

ENVIRONMENTAL PRODUCT DECLARATION

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

Terrain Fuze HDPE Expansion Socket - 110mm Black
Polypipe Building Services



EPD HUB, HUB-2944

Published on 07.02.2025, last updated on 07.02.2025, valid until 06.02.2030

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Polypipe Building Services
Address	College Road, New Hythe Business Park, Aylesford, Kent, ME20 7PJ, United Kingdom
Contact details	commercialenquiries@polypipe.com
Website	www.polypipe.com/commercial-building-services

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	Private EPD
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Nigel Delo, Chris Goodwin, Giles Coombes, Andrew Croft and Dylan Stoppard
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	Terrain Fuze HDPE Expansion Socket - 110mm Black
Additional labels	911.40B, 911.50B, 911.56B, 911.75B, 911.160B
Product reference	911.110B
Place of production	Aylesford, United Kingdom
Period for data	Calendar year 2023
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	0 %

ENVIRONMENTAL DATA SUMMARY

Declared unit	1x Terrain Fuze HDPE Expansion Socket - 110mm Black
Declared unit mass	0.527 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	1,91E+00
GWP-total, A1-A3 (kgCO ₂ e)	1,71E+00
Secondary material, inputs (%)	12.1
Secondary material, outputs (%)	73
Total energy use, A1-A3 (kWh)	9.02
Net freshwater use, A1-A3 (m ³)	0.02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Polypipe Building Services is a UK manufacturer of plastic piping systems for water management and supply systems, servicing the commercial and industrial sectors of the UK construction Industry.

Part of the Genuit Group, we aim to help create a better built environment by developing and producing sustainable solutions to the key challenges in water, climate, and ventilation management.

Polypipe Building Services are specialists in providing engineered above ground drainage and supply systems, leveraging offsite fabrication to design and deliver solutions to mechanical and public health engineers, M&E contractors as well as local authorities. Polypipe Building Services houses the industry leading brand Terrain drainage systems and has been delivering solutions to commercial, multiple occupancy residential, healthcare, education, and leisure projects for over 60 years.

PRODUCT DESCRIPTION

A modern high-density polyethylene system with many advantages over cast iron and other traditional systems. Terrain FUZE is a top-to-bottom solution for all above ground drainage and many chemical waste applications.

Utilising the intrinsic properties of high-density polyethylene, Terrain FUZE offers greater benefits above and beyond more traditional materials and performs significantly better when tested for impact and abrasion resistance, chemical corrosion and extreme temperatures. The lightweight nature of Terrain FUZE allows the product to be installed quickly and efficiently, giving direct, resource-saving benefits to specifiers and installers.

Terrain FUZE is available as a comprehensive range of pipe sizes and fittings

and is ideal for all commercial above ground drainage installations. Terrain FUZE is also highly suited for fabrication and, when working with the Polypipe Advantage offsite fabrication service, can be used to develop highly customised solutions that fit the precise requirements of any project.

Further information can be found at www.polypipe.com/commercial-building-services.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	0	-
Fossil materials	100	EU
Bio-based materials	0	-

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	0.0545

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1x Terrain Fuze HDPE Expansion Socket - 110mm Black
Mass per declared unit	0.527 kg
Functional unit	-
Reference service life	50 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	Deconstruction/ demolition	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 material pellets are manufactured into a product via a Moulding machine. A seal is then added to the part by our Assembly team to create a final product. The product is then placed into a cardboard carton, taped and placed onto a wooden pallet. Electricity consumed is split between renewable energy via wind turbines (32% supported by a Renewable Energy Guarantee of Origin - REGO) and 68% by an onsite Combined Heat and Energy Plant - CHP. Production scrap along with headwaste that cannot be reprocessed on site is sent to local waste processing (A3).

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.

The average transport distance to builders merchants (319km) and from builders merchants to site of installation (40km). This was calculated using a comprehensive sample of products shipped throughout 2023. This could vary depending on location of builders merchants and installation. All vehicles used are to Euro 5 standard and use HVO biodiesel. There are no losses associated with transport because the product is wrapped and secured effectively. Volume capacity utilisation is assumed to be that for packaged products.

The installation of the declared unit requires the use of a forklift truck to take the product from the vehicle on to site ready for installation. The jointing method used is butt welding.

At Polypipe Building Services we offer a collection and recovery service for product and packaging through our distribution channel, for all plastic waste, which can then be recycled and reused at our Aylesford site. However, we

realise that not everyone will use this and therefore the reality is that some of our product and packaging will become part of the general site waste.

PRODUCT USE AND MAINTENANCE (B1-B7)

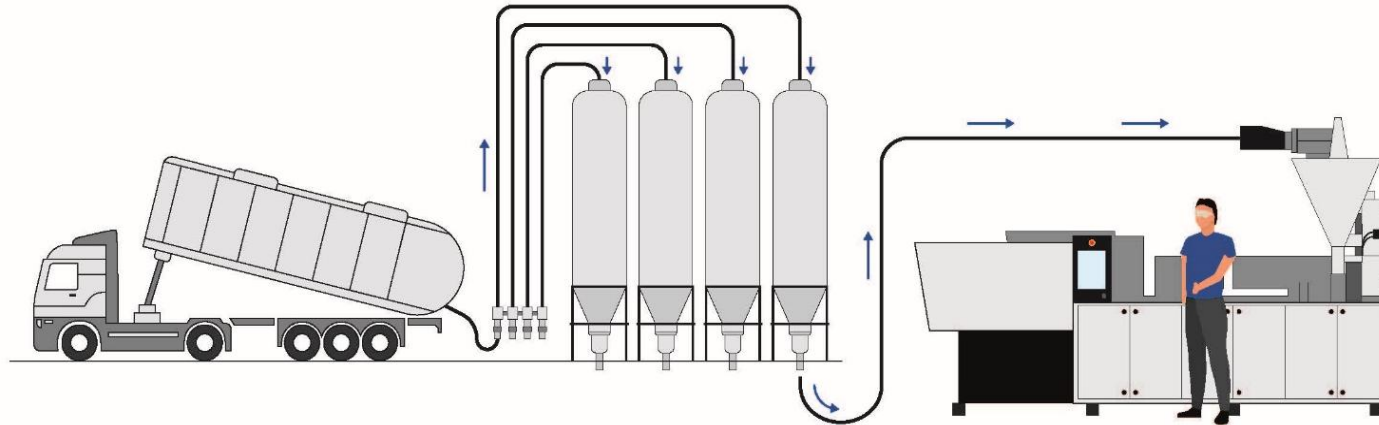
This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

As part of the deconstruction process it is assumed that diesel powered equipment would be used to transport the product around the site. This would vary depending on the deconstruction methodology. C2 has been modelled using secondary data of waste processing facilities across the UK which all fall within a 50km distance. End of life scenarios have been modelled against Plastics Europe 2021 data due to a lack of verified product specific end-of-life data, the following scenario was used 24% recycled, 49% energy recovery, 27% landfill.

Due to the recycling and incineration potential of HDPE, the end-of-life product is converted into the recycled HDPE while energy and heat is produced from its incineration. The benefits and loads of waste packaging materials in A5 are also considered in module D.

MANUFACTURING PROCESS

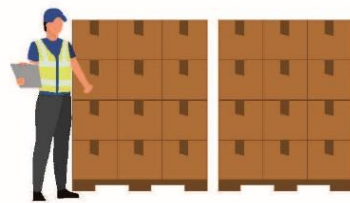


Step 1

Raw material is delivered to our factory on a tanker and deposited into our silos.

Step 2

Fittings are made by raw material being fed via the hopper where the material is passed through a screw and barrel into a moulding machine, where the material is moulded into shape and then cooled.



Step 3

Once produced, Terrain fittings are palletised and stored on site.



Step 4

The product is then loaded onto a lorry and dispatched.

LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The LCA includes all industrial processes from raw material acquisition to production, distribution, installation and end-of-life stages. The study includes modules A1-A3, A4, A5, C1-C4 and D modules, and does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR.

The stage-specific total neglected input and output flows do not exceed 5% of energy usage.

The study includes hazardous materials, substances and raw material. All inputs and outputs of the unit processes, for which data is available, are included in the calculation.

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

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

AVERAGES AND VARIABILITY

Type of average	No averaging
Averaging method	Not applicable
Variation in GWP-fossil for A1-A3	0%

This EPD is product and factory specific and does not contain average calculations.

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	1,15E+00	3,92E-02	5,22E-01	1,71E+00	3,77E-02	2,08E-01	MND	MND	MND	MND	MND	MND	MND	1,85E-04	2,47E-03	5,42E-01	2,50E-01	-4,00E-01
GWP – fossil	kg CO ₂ e	1,14E+00	3,91E-02	7,24E-01	1,91E+00	3,78E-02	5,15E-03	MND	MND	MND	MND	MND	MND	MND	1,85E-04	2,47E-03	5,42E-01	2,50E-01	-4,10E-01
GWP – biogenic	kg CO ₂ e	2,47E-03	2,19E-06	-2,02E-01	-2,00E-01	-8,48E-05	2,03E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,98E-03
GWP – LULUC	kg CO ₂ e	4,64E-04	1,54E-05	4,78E-04	9,57E-04	1,50E-05	2,24E-06	MND	MND	MND	MND	MND	MND	MND	1,85E-08	9,12E-07	1,50E-05	1,77E-06	-3,94E-04
Ozone depletion pot.	kg CFC-11e	6,68E-08	9,06E-09	5,77E-08	1,34E-07	8,62E-09	3,98E-10	MND	MND	MND	MND	MND	MND	MND	3,96E-11	5,69E-10	9,85E-10	6,55E-10	-1,57E-07
Acidification potential	mol H ⁺ e	4,44E-03	1,22E-04	8,37E-04	5,40E-03	1,13E-04	2,21E-05	MND	MND	MND	MND	MND	MND	MND	1,93E-06	1,05E-05	1,37E-04	4,67E-05	-2,22E-03
EP-freshwater ²⁾	kg Pe	2,22E-05	2,88E-07	6,02E-06	2,85E-05	2,96E-07	8,39E-08	MND	MND	MND	MND	MND	MND	MND	6,14E-10	2,02E-08	4,06E-07	4,35E-08	-2,18E-05
EP-marine	kg Ne	7,42E-04	2,75E-05	3,44E-04	1,11E-03	2,62E-05	1,93E-05	MND	MND	MND	MND	MND	MND	MND	8,52E-07	3,11E-06	6,78E-05	2,18E-05	-3,26E-04
EP-terrestrial	mol Ne	8,14E-03	3,05E-04	2,99E-03	1,14E-02	2,69E-04	7,57E-05	MND	MND	MND	MND	MND	MND	MND	9,35E-06	3,43E-05	6,41E-04	2,24E-04	-3,56E-03
POCP (“smog”) ³⁾	kg NMVOCe	4,00E-03	1,10E-04	8,36E-04	4,95E-03	9,58E-05	2,35E-05	MND	MND	MND	MND	MND	MND	MND	2,57E-06	1,10E-05	1,62E-04	6,68E-05	-1,14E-03
ADP-minerals & metals ⁴⁾	kg Sbe	1,01E-05	1,32E-07	1,49E-06	1,17E-05	1,32E-07	2,21E-08	MND	MND	MND	MND	MND	MND	MND	9,39E-11	5,80E-09	1,43E-07	1,40E-08	-5,36E-06
ADP-fossil resources	MJ	3,93E+01	5,84E-01	1,02E+01	5,01E+01	5,55E-01	6,87E-02	MND	MND	MND	MND	MND	MND	MND	2,49E-03	3,71E-02	1,33E-01	5,33E-02	-9,01E+00
Water use ⁵⁾	m ³ e depr.	5,98E-01	2,71E-03	1,00E-01	7,01E-01	2,90E-03	2,58E-03	MND	MND	MND	MND	MND	MND	MND	6,70E-06	1,66E-04	1,98E-02	6,91E-03	-2,38E-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	4,68E-08	3,42E-09	1,08E-07	1,58E-07	3,10E-09	3,46E-10	MND	MND	MND	MND	MND	MND	MND	5,16E-11	2,85E-10	1,24E-09	9,41E-10	-1,66E-08
Ionizing radiation ⁶⁾	kBq U235e	1,05E-01	3,01E-03	2,61E-02	1,34E-01	2,89E-03	3,56E-04	MND	MND	MND	MND	MND	MND	MND	1,15E-05	1,77E-04	8,04E-04	2,04E-04	-8,77E-02
Ecotoxicity (freshwater)	CTUe	9,42E+00	4,95E-01	9,19E+00	1,91E+01	4,71E-01	1,19E-01	MND	MND	MND	MND	MND	MND	MND	1,50E-03	3,34E-02	1,02E+00	2,34E-01	-6,52E+00
Human toxicity, cancer	CTUh	4,03E-10	1,46E-11	2,72E-09	3,13E-09	1,42E-11	5,04E-12	MND	MND	MND	MND	MND	MND	MND	5,74E-14	8,21E-13	5,08E-11	3,85E-11	-2,33E-10
Human tox. non-cancer	CTUh	8,70E-09	4,85E-10	4,40E-09	1,36E-08	4,69E-10	1,41E-10	MND	MND	MND	MND	MND	MND	MND	1,08E-12	3,31E-11	1,75E-09	4,75E-10	-7,36E-09
SQP ⁷⁾	-	1,90E+00	4,65E-01	1,21E+01	1,45E+01	4,24E-01	4,20E-02	MND	MND	MND	MND	MND	MND	MND	3,24E-04	4,28E-02	1,38E-01	5,54E-02	-1,56E+00

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	8,59E-01	8,11E-03	3,92E+00	4,79E+00	9,78E-03	7,85E-03	MND	MND	MND	MND	MND	MND	MND	1,43E-05	4,18E-04	8,91E-03	9,78E-04	-8,16E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,76E+00	1,76E+00	0,00E+00	-1,76E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,58E-02
Total use of renew. PER	MJ	8,59E-01	8,11E-03	5,69E+00	6,55E+00	9,78E-03	-1,76E+00	MND	MND	MND	MND	MND	MND	MND	1,43E-05	4,18E-04	8,91E-03	9,78E-04	-7,20E-01
Non-re. PER as energy	MJ	1,69E+01	5,84E-01	1,01E+01	2,77E+01	5,55E-01	6,87E-02	MND	MND	MND	MND	MND	MND	MND	2,49E-03	3,71E-02	1,33E-01	5,33E-02	-6,21E+00
Non-re. PER as material	MJ	2,48E+01	0,00E+00	-3,48E+00	2,13E+01	0,00E+00	-7,93E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	-6,60E+00	-1,47E+01	3,14E-02
Total use of non-re. PER	MJ	4,18E+01	5,84E-01	6,65E+00	4,90E+01	5,55E-01	-1,06E-02	MND	MND	MND	MND	MND	MND	MND	2,49E-03	3,71E-02	-6,47E+00	-1,46E+01	-6,18E+00
Secondary materials	kg	6,36E-02	1,91E-04	6,12E-02	1,25E-01	1,87E-04	4,63E-05	MND	MND	MND	MND	MND	MND	MND	9,76E-07	1,03E-05	5,21E-04	4,45E-05	1,36E-01
Renew. secondary fuels	MJ	9,57E-04	2,08E-06	3,90E-02	4,00E-02	2,05E-06	3,03E-07	MND	MND	MND	MND	MND	MND	MND	3,19E-09	1,04E-07	3,72E-06	3,68E-07	-7,26E-05
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	1,54E-02	7,46E-05	7,51E-03	2,30E-02	7,81E-05	1,81E-05	MND	MND	MND	MND	MND	MND	MND	1,51E-07	4,81E-06	5,95E-05	3,44E-05	-6,59E-03

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	3,18E-02	6,86E-04	3,38E-02	6,62E-02	6,55E-04	4,27E-04	MND	MND	MND	MND	MND	MND	MND	3,34E-06	4,92E-05	1,40E-03	1,71E-03	-2,83E-02
Non-hazardous waste	kg	9,62E-01	1,20E-02	2,12E-01	1,19E+00	1,14E-02	6,26E-02	MND	MND	MND	MND	MND	MND	MND	2,35E-05	8,09E-04	2,78E-01	1,20E-01	-1,06E+00
Radioactive waste	kg	4,59E-05	3,99E-06	3,03E-05	8,02E-05	3,80E-06	5,29E-07	MND	MND	MND	MND	MND	MND	MND	1,76E-08	2,48E-07	2,91E-07	2,44E-07	-2,70E-05

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	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	7,31E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	1,26E-01	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	5,19E-03	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,58E-01	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,64E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	2,11E+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 ₂ e	1,09E+00	3,88E-02	7,21E-01	1,85E+00	3,75E-02	1,28E-02	MND	MND	MND	MND	MND	MND	MND	1,83E-04	2,45E-03	5,45E-01	2,47E-01	-3,96E-01
Ozone depletion Pot.	kg CFC ₁₁ e	5,48E-08	7,18E-09	5,05E-08	1,12E-07	6,83E-09	3,22E-10	MND	MND	MND	MND	MND	MND	MND	3,14E-11	4,51E-10	8,52E-10	5,34E-10	-1,56E-07
Acidification	kg SO ₂ e	3,71E-03	9,86E-05	6,14E-04	4,43E-03	9,12E-05	1,70E-05	MND	MND	MND	MND	MND	MND	MND	1,37E-06	8,13E-06	9,83E-05	3,33E-05	-1,87E-03
Eutrophication	kg PO ₄ ³ e	1,05E-03	2,16E-05	6,12E-04	1,69E-03	2,13E-05	1,48E-04	MND	MND	MND	MND	MND	MND	MND	3,18E-07	1,85E-06	1,01E-04	7,32E-04	-7,98E-04
POCP (“smog”)	kg C ₂ H ₄ e	3,36E-04	4,69E-06	6,09E-05	4,02E-04	4,45E-06	2,54E-06	MND	MND	MND	MND	MND	MND	MND	3,00E-08	3,18E-07	4,16E-06	7,11E-06	-9,60E-05
ADP-elements	kg Sbe	1,01E-05	1,29E-07	1,37E-06	1,16E-05	1,29E-07	2,17E-08	MND	MND	MND	MND	MND	MND	MND	9,25E-11	5,61E-09	1,40E-07	1,27E-08	-4,60E-06
ADP-fossil	MJ	3,93E+01	5,84E-01	1,02E+01	5,01E+01	5,55E-01	5,58E-02	MND	MND	MND	MND	MND	MND	MND	2,49E-03	3,71E-02	1,33E-01	5,33E-02	-9,00E+00

ENVIRONMENTAL IMPACTS – GWP-GHG - THE INTERNATIONAL EPD SYSTEM

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG ⁹⁾	kg CO ₂ e	1,14E+00	3,92E-02	7,24E-01	1,91E+00	3,78E-02	5,15E-03	MND	MND	MND	MND	MND	MND	MND	1,85E-04	2,47E-03	5,42E-01	2,50E-01	-4,10E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH₄ fossil, CH₄ biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO₂ is set to zero.

ANNEX:

PRODUCT SCALING

TERRAIN FUZE HDPE EXPANSION COUPLING (mm)	WEIGHT (kg)	SCALING FACTOR (multiple of)	A1-A3 GWP FOSSIL (kg/CO2e)
40	0.016	0.030	0.06
50	0.198	0.376	0.70
56	0.221	0.419	0.78
75	0.286	0.543	1.01
110	0.527	1.000	1.86
160	1.070	2.030	3.78

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
05.02.2025

