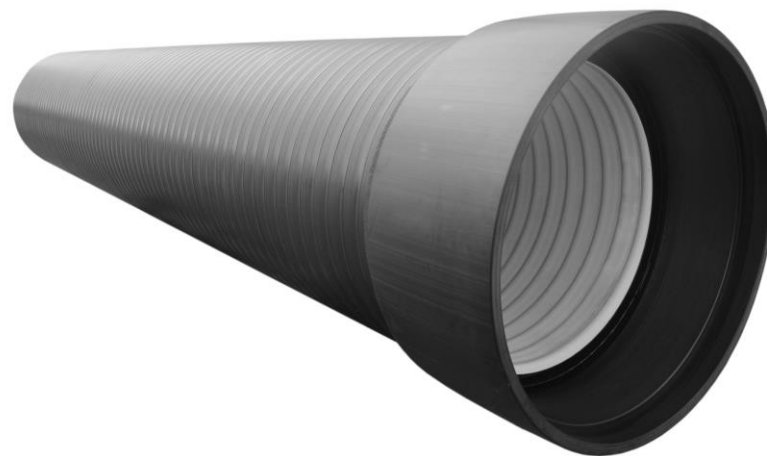


ENVIRONMENTAL PRODUCT DECLARATION

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

Weholite
Uponor Corporation



EPD HUB, EPDHUB-0103

Publishing date 16 August 2022, last updated date 13 September 2022, valid until 16 August 2027

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Uponor Corporation
Address	Äyritie 20, 01510 Vantaa, Finland
Contact details	info@uponor.com
Website	www.uponor.com

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	Dr. Shima Holder, Uponor Corporation
EPD verification	Independent verification of this EPD and data, according to ISO 14025: <input type="checkbox"/> Internal certification <input checked="" type="checkbox"/> External verification
EPD verifier	H.U as an authorized verifier acting for EPD Hub

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	Weholite
Additional labels	
Product reference	1001529 1001546 1001548 1001552 1001556 1001558 1001561 1004320 1004321 1004582 1004894 1004897 1004909 1004912 1004915 1004926 1004933 1004947 1004974 1006558 1010045 1010051 1010052 1010053 1068778 1072754 1072765 1072776 1072785 1072794 1072800 1072803 1072816 1072820 1072822 1072828 1072832 1072834 1072837 1072839 1072841 1072844 1072844 1072848 1072851 1072854 1072859 1072861 1072868 1072875 1072878 1072884 1072890 1072900 1072905 1072908 1072914 1074969 1074970 1091533 1092642 1096916 1096930 1118873 1119230 1120361 1121553 1121726 1122079
Place of production	Uponor Infra Sp. z o.o., Przemysłowa 5, 97-410 Kleszczów, Poland
Period for data	2021
Averaging in EPD	No averaging

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,13E0
GWP-total, A1-A3 (kgCO ₂ e)	2,14E0
Secondary material, inputs (%)	4,4E-1
Secondary material, outputs (%)	5E0
Total energy use, A1-A3 (kWh)	7,33E0
Total water use, A1-A3 (m ³ e)	5,45E-3

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Uponor is rethinking water for future generations. Our offering, including safe drinking water delivery, energy-efficient radiant heating and cooling and reliable infrastructure, enables a more sustainable living environment. We help our customers in residential and commercial construction, municipalities and utilities, as well as different industries to work faster and smarter. We employ about 3,800 professionals in 26 countries in Europe and North America. Over 100 years of expertise and trust form the basis of any successful partnership. This is the basis, on which they can build, in a literal and metaphorical sense. We create trust together with our partners: Customers, prospective customers and suppliers. We establish this with shared knowledge, quality and sustainable results.

PRODUCT DESCRIPTION

Weholite is a modern system of large-diameter, structural polyethylene (PE) pipes and fittings, designed for the construction of complete external sewer pipelines. The system is a result of the long-lasting research and development works carried out by our corporation. The combination of an appropriate raw material and an advanced technology enabled us to create a product of a high load resistance. The Weholite pipes constitute an optimal, external solution for the majority of projects connected with gravity sewers. Due to their low weight, they are quick and easy to install. They may be supplied in longer sections than the pipes made of traditional materials. The unique construction and the reliable jointing methods guarantee 100% tightness of the whole system, even after years of operation. The Weholite pipes are flexible and easily adjust to dynamic surroundings. According to Technical Opinion of Central Mining Institute (GIG) they may be applied in mining damage areas (up to level 4). They are resistant to corrosion and to damage done by salt and other chemical compounds that may be found in soil, sea water or in any other transported substances. Weholite pipes and fittings have National Technical Assessments (KOT) issued by the Institute of Building Technology (ITB), Research Institute of Roads and Bridges (IBDiM), and Railway Research Institute (IK). All these attributes make the Weholite pipes a truly universal

product of numerous applications. Weholite pipes are available in a broad range of diameters, from 300 to 900 mm, ensuring good adaptability for various projects. The standard pipe lengths are 12.5 m, 6.25 m, 3.125 m, however customized lengths are also available. Weholite pipes (socket or plain-ended) are manufactured with ring stiffness classes from SN2 to SN16 (kN/m²) for applications in various ground conditions. There is a possibility to order special, non-standard pipes of any length and ring stiffness. Uponor Infra offers a wide range of Weholite products, which can be used with any pipe system. Our comprehensive offer comprises segmented bends of any angle, tees, reducers, connectors, and non-standard elements used for a particular project. Our knowledgeable specialists will help you choose the optimal solution. The Weholite system also encompasses access chambers and manholes (with prefabricated bottom or eccentric) and tanks.

Further information can be found at www.uponor.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Fossil materials	100	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
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FUNCTIONAL UNIT

Declared unit	1 kg
Mass per declared unit	1 kg

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.

The manufacturing stages are:

- Material conveying
- Extrusion (melting, material processing and coating)
- Pipe profile corrugation
- Cooling
- Winding and Welding
- Cutting
- Socketing (if the pipe is with socket)

The finished product is then transported to the warehouse for further delivery to customers.

MANUFACTURING FLOW CHART



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 installation scenarios in Uponor’s infrastructure product EPDs are based on TEPFPA’s (The European Plastic Pipe and Fittings Association) industry average EPDs. These documents and their background reports include industry consensus estimates of the resource use, emissions and effluent of typical European installations, including the size of installation trenches, machinery used for digging/excavation, volume of backfilling sand required for the installation. These parameters have been used as input for the Uponor EPD modelling.

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)

Since the consumption of energy and natural resources is negligible for disassembling of the end-of-life product, the impacts of demolition are assumed zero (C1). After ca 100 years of service life, 5% of the end-of-life product is assumed to be sent to the closest treatment facilities (C2). The collected 5% from the demolition site is sent to recycling (C3), whereas the remaining 95% is left inert under the ground (C4). Due to the recycling of PE, the end-of-life product is converted into recycled PE (D).



LIFE-CYCLE ASSESSMENT

CUT-OFF CRITERIA

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019. Excluded modules are use stage modules (B1-B7), which are not mandatory. 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 which data are available for are included in the calculation. There is no neglected unit process more than 1% of total mass and energy flows. The total neglected input and output flows do also not exceed 5% of energy usage or mass. The life cycle analysis includes all industrial processes from raw material acquisition to production, distribution and end-of-life stages. 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.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. In this study, as per the reference standard, allocation is conducted in the following order;

1. Allocation should be avoided.
2. Allocation should be based on physical properties (e.g., mass, volume) when the difference in revenue is small.
3. Allocation should be based on economic values.

As it is impossible to collect all energy consumption data separately for each product produced in the plant, data is allocated. Allocation is based on annual production rate and made with high accuracy and precision. The values for 1 kg of the product, which is used within this study are calculated by considering the total product weight per annual production. In the

factory, several kinds of pipes are produced; since the production processes of these products are similar, the annual production percentage is taken into consideration for allocation. According to the ratio of the annual production of the declared product to the total annual production at the factory, the annual total fuel consumption, consumed water and the generated waste per the declared product are allocated. Subsequently, the product output fixed to 1 kg and the corresponding amount of product is used in the calculations. Besides, since the formulation of the product is certain, raw materials in the product do not need to be allocated considering the total annual production.

This LCA study is conducted in accordance with all methodological considerations, such as performance, system boundaries, data quality, allocation procedures, and decision rules to evaluate inputs and outputs.

Allocation used in environmental data sources is aligned with the above.

AVERAGES AND VARIABILITY

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. 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 ₂ e	2,04E0	9,07E-2	8,84E-3	2,14E0	5,05E-2	9,52E-3	MND	MND	MND	MND	MND	MND	MND	1,55E-6	3,31E-4	1,84E-2	1,41E-1	-7,79E-2
GWP – fossil	kg CO ₂ e	2,03E0	9,07E-2	8,84E-3	2,13E0	5,1E-2	8,92E-3	MND	MND	MND	MND	MND	MND	MND	1,54E-6	3,31E-4	1,85E-2	1,41E-1	-8,16E-2
GWP – biogenic	kg CO ₂ e	1,02E-2	4,99E-5	-3,85E-6	1,02E-2	3,12E-5	5,82E-4	MND	MND	MND	MND	MND	MND	MND	2,87E-9	1,5E-7	-7,71E-5	1,09E-4	3,6E-3
GWP – LULUC	kg CO ₂ e	6,35E-4	3,25E-5	3E-6	6,7E-4	1,8E-5	9,48E-6	MND	MND	MND	MND	MND	MND	MND	1,24E-9	1,22E-7	1,07E-5	5,39E-6	1,76E-5
Ozone depletion pot.	kg CFC-11e	5,12E-8	2,04E-8	1,11E-9	7,27E-8	1,17E-8	7,8E-10	MND	MND	MND	MND	MND	MND	MND	8,89E-14	7,27E-11	1,34E-9	3,12E-9	7,74E-11
Acidification potential	mol H ⁺ e	7,34E-3	3,76E-4	4,89E-5	7,76E-3	2,1E-4	4,79E-5	MND	MND	MND	MND	MND	MND	MND	1,06E-8	1,38E-6	5,29E-5	8,78E-5	-2,9E-4
EP-freshwater ²⁾	kg Pe	3,55E-5	8,31E-7	1,47E-7	3,65E-5	4,4E-7	5,15E-7	MND	MND	MND	MND	MND	MND	MND	7,6E-11	3,3E-9	3,07E-7	1,89E-7	-1,33E-6
EP-marine	kg Ne	1,26E-3	1,1E-4	1,69E-5	1,39E-3	6,22E-5	8,62E-6	MND	MND	MND	MND	MND	MND	MND	1,9E-9	4,02E-7	1,47E-5	5,37E-5	-3,96E-5
EP-terrestrial	mol Ne	1,4E-2	1,22E-3	1,85E-4	1,54E-2	6,87E-4	9,04E-5	MND	MND	MND	MND	MND	MND	MND	1,89E-8	4,44E-6	1,6E-4	3,23E-4	-4,9E-4
POCP (“smog”) ³⁾	kg NMVOCe	6,78E-3	3,82E-4	5,5E-5	7,22E-3	2,16E-4	2,67E-5	MND	MND	MND	MND	MND	MND	MND	6,57E-9	1,39E-6	5,18E-5	1,24E-4	-2,69E-4
ADP-minerals & metals ⁴⁾	kg Sbe	1,82E-5	2,24E-6	2,48E-7	2,07E-5	1,27E-6	2,99E-7	MND	MND	MND	MND	MND	MND	MND	2,97E-10	8,05E-9	2,26E-7	1,08E-7	-6,62E-7
ADP-fossil resources	MJ	7,12E1	1,37E0	1,15E-1	7,27E1	7,78E-1	1,25E-1	MND	MND	MND	MND	MND	MND	MND	1,76E-5	4,94E-3	1,81E-1	2,38E-1	-3,2E0
Water use ⁵⁾	m ³ e depr.	1,4E0	5,18E-3	1,39E-3	1,4E0	2,76E-3	1,3E-2	MND	MND	MND	MND	MND	MND	MND	1,04E-6	2,04E-5	3,89E-3	1,06E-2	-4,03E-2

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	6,08E-8	6,96E-9	1,03E-9	6,88E-8	3,93E-9	4,62E-10	MND	MND	MND	MND	MND	MND	MND	1,13E-13	2,52E-11	9,14E-10	1,66E-9	-9,56E-10
Ionizing radiation ⁶⁾	kBq U235e	4,65E-2	5,89E-3	2,86E-4	5,27E-2	3,4E-3	6,43E-4	MND	MND	MND	MND	MND	MND	MND	3,88E-8	2,06E-5	5,47E-4	9,33E-4	-4,3E-4
Ecotoxicity (freshwater)	CTUe	1,18E1	1,11E0	1,38E-1	1,3E1	6,07E-1	2,44E-1	MND	MND	MND	MND	MND	MND	MND	6,44E-5	4,22E-3	1,91E-1	2,48E-1	-5,92E-1
Human toxicity, cancer	CTUh	5,34E-10	3,04E-11	1,19E-11	5,77E-10	1,72E-11	6,69E-11	MND	MND	MND	MND	MND	MND	MND	8,34E-15	1,1E-13	1,95E-11	6,63E-12	6,6E-12
Human tox. non-cancer	CTUh	1,25E-8	1,23E-9	1,81E-10	1,4E-8	6,97E-10	2,49E-10	MND	MND	MND	MND	MND	MND	MND	1,03E-13	4,47E-12	2,72E-10	1,65E-10	-2,61E-10
SQP ⁷⁾	-	5,12E-1	1,52E0	4,29E-2	2,08E0	8,67E-1	2,38E-2	MND	MND	MND	MND	MND	MND	MND	5,39E-6	5,43E-3	1,1E-1	8,41E-1	8,3E-2

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	1,18E0	1,81E-2	4,79E-1	1,68E0	1,1E-2	2,22E-2	MND	MND	MND	MND	MND	MND	MND	3,89E-4	5,67E-5	8,94E-3	4,22E-3	-8,5E-3
Renew. PER as material	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Total use of renew. PER	MJ	1,18E0	1,81E-2	4,79E-1	1,68E0	1,1E-2	2,22E-2	MND	MND	MND	MND	MND	MND	MND	3,89E-4	5,67E-5	8,94E-3	4,22E-3	-8,5E-3
Non-re. PER as energy	MJ	2,33E1	1,37E0	1,15E-1	2,47E1	7,78E-1	1,25E-1	MND	MND	MND	MND	MND	MND	MND	1,76E-5	4,94E-3	1,81E-1	2,38E-1	-8,64E-1
Non-re. PER as material	MJ	4,8E1	0E0	0E0	4,8E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	-2,34E0
Total use of non-re. PER	MJ	7,12E1	1,37E0	1,15E-1	7,27E1	7,78E-1	1,25E-1	MND	MND	MND	MND	MND	MND	MND	1,76E-5	4,94E-3	1,81E-1	2,38E-1	-3,2E0
Secondary materials	kg	4,4E-3	0E0	0E0	4,4E-3	0E0	1,69E-4	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	4,98E-2
Renew. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Non-ren. secondary fuels	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Use of net fresh water	m ³	5,16E-3	2,61E-4	2,93E-5	5,45E-3	1,47E-4	5,32E-4	MND	MND	MND	MND	MND	MND	MND	1,84E-8	9,43E-7	5,44E-5	2,67E-4	-1,47E-4

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	4,71E-2	1,57E-3	5,42E-4	4,92E-2	8,09E-4	4,23E-3	MND	MND	MND	MND	MND	MND	MND	4,12E-7	6,51E-6	0E0	4,35E-4	-2,01E-3
Non-hazardous waste	kg	1,57E0	1,2E-1	1,08E-2	1,7E0	6,73E-2	2,3E-2	MND	MND	MND	MND	MND	MND	MND	4,34E-6	4,41E-4	0E0	9,5E-1	-4,07E-2
Radioactive waste	kg	3,86E-5	9,26E-6	4,05E-7	4,83E-5	5,32E-6	5,54E-7	MND	MND	MND	MND	MND	MND	MND	3,89E-11	3,27E-8	0E0	1,42E-6	-7,63E-8

END OF LIFE – OUTPUT FLOWS

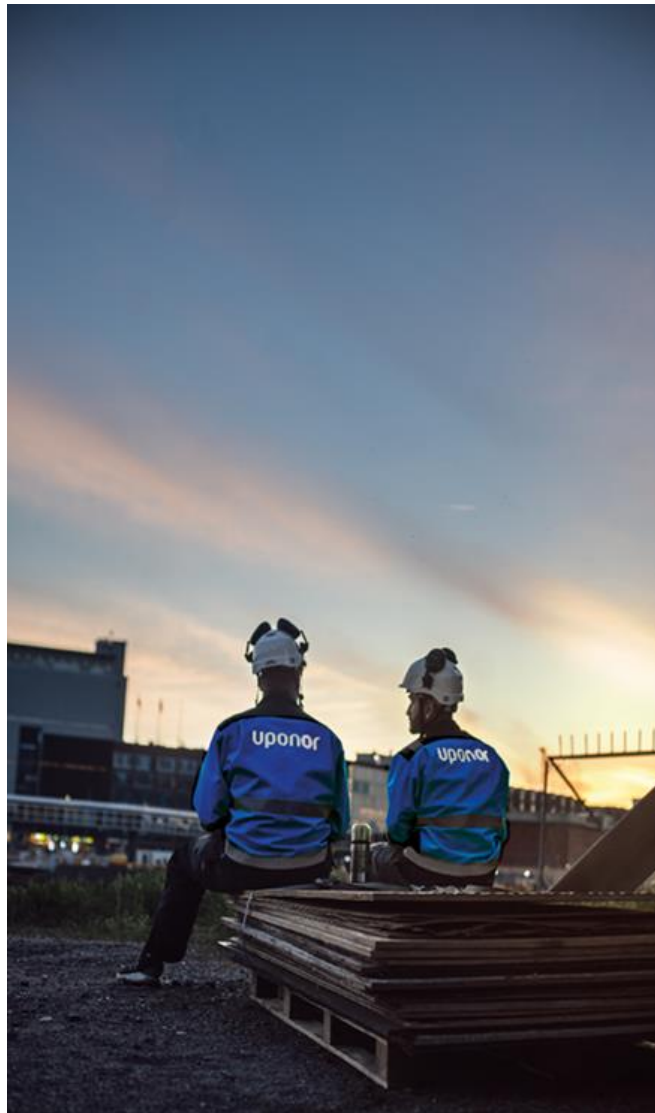
Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	9,89E-5	9,89E-5	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	5E-2	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Exported energy	MJ	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0

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	1,87E0	8,98E-2	8,63E-3	1,97E0	5,05E-2	8,83E-3	MND	MND	MND	MND	MND	MND	MND	1,49E-6	3,28E-4	1,81E-2	9,94E-2	-7,28E-2
Ozone depletion Pot.	kg CFC ₁₁ e	5,03E-8	1,63E-8	9,01E-10	6,75E-8	9,3E-9	7,28E-10	MND	MND	MND	MND	MND	MND	MND	7,99E-14	5,77E-11	1,12E-9	2,48E-9	-1,54E-10
Acidification	kg SO ₂ e	6,19E-3	2,2E-4	1,89E-5	6,43E-3	1,04E-4	3,95E-5	MND	MND	MND	MND	MND	MND	MND	8,73E-9	1,01E-6	3,33E-5	9,49E-5	-2,56E-4
Eutrophication	kg PO ₄ ³ e	1,5E-3	4,81E-5	9,84E-6	1,55E-3	2,16E-5	1,87E-5	MND	MND	MND	MND	MND	MND	MND	3,56E-9	2,31E-7	3,84E-5	4,96E-3	3,07E-5
POCP (“smog”)	kg C ₂ H ₄ e	6,13E-4	1,19E-5	1,68E-6	6,27E-4	6,71E-6	2,29E-6	MND	MND	MND	MND	MND	MND	MND	5,79E-10	4,35E-8	3,15E-6	2,07E-5	-2,49E-5
ADP-elements	kg Sbe	1,82E-5	2,24E-6	2,48E-7	2,07E-5	1,27E-6	2,99E-7	MND	MND	MND	MND	MND	MND	MND	2,97E-10	8,05E-9	2,26E-7	1,08E-7	-6,62E-7
ADP-fossil	MJ	7,12E1	1,37E0	1,15E-1	7,27E1	7,78E-1	1,25E-1	MND	MND	MND	MND	MND	MND	MND	1,76E-5	4,94E-3	1,81E-1	2,38E-1	-3,2E0

ENVIRONMENTAL IMPACTS – TRACI 2.1. / 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	1,89E0	8,97E-2	8,62E-3	1,99E0	5,04E-2	8,84E-3	MND	MND	MND	MND	MND	MND	MND	1,48E-6	3,27E-4	1,81E-2	1,05E-1	-7,35E-2
Ozone Depletion	kg CFC ₁₁ e	6,27E-8	2,17E-8	1,19E-9	8,55E-8	1,24E-8	9,38E-10	MND	MND	MND	MND	MND	MND	MND	1,02E-13	7,69E-11	1,47E-9	3,31E-9	4,47E-13
Acidification	kg SO ₂ e	6,09E-3	3,27E-4	4,35E-5	6,46E-3	1,83E-4	4E-5	MND	MND	MND	MND	MND	MND	MND	8,73E-9	1,21E-6	4,68E-5	7,83E-5	-2,48E-4
Eutrophication	kg Ne	4,74E-4	4,59E-5	4,54E-6	5,25E-4	2,58E-5	6,5E-6	MND	MND	MND	MND	MND	MND	MND	1,16E-9	1,68E-7	6,39E-6	4,32E-5	-1,09E-5
POCP (“smog”)	kg O ₃ e	8,11E-2	7E-3	1,06E-3	8,92E-2	3,94E-3	4,65E-4	MND	MND	MND	MND	MND	MND	MND	1,01E-7	2,55E-5	9,05E-4	1,86E-3	-2,9E-3
ADP-fossil	MJ	1,02E1	1,95E-1	1,57E-2	1,04E1	1,11E-1	9,16E-3	MND	MND	MND	MND	MND	MND	MND	1,56E-6	6,94E-4	2,24E-2	3,27E-2	-4,65E-1



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.

Hetal Parekh Udas as an authorized verifier acting for EPD Hub Limited
16.08.2022



ANNEX 1: CONVERSION TABLE FOR PRODUCT STAGE (A1-A3) GWP – EN 15804+A2, PEF

Product Number	Product Description	Unit Product Weight (kg/m of pipe)	GWP – total, Stages A1-A3 (kg CO2e/m of pipe)	Product Length (m)	GWP – total, Stages A1-A3 (kg CO2e)
1001529	WEHOLITE PIPE 1000 SN10 WHITE SPECIAL LENGTH PE	80,4	1,72E2	N/A ¹⁾	N/A
1001546	WEHOLITE PIPE 2400 SN8 WHITE SPECIAL LENGTH PE	405	8,67E2	N/A	N/A
1001548	WEHOLITE PIPE 2500 SN8 WHITE SPECIAL LENGTH PE	455	9,74E2	N/A	N/A
1001552	WEHOLITE PIPE 3000 SN2 BLACK SPECIAL LENGTH PE WATER	353	7,55E2	N/A	N/A
1001556	WEHOLITE PIPE 600 SN10 WHITE SPECIAL LENGTH PE	30,9	6,61E1	N/A	N/A
1001558	WEHOLITE PIPE 600 SN16 WHITE SPECIAL LENGTH PE	39,1	8,37E1	N/A	N/A
1001561	WEHOLITE PIPE 800 SN12,5 WHITE SPECIAL LENGTH PE	56,53	1,21E2	N/A	N/A
1004320	WEHOLITE PIPE Z-JOINT 1400 SN16 WHITE SPECIAL LENGTH PE	214	4,58E2	N/A	N/A
1004321	WEHOLITE PIPE 1200 SN12,5 WHITE SPECIAL LENGTH PE	134	2,87E2	N/A	N/A
1004582	WEHOLITE PIPE 700 SN10 WHITE SPECIAL LENGTH PE	41,5	8,88E1	N/A	N/A
1004894	WEHOLITE PIPE 2600 SN4 WHITE 12,5M PE	332	7,10E2	12,5	8,88E3
1004897	WEHOLITE PIPE 300 SN10 WHITE 6,25M PE	8,56	1,83E1	6,25	1,14E2
1004909	WEHOLITE PIPE 400 SN8 WHITE 3,125M PE	11,5	2,46E1	3,125	7,69E1
1004912	WEHOLITE PIPE 450 SN8 WHITE 12,5M PE	15,3	3,27E1	12,5	4,09E2
1004915	WEHOLITE PIPE 500 SN10 WHITE 12,5M PE	20,5	4,39E1	12,5	5,48E2
1004926	WEHOLITE PIPE 500 SN8 WHITE 3,125M PE	17,5	3,75E1	3,125	1,17E2
1004933	WEHOLITE PIPE 600 SN8 WHITE 3,125M PE	24,6	5,26E1	3,125	1,65E2
1004947	WEHOLITE PIPE 800 SN8 WHITE 3,125M PE	43,7	9,35E1	3,125	2,92E2
1004974	WEHOLITE PIPE Z-JOINT 1000 SN8 WHITE 12,5M PE	66	1,41E2	12,5	1,77E3
1006558	WEHOLITE PIPE Z-JOINT 600 SN12,5 WHITE 12,5M PE	34,3	7,34E1	12,5	9,18E2
1010045	WEHOLITE PIPE Z-JOINT 2000 SN4 WHITE SPECIAL LENGTH PE	196	4,19E2	N/A	N/A
1010051	WEHOLITE PIPE Z-JOINT 1500 SN8 WHITE SPECIAL LENGTH PE	150	3,21E2	N/A	N/A
1010052	WEHOLITE PIPE Z-JOINT 1600 SN8 WHITE SPECIAL LENGTH PE	172	3,68E2	N/A	N/A
1010053	WEHOLITE PIPE Z-JOINT 2600 SN8 WHITE SPECIAL LENGTH PE	450	9,63E2	N/A	N/A
1068778	WEHOLITE PIPE 560/500 SN4 BLACK SPECIAL LENGTH PE	14,4	3,08E1	N/A	N/A
1072754	WEHOLITE PIPE 338/300 SN8 WHITE 12,5M PE	7,3	1,56E1	12,5	1,95E2
1072765	WEHOLITE PIPE 540/500 SN2 WHITE 12,5M PE	11,8	2,53E1	12,5	3,16E2
1072776	WEHOLITE PIPE 650/600 SN2 WHITE 12,5M PE	15,8	3,38E1	12,5	4,23E2
1072785	WEHOLITE PIPE 756/700 SN2 WHITE 12,5M PE	22	4,71E1	12,5	5,89E2
1072794	WEHOLITE PIPE 790/700 SN8 WHITE 12,5M PE	34	7,28E1	12,5	9,10E2
1072800	WEHOLITE PIPE 866/800 SN2 WHITE 12,5M PE	26,2	5,61E1	12,5	7,01E2
1072803	WEHOLITE PIPE 906/800 SN4 WHITE 12,5M PE	35,5	7,60E1	12,5	9,50E2

1072816	WEHOLITE PIPE 1013/900 SN8 WHITE 12,5M PE	54,5	1,17E2	12,5	1,46E3
1072820	WEHOLITE PIPE 1084/1000 SN2 WHITE 12,5M PE	38,8	8,30E1	12,5	1,04E3
1072822	WEHOLITE PIPE 1104/1000 SN4 WHITE SPECIAL LENGTH PE	48,5	1,04E2	N/A	N/A
1072828	WEHOLITE PIPE 1299/1200 SN2 WHITE SPECIAL LENGTH PE	58	1,24E2	N/A	N/A
1072832	WEHOLITE PIPE 1324/1200 SN4 WHITE 12,5M PE	71	1,52E2	12,5	1,90E3
1072834	WEHOLITE PIPE 1352/1200 SN8 WHITE 12,5M PE	96	2,05E2	12,5	2,57E3
1072837	WEHOLITE PIPE 1355/1250 SN2 WHITE 12,5M PE	60,1	1,29E2	12,5	1,61E3
1072839	WEHOLITE PIPE 1378/1250 SN4 WHITE 12,5M PE	77,2	1,65E2	12,5	2,07E3
1072841	WEHOLITE PIPE 1514/1400 SN2 WHITE 12,5M PE	75	1,61E2	12,5	2,01E3
1072844	WEHOLITE PIPE 1546/1400 SN4 WHITE 12,5M PE	97,8	2,09E2	12,5	2,62E3
1072844	WEHOLITE PIPE 1546/1400 SN4 WHITE 12,5M PE	99,7	2,13E2	12,5	2,67E3
1072848	WEHOLITE PIPE 1578/1400 SN8 WHITE 12,5M PE	132	2,82E2	12,5	3,53E3
1072851	WEHOLITE PIPE 1623/1500 SN2 WHITE 12,5M PE	85,9	1,84E2	12,5	2,30E3
1072854	WEHOLITE PIPE 1654/1500 SN4 WHITE 12,5M PE	108	2,31E2	12,5	2,89E3
1072859	WEHOLITE PIPE 1732/1600 SN2 WHITE 12,5M PE	98,5	2,11E2	12,5	2,63E3
1072861	WEHOLITE PIPE 1768/1600 SN4 WHITE SPECIAL LENGTH PE	126	2,70E2	N/A	N/A
1072868	WEHOLITE PIPE 1948/1800 SN2 WHITE SPECIAL LENGTH PE	124	2,65E2	N/A	N/A
1072875	WEHOLITE PIPE 2030/1800 SN8 WHITE 12,5M PE	230	4,92E2	12,5	6,15E3
1072878	WEHOLITE PIPE 2168/2000 SN2 WHITE 12,5M PE	158	3,38E2	12,5	4,23E3
1072884	WEHOLITE PIPE 2253/2000 SN8 WHITE SPECIAL LENGTH PE	260	5,56E2	N/A	N/A
1072890	WEHOLITE PIPE 2426/2200 SN4 WHITE SPECIAL LENGTH PE	239	5,11E2	N/A	N/A
1072900	WEHOLITE PIPE 2653/2400 SN4 WHITE 12,5M PE	278	5,95E2	12,5	7,44E3
1072905	WEHOLITE PIPE 2756/2500 SN4 WHITE SPECIAL LENGTH PE	325	6,96E2	N/A	N/A
1072908	WEHOLITE PIPE 2813/2600 SN2 WHITE 12,5M PE	262	5,61E2	12,5	7,01E3
1072914	WEHOLITE PIPE 3320/3000 SN4 WHITE 12,5M PE	450	9,63E2	12,5	1,20E4
1074969	WEHOLITE PIPE 1989/1800 SN4 WHITE SPECIAL LENGTH PE	158	3,38E2	N/A	N/A
1074970	WEHOLITE PIPE 2389/2200 SN2 WHITE SPECIAL LENGTH PE	185	3,96E2	N/A	N/A
1091533	WEHOLITE PIPE Z-JOINT 3000 SN8 WHITE SPECIAL LENGTH PE	623	1,33E3	N/A	N/A
1092642	WEHOLITE PIPE Z-JOINT 2200 SN8 WHITE SPECIAL LENGTH PE	328	7,02E2	N/A	N/A
1096916	WEHOLITE PIPE Z-JOINT 1000 SN16 WHITE 12,5M PE	105	2,25E2	12,5	2,81E3
1096930	WEHOLITE PIPE 400 SN10 WHITE 3,125M PE	14,5	3,10E1	3,125	9,70E1
1118873	WEHOLITE PIPE Z-JOINT 800 SN16 WHITE 12,5M PE	66,8	1,43E2	12,5	1,79E3
1119230	WEHOLITE PIPE 800 SN10 WHITE 3,125M PE	52	1,11E2	3,125	3,48E2
1120361	WEHOLITE PIPE Z-JOINT 1100 SN4 BLACK 15M PE100	60,7	1,30E2	15	1,95E3
1121553	WEHOLITE PIPE Z-JOINT 500 SN16 WHITE 12,5M PE	26,6	5,69E1	12,5	7,12E2
1121726	WEHOLITE PIPE Z-JOINT 1000 SN12,5 WHITE 6,25M PE	94,5	2,02E2	6,25	1,26E3
1122079	WEHOLITE PIPE Z-JOINT 900 SN10 WHITE SPECIAL LENGTH PE	68,1	1,46E2	N/A	N/A

¹⁾N/A = Not Applicable

ANNEX 2: CONVERSION TABLE FOR PRODUCT STAGE (A1-A3) GWP – EN 15804+A1, CML/ISO 21930

Product Number	Product Description	Unit Product Weight (kg/m of pipe)	GWP – total, Stages A1-A3 (kg CO2e/m of pipe)	Product Length (m)	GWP – total, Stages A1-A3 (kg CO2e)
1001529	WEHOLITE PIPE 1000 SN10 WHITE SPECIAL LENGTH PE	80,4	1,58E2	N/A	N/A
1001546	WEHOLITE PIPE 2400 SN8 WHITE SPECIAL LENGTH PE	405	7,98E2	N/A	N/A
1001548	WEHOLITE PIPE 2500 SN8 WHITE SPECIAL LENGTH PE	455	8,96E2	N/A	N/A
1001552	WEHOLITE PIPE 3000 SN2 BLACK SPECIAL LENGTH PE WATER	353	6,95E2	N/A	N/A
1001556	WEHOLITE PIPE 600 SN10 WHITE SPECIAL LENGTH PE	30,9	6,09E1	N/A	N/A
1001558	WEHOLITE PIPE 600 SN16 WHITE SPECIAL LENGTH PE	39,1	7,70E1	N/A	N/A
1001561	WEHOLITE PIPE 800 SN12,5 WHITE SPECIAL LENGTH PE	56,53	1,11E2	N/A	N/A
1004320	WEHOLITE PIPE Z-JOINT 1400 SN16 WHITE SPECIAL LENGTH PE	214	4,22E2	N/A	N/A
1004321	WEHOLITE PIPE 1200 SN12,5 WHITE SPECIAL LENGTH PE	134	2,64E2	N/A	N/A
1004582	WEHOLITE PIPE 700 SN10 WHITE SPECIAL LENGTH PE	41,5	8,18E1	N/A	N/A
1004894	WEHOLITE PIPE 2600 SN4 WHITE 12,5M PE	332	6,54E2	12,5	8,18E3
1004897	WEHOLITE PIPE 300 SN10 WHITE 6,25M PE	8,56	1,69E1	6,25	1,05E2
1004909	WEHOLITE PIPE 400 SN8 WHITE 3,125M PE	11,5	2,27E1	3,125	7,08E1
1004912	WEHOLITE PIPE 450 SN8 WHITE 12,5M PE	15,3	3,01E1	12,5	3,77E2
1004915	WEHOLITE PIPE 500 SN10 WHITE 12,5M PE	20,5	4,04E1	12,5	5,05E2
1004926	WEHOLITE PIPE 500 SN8 WHITE 3,125M PE	17,5	3,45E1	3,125	1,08E2
1004933	WEHOLITE PIPE 600 SN8 WHITE 3,125M PE	24,6	4,85E1	3,125	1,51E2
1004947	WEHOLITE PIPE 800 SN8 WHITE 3,125M PE	43,7	8,61E1	3,125	2,69E2
1004974	WEHOLITE PIPE Z-JOINT 1000 SN8 WHITE 12,5M PE	66	1,30E2	12,5	1,63E3
1006558	WEHOLITE PIPE Z-JOINT 600 SN12,5 WHITE 12,5M PE	34,3	6,76E1	12,5	8,45E2
1010045	WEHOLITE PIPE Z-JOINT 2000 SN4 WHITE SPECIAL LENGTH PE	196	3,86E2	N/A	N/A
1010051	WEHOLITE PIPE Z-JOINT 1500 SN8 WHITE SPECIAL LENGTH PE	150	2,96E2	N/A	N/A
1010052	WEHOLITE PIPE Z-JOINT 1600 SN8 WHITE SPECIAL LENGTH PE	172	3,39E2	N/A	N/A
1010053	WEHOLITE PIPE Z-JOINT 2600 SN8 WHITE SPECIAL LENGTH PE	450	8,87E2	N/A	N/A
1068778	WEHOLITE PIPE 560/500 SN4 BLACK SPECIAL LENGTH PE	14,4	2,84E1	N/A	N/A
1072754	WEHOLITE PIPE 338/300 SN8 WHITE 12,5M PE	7,3	1,44E1	12,5	1,80E2
1072765	WEHOLITE PIPE 540/500 SN2 WHITE 12,5M PE	11,8	2,32E1	12,5	2,91E2
1072776	WEHOLITE PIPE 650/600 SN2 WHITE 12,5M PE	15,8	3,11E1	12,5	3,89E2
1072785	WEHOLITE PIPE 756/700 SN2 WHITE 12,5M PE	22	4,33E1	12,5	5,42E2
1072794	WEHOLITE PIPE 790/700 SN8 WHITE 12,5M PE	34	6,70E1	12,5	8,37E2
1072800	WEHOLITE PIPE 866/800 SN2 WHITE 12,5M PE	26,2	5,16E1	12,5	6,45E2
1072803	WEHOLITE PIPE 906/800 SN4 WHITE 12,5M PE	35,5	6,99E1	12,5	8,74E2

1072816	WEHOLITE PIPE 1013/900 SN8 WHITE 12,5M PE	54,5	1,07E2	12,5	1,34E3
1072820	WEHOLITE PIPE 1084/1000 SN2 WHITE 12,5M PE	38,8	7,64E1	12,5	9,55E2
1072822	WEHOLITE PIPE 1104/1000 SN4 WHITE SPECIAL LENGTH PE	48,5	9,55E1	N/A	N/A
1072828	WEHOLITE PIPE 1299/1200 SN2 WHITE SPECIAL LENGTH PE	58	1,14E2	N/A	N/A
1072832	WEHOLITE PIPE 1324/1200 SN4 WHITE 12,5M PE	71	1,40E2	12,5	1,75E3
1072834	WEHOLITE PIPE 1352/1200 SN8 WHITE 12,5M PE	96	1,89E2	12,5	2,36E3
1072837	WEHOLITE PIPE 1355/1250 SN2 WHITE 12,5M PE	60,1	1,18E2	12,5	1,48E3
1072839	WEHOLITE PIPE 1378/1250 SN4 WHITE 12,5M PE	77,2	1,52E2	12,5	1,90E3
1072841	WEHOLITE PIPE 1514/1400 SN2 WHITE 12,5M PE	75	1,48E2	12,5	1,85E3
1072844	WEHOLITE PIPE 1546/1400 SN4 WHITE 12,5M PE	97,8	1,93E2	12,5	2,41E3
1072844	WEHOLITE PIPE 1546/1400 SN4 WHITE 12,5M PE	99,7	1,96E2	12,5	2,46E3
1072848	WEHOLITE PIPE 1578/1400 SN8 WHITE 12,5M PE	132	2,60E2	12,5	3,25E3
1072851	WEHOLITE PIPE 1623/1500 SN2 WHITE 12,5M PE	85,9	1,69E2	12,5	2,12E3
1072854	WEHOLITE PIPE 1654/1500 SN4 WHITE 12,5M PE	108	2,13E2	12,5	2,66E3
1072859	WEHOLITE PIPE 1732/1600 SN2 WHITE 12,5M PE	98,5	1,94E2	12,5	2,43E3
1072861	WEHOLITE PIPE 1768/1600 SN4 WHITE SPECIAL LENGTH PE	126	2,48E2	N/A	N/A
1072868	WEHOLITE PIPE 1948/1800 SN2 WHITE SPECIAL LENGTH PE	124	2,44E2	N/A	N/A
1072875	WEHOLITE PIPE 2030/1800 SN8 WHITE 12,5M PE	230	4,53E2	12,5	5,66E3
1072878	WEHOLITE PIPE 2168/2000 SN2 WHITE 12,5M PE	158	3,11E2	12,5	3,89E3
1072884	WEHOLITE PIPE 2253/2000 SN8 WHITE SPECIAL LENGTH PE	260	5,12E2	N/A	N/A
1072890	WEHOLITE PIPE 2426/2200 SN4 WHITE SPECIAL LENGTH PE	239	4,71E2	N/A	N/A
1072900	WEHOLITE PIPE 2653/2400 SN4 WHITE 12,5M PE	278	5,48E2	12,5	6,85E3
1072905	WEHOLITE PIPE 2756/2500 SN4 WHITE SPECIAL LENGTH PE	325	6,40E2	N/A	N/A
1072908	WEHOLITE PIPE 2813/2600 SN2 WHITE 12,5M PE	262	5,16E2	12,5	6,45E3
1072914	WEHOLITE PIPE 3320/3000 SN4 WHITE 12,5M PE	450	8,87E2	12,5	1,11E4
1074969	WEHOLITE PIPE 1989/1800 SN4 WHITE SPECIAL LENGTH PE	158	3,11E2	N/A	N/A
1074970	WEHOLITE PIPE 2389/2200 SN2 WHITE SPECIAL LENGTH PE	185	3,64E2	N/A	N/A
1091533	WEHOLITE PIPE Z-JOINT 3000 SN8 WHITE SPECIAL LENGTH PE	623	1,23E3	N/A	N/A
1092642	WEHOLITE PIPE Z-JOINT 2200 SN8 WHITE SPECIAL LENGTH PE	328	6,46E2	N/A	N/A
1096916	WEHOLITE PIPE Z-JOINT 1000 SN16 WHITE 12,5M PE	105	2,07E2	12,5	2,59E3
1096930	WEHOLITE PIPE 400 SN10 WHITE 3,125M PE	14,5	2,86E1	3,125	8,93E1
1118873	WEHOLITE PIPE Z-JOINT 800 SN16 WHITE 12,5M PE	66,8	1,32E2	12,5	1,64E3
1119230	WEHOLITE PIPE 800 SN10 WHITE 3,125M PE	52	1,02E2	3,125	3,20E2
1120361	WEHOLITE PIPE Z-JOINT 1100 SN4 BLACK 15M PE100	60,7	1,20E2	15	1,79E3
1121553	WEHOLITE PIPE Z-JOINT 500 SN16 WHITE 12,5M PE	26,6	5,24E1	12,5	6,55E2
1121726	WEHOLITE PIPE Z-JOINT 1000 SN12,5 WHITE 6,25M PE	94,5	1,86E2	6,25	1,16E3
1122079	WEHOLITE PIPE Z-JOINT 900 SN10 WHITE SPECIAL LENGTH PE	68,1	1,34E2	N/A	N/A