND	MND	6,20E+00	2,80E+00	1,11E+01	6,64E-01	-3,33E+02
Non-re. PER as material	MJ	4,73E+02	0,00E+00	-3,18E+00	4,70E+02	0,00E+00	1,12E+01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-4,72E+02	-8,94E+00	0,00E+00
Total use of non-re. PER	MJ	1,18E+03	4,38E+01	9,33E+01	1,32E+03	1,41E+01	5,08E+02	MND	MND	MND	MND	MND	MND	MND	6,20E+00	2,80E+00	-4,61E+02	-8,28E+00	-3,33E+02
Secondary materials	kg	6,71E+00	1,22E-02	2,36E-01	6,96E+00	4,41E-03	3,46E+02	MND	MND	MND	MND	MND	MND	MND	4,41E-03	9,23E-04	3,42E-02	2,40E-04	6,91E+00
Renew. secondary fuels	MJ	1,25E-01	1,22E-04	5,99E-01	7,24E-01	5,21E-05	1,84E-03	MND	MND	MND	MND	MND	MND	MND	8,56E-06	1,18E-05	3,58E-04	9,50E-06	-1,17E-02
Non-ren. secondary fuels	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
Use of net fresh water	m ³	5,43E-01	5,67E-03	2,49E-01	7,98E-01	1,73E-03	6,77E-02	MND	MND	MND	MND	MND	MND	MND	4,79E-04	3,36E-04	1,95E-02	7,34E-04	-3,12E-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	3,54E+00	5,70E-02	1,02E+00	4,61E+00	1,97E-02	6,72E-01	MND	MND	MND	MND	MND	MND	MND	1,25E-02	4,03E-03	1,00E-01	0,00E+00	-1,93E+00
Non-hazardous waste	kg	8,29E+01	9,40E-01	4,78E+01	1,32E+02	3,16E-01	1,29E+01	MND	MND	MND	MND	MND	MND	MND	9,06E-02	6,44E-02	7,07E+00	2,77E+00	-5,72E+01
Radioactive waste	kg	1,81E-03	2,94E-04	1,10E-04	2,22E-03	9,43E-05	3,19E-03	MND	MND	MND	MND	MND	MND	MND	4,23E-05	1,87E-05	2,11E-05	0,00E+00	-8,64E-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	1,72E-01	1,72E-01	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	8,64E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	6,65E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,30E+00	0,00E+00	0,00E+00
Materials for energy rec	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	1,62E+02	0,00E+00	0,00E+00
Exported energy	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	1,57E+02	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 ₂ e	4,96E+01	2,85E+00	8,43E+00	6,09E+01	9,39E-01	3,33E+01	MND	MND	MND	MND	MND	MND	MND	4,57E-01	1,91E-01	1,74E+01	5,28E-02	-2,60E+01
Ozone depletion Pot.	kg CFC ₋₁₁ e	9,91E-06	5,30E-07	1,66E-07	1,06E-05	1,67E-07	5,67E-06	MND	MND	MND	MND	MND	MND	MND	7,82E-08	3,31E-08	3,02E-07	6,99E-09	-7,41E-06
Acidification	kg SO ₂ e	2,09E-01	9,00E-03	5,24E-02	2,70E-01	2,66E-03	9,83E-02	MND	MND	MND	MND	MND	MND	MND	3,36E-03	4,79E-04	5,36E-03	1,81E-04	-1,34E-01
Eutrophication	kg PO ₄ ³ e	8,84E-02	2,03E-03	3,57E-02	1,26E-01	5,56E-04	2,22E-02	MND	MND	MND	MND	MND	MND	MND	7,97E-04	1,06E-04	8,77E-03	1,39E-03	-3,85E-02
POCP ("smog")	kg C ₂ H ₄ e	1,08E-02	3,65E-04	2,18E-03	1,33E-02	1,21E-04	5,91E-03	MND	MND	MND	MND	MND	MND	MND	7,93E-05	2,32E-05	3,03E-04	1,16E-05	-6,57E-03
ADP-elements	kg Sbe	4,37E-04	6,62E-06	2,99E-05	4,73E-04	2,86E-06	1,49E-04	MND	MND	MND	MND	MND	MND	MND	3,22E-07	6,48E-07	1,55E-05	9,20E-08	-2,28E-04
ADP-fossil	MJ	9,19E+02	4,37E+01	9,80E+01	1,06E+03	1,41E+01	4,66E+02	MND	MND	MND	MND	MND	MND	MND	6,20E+00	2,80E+00	1,11E+01	6,63E-01	-4,85E+02

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
04.07.2024



APPENDIX: DECLARED UNIT TO PROJECT UNIT CONVERSION TABLE

TreeParker GWP (A1-A3) conversion table			
<i>to convert the declared unit to a project unit</i>			
System height	Project Unit weight	GWP Total (A1-A3)	GWP Fossil (A1-A3)
(cm)	(kg)	(kgCO ₂ e)	(kgCO ₂ e)
50	13,020	4,17E+01	4,38E+01
55	13,442	4,35E+01	4,57E+01
60	13,864	4,53E+01	4,76E+01
65	14,286	4,71E+01	4,95E+01
70	14,708	4,89E+01	5,14E+01
75	15,130	5,07E+01	5,34E+01
80	15,552	5,25E+01	5,53E+01
85	15,974	5,43E+01	5,72E+01
90	16,396	5,61E+01	5,91E+01
95	16,818	5,79E+01	6,10E+01
Declared Unit	100	17,240	6,01E+01
	105	17,662	6,16E+01
	110	18,084	6,34E+01
	115	18,506	6,52E+01
	120	18,928	6,70E+01
	125	19,350	6,88E+01
	130	19,772	7,06E+01
	135	20,194	7,24E+01
	140	20,616	7,42E+01
	145	21,038	7,60E+01
	150	21,460	7,78E+01