

LIFE CYCLE ASSESSMENT REPORT

THIS DOCUMENT IS NOT AN EXTERNALLY VERIFIED ENVIRONMENTAL PRODUCT DECLARATION (EPD)

This report is created and published by Uponor Corporation and is based on the Mass Balance Approach (MBA) for the utilization of biobased feedstocks. MBA is currently not recognized within EN15804 and consequently can not be used in formal EPDs. The EPD of the corresponding standard product without biobased feedstocks is available at epdhub.com, EPD number HUB-0561.



Ultra Blue Pipes (Ultra Classic Blue, Ultra Double Blue) Uponor Corporation



GENERAL INFORMATION

MANUFACTURER

Manufacturer	Uponor Corporation
Address	Ilmalantori 4, 00240 Helsinki, Finland
Contact details	info@uponor.com
Website	www.uponor.com

STANDARDS, SCOPE AND VERIFICATION

Program operator	N/A
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	N/A
Sector	Construction product
Category	Manufacturer's disclosure document; Parent EPD: EPDHUB-HUB-0561
Scope	Cradle to gate with options, A4-A5, and modules C1-C4, D
Author	Uponor Corporation
Verification	Independent verification of this EPD and data, according to ISO 14025: NOT VERIFIED ☐ Internal certification ☐ External verification
Verifier	N/A

The manufacturer has the sole ownership, liability, and responsibility for the environmental disclosure document. Disclosure documents within the same product category but from different programs may not be comparable. Disclosure documents 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	Ultra Blue Pipes (Ultra Classic Blue, Ultra Classic Blue)
Additional labels	Ultra Classic Blue, Ultra Double Blue
Product reference	1056763 1056764 1056765 1056766 1056767 1056768 1056769 1056770 1056771 1056772 1056773 1056774 1056775 1056776 1056777 1056778 1056779 1059440 1059441 1059442 1060628 1060629 1060630 1060631 1060632 1060633 1058710 1058711 1058712 1058713 1058714 1058715 1057889 1057890 1057891 1057892 1057894
Place of production	Uponor Infra Oy, Kouvolantie 365, 15550 Nastola, Finland Uponor Infra Ab, Industrivägen 11, 513 32 Fristad, Sweden
Period for data	2021
Averaging	No averaging
Variation in GWP-fossil for A1-A3	-%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of pipe
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO ₂ e)	2,14E0
GWP-total, A1-A3 (kgCO ₂ e)	6,39E-1
Secondary material, inputs (%)	68,2
Secondary material, outputs (%)	5,0
Total energy use, A1-A3 (kWh)	9.22
Total water use, A1-A3 (m ³ e)	7,17E-2

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

As one of the leading suppliers of plastic pipe systems, Uponor attaches great importance to product development. This document covers two pipe systems for gravity sewer applications products within the Ultra Blue Pipes portfolio:

- 1) Ultra Classic Blue has a structural wall design developed for impact-resistant and durable pipes with superior properties. Ultra Classic Blue offers good ergonomics and simplicity in handling and installation. The inner and outer layers of the pipe are made of solid Polypropylene (PP), while the middle layer consists of PP containing microbubbles.
- 2) Ultra Double Blue comes with an in-line socket and is manufactured with double layers which provides a rigid construction to ensure tightness. Its light weight makes it quick and easy to install. It is used with Ultra Rib 2 pipe parts. Mounting with a sealing ring ensures a completely watertight system. The sealing ring can be delivered with an oil resistant material or with standard material.

The Ultra Blue pipes are part of Uponor's sustainable product offering. The renewable PP raw material used are from Borealis' Bornewables™ portfolio. These raw materials are made using sustainably-sourced ISCC-certified renewable feedstocks derived solely from waste and residue streams unfit for human consumption and therefore do not impact food security. Further information can be found at www.uponor.com.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass- %	Material origin
Fossil materials	32	EU
Bio-based materials	68	EU

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,58
Biogenic carbon content in packaging, kg C	0.002

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of pipe
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 document 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.

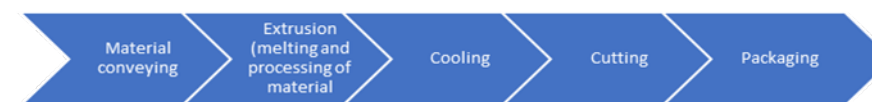
The production method is a pipe extrusion with in-line socketing. Socket and pipe of same material. The different stages are:

- Material conveying
- Extrusion (melting and processing of material)
- Pipe profile corrugation
- Cooling
- Cutting

- Packing

The finished product is packed on a wooden U-frame with a wooden lath on top of it. The number of pipes on a frame differs depending on the pipe diameter. Pipes with diameter 800mm and bigger are not packed. The wooden frame has a nail plate on the edge to strengthen the structure as well as a plastic (NA) or steel band (FR) around to tighten the package.

MANUFACTURING PROCESS



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 documents are based on TEPPFA'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 affluents of typical European installations, including (but not limited to) the size of installation trenches, machinery used for digging/excavation and volume of backfilling sand required for the installation. These parameters have been used as input for the modelling (Ref: <https://www.teppfa.eu/sustainability/environmental-footprint/epd/>).

PRODUCT USE AND MAINTENANCE (B1-B7)

This document 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 PP, the end-of-life product is converted into recycled PP (D).



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	No allocation
Ancillary materials	No allocation
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	-%

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

LCA SOFTWARE AND BIBLIOGRAPHY

This Environmental Profile Disclosure has been created using One Click LCA EPD Generator. The LCA and disclosure document 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	4,82E-1	1,54E-1	2,29E-3	6,39E-1	5,35E-2	1,19E-1	MND	MND	MND	MND	MND	MND	MND	2,58E-6	3,19E-4	1,22E-1	2,03E0	-1,28E-1
GWP – fossil	kg CO ₂ e	1,98E0	1,54E-1	2,96E-3	2,14E0	5,4E-2	1,18E-1	MND	MND	MND	MND	MND	MND	MND	2,58E-6	3,19E-4	1,17E-2	6,17E-3	6,68E-3
GWP – biogenic	kg CO ₂ e	-2,14E0	1,05E-4	-6,72E-4	-2,14E0	3,31E-5	8,47E-4	MND	MND	MND	MND	MND	MND	MND	-1,81E-9	1,95E-7	1,1E-1	2,03E0	-1,34E-1
GWP – LULUC	kg CO ₂ e	6,34E-1	4,95E-5	1,51E-6	6,34E-1	1,91E-5	1,3E-5	MND	MND	MND	MND	MND	MND	MND	7,42E-9	1,12E-7	1,3E-5	3,26E-6	5,64E-5
Ozone depletion pot.	kg CFC ₁₁ e	7,49E-8	3,58E-8	1,14E-10	1,11E-7	1,24E-8	2,48E-8	MND	MND	MND	MND	MND	MND	MND	1,85E-13	7,3E-11	1,49E-9	1,6E-9	1,98E-9
Acidification potential	mol H ⁺ e	9,7E-3	6,41E-4	9,05E-6	1,03E-2	2,22E-4	1,2E-3	MND	MND	MND	MND	MND	MND	MND	3,29E-8	1,31E-6	5,97E-5	4,62E-5	8,3E-5
EP-freshwater ²⁾	kg Pe	1,85E-4	1,28E-6	7,1E-8	1,86E-4	4,66E-7	6,87E-7	MND	MND	MND	MND	MND	MND	MND	2,81E-10	2,75E-9	3,39E-7	9,8E-8	8,68E-7
EP-marine	kg Ne	8,54E-3	1,92E-4	1,94E-6	8,74E-3	6,58E-5	5,27E-4	MND	MND	MND	MND	MND	MND	MND	3,72E-9	3,89E-7	2E-5	1,61E-5	2,64E-5
EP-terrestrial	mol Ne	3,4E-2	2,12E-3	2,13E-5	3,62E-2	7,28E-4	5,78E-3	MND	MND	MND	MND	MND	MND	MND	4,34E-8	4,29E-6	1,77E-4	1,77E-4	2,44E-4
POCP (“smog”) ³⁾	kg NMVOCe	5,83E-3	6,75E-4	6,93E-6	6,51E-3	2,28E-4	1,59E-3	MND	MND	MND	MND	MND	MND	MND	1,42E-8	1,35E-6	5,8E-5	5,06E-5	3,39E-5
ADP-minerals & metals ⁴⁾	kg Sbe	1,22E-5	3,11E-6	1,31E-7	1,54E-5	1,35E-6	2,04E-7	MND	MND	MND	MND	MND	MND	MND	2,66E-10	7,95E-9	2,41E-7	1,01E-7	1,36E-7
ADP-fossil resources	MJ	3,34E1	2,37E0	1,72E-2	3,58E1	8,24E-1	1,61E0	MND	MND	MND	MND	MND	MND	MND	2,92E-5	4,86E-3	1,94E-1	1,19E-1	-6,84E-1
Water use ⁵⁾	m ³ e depr.	7,86E-1	8,68E-3	6,06E-4	7,96E-1	2,93E-3	1,16E-2	MND	MND	MND	MND	MND	MND	MND	1,32E-6	1,73E-5	3,94E-3	3,57E-3	-9,28E-3

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	6,23E-8	1,31E-8	1,22E-10	7,55E-8	4,17E-9	3,17E-8	MND	MND	MND	MND	MND	MND	MND	2,44E-13	2,46E-11	8,91E-10	7,89E-10	2,04E-9
Ionizing radiation ⁶⁾	kBq U235e	1,07E-1	1,04E-2	4,73E-5	1,17E-1	3,6E-3	6,86E-3	MND	MND	MND	MND	MND	MND	MND	7,87E-8	2,12E-5	5,01E-4	4,76E-4	3,18E-4
Ecotoxicity (freshwater)	CTUe	9,63E0	1,83E0	5,91E-2	1,15E1	6,43E-1	1,03E0	MND	MND	MND	MND	MND	MND	MND	2,7E-4	3,8E-3	2,69E-1	9,97E-2	6,72E-1
Human toxicity, cancer	CTUh	2,87E-10	4,88E-11	5,85E-12	3,41E-10	1,82E-11	5,34E-11	MND	MND	MND	MND	MND	MND	MND	1,09E-14	1,08E-13	1,7E-11	3,54E-12	3,28E-11
Human tox. non-cancer	CTUh	1,01E-8	2,14E-9	8,14E-11	1,23E-8	7,38E-10	1,03E-9	MND	MND	MND	MND	MND	MND	MND	3,4E-13	4,35E-12	2,62E-10	8,61E-11	4,08E-10
SQP ⁷⁾	-	2,88E1	3,22E0	1,87E-2	3,21E1	9,18E-1	4,87E-2	MND	MND	MND	MND	MND	MND	MND	2,19E-5	5,42E-3	1,29E-1	3,12E-1	1,44E-1

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	1,01E1	3,14E-2	2,49E-1	1,04E1	1,17E-2	1,28E-2	MND	MND	MND	MND	MND	MND	MND	3,89E-4	6,9E-5	8,29E-3	2,05E-3	2,17E-2
Renew. PER as material	MJ	3,16E1	0E0	9,4E-3	3,16E1	0E0	-1E-2	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-1,58E0	-3E1	1,59E0
Total use of renew. PER	MJ	4,17E1	3,14E-2	2,59E-1	4,2E1	1,17E-2	2,76E-3	MND	MND	MND	MND	MND	MND	MND	3,89E-4	6,9E-5	-1,57E0	-3E1	1,61E0
Non-re. PER as energy	MJ	2,05E1	2,37E0	1,72E-2	2,28E1	8,24E-1	1,61E0	MND	MND	MND	MND	MND	MND	MND	2,92E-5	4,86E-3	1,94E-1	1,19E-1	7,9E-2
Non-re. PER as material	MJ	1,53E1	0E0	0E0	1,53E1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	-7,64E-1	-1,45E1	-1,58E-2
Total use of non-re. PER	MJ	3,57E1	2,37E0	1,72E-2	3,81E1	8,24E-1	1,61E0	MND	MND	MND	MND	MND	MND	MND	2,92E-5	4,86E-3	-5,7E-1	-1,44E1	6,31E-2
Secondary materials	kg	6,82E-1	0E0	0E0	6,82E-1	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	4,99E-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	7,12E-2	4,77E-4	1,35E-5	7,17E-2	1,56E-4	6,04E-4	MND	MND	MND	MND	MND	MND	MND	3,61E-8	9,21E-7	4,67E-5	9,37E-5	8,66E-5

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	1,34E-2	2,37E-3	2,64E-4	1,61E-2	8,57E-4	2,53E-3	MND	MND	MND	MND	MND	MND	MND	3,76E-7	5,06E-6	0E0	2,16E-4	2,46E-3
Non-hazardous waste	kg	4,02E-1	2,36E-1	5,72E-3	6,43E-1	7,12E-2	2,81E-2	MND	MND	MND	MND	MND	MND	MND	1,91E-5	4,2E-4	0E0	3,08E-1	4,86E-2
Radioactive waste	kg	9E-6	1,63E-5	5,09E-8	2,53E-5	5,63E-6	1,11E-5	MND	MND	MND	MND	MND	MND	MND	8,02E-11	3,32E-8	0E0	7,27E-7	5,51E-7

END OF LIFE – OUTPUT FLOWS

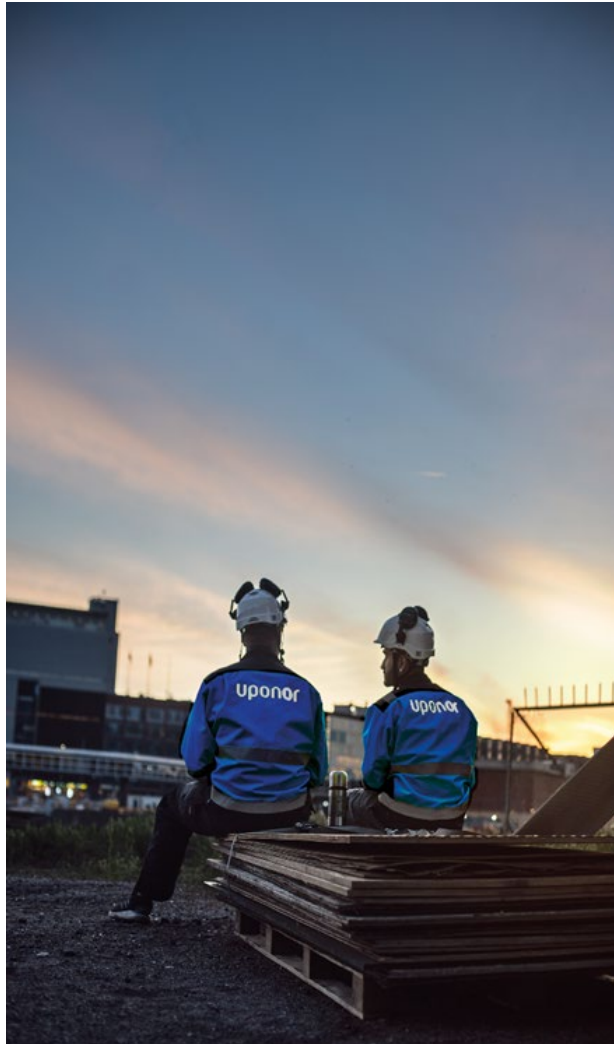
Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0E0	0E0	0E0	0E0	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	0E0	0E0	0E0
Materials for recycling	kg	0E0	0E0	1,4E-3	1,4E-3	0E0	0E0	MND	MND	MND	MND	MND	MND	MND	0E0	0E0	5E-2	0E0	0E0
Materials for energy rec	kg	0E0	0E0	0E0	0E0	0E0	4E-4	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	2,54E-1	1,52E-1	2,98E-3	4,09E-1	5,35E-2	1,17E-1	MND	MND	MND	MND	MND	MND	MND	2,5E-6	3,16E-4	1,31E-2	6,09E-3	9,56E-3
Ozone depletion Pot.	kg CFC ₁₁ e	2,86E-6	2,85E-8	1,01E-10	2,89E-6	9,85E-9	1,96E-8	MND	MND	MND	MND	MND	MND	MND	1,7E-13	5,81E-11	1,21E-9	1,27E-9	1,54E-9
Acidification	kg SO ₂ e	7,38E-3	3,13E-4	7,27E-6	7,7E-3	1,1E-4	1,85E-4	MND	MND	MND	MND	MND	MND	MND	2,85E-8	6,49E-7	4,44E-5	2,29E-4	7,03E-5
Eutrophication	kg PO ₄ ³ e	5,05E-3	6,4E-5	5,01E-6	5,12E-3	2,29E-5	3,82E-5	MND	MND	MND	MND	MND	MND	MND	1,24E-8	1,35E-7	4,51E-5	7,98E-6	1,15E-4
POCP ("smog")	kg C ₂ H ₄ e	4,91E-4	2E-5	5,42E-7	5,11E-4	7,11E-6	1,93E-5	MND	MND	MND	MND	MND	MND	MND	1,53E-9	4,2E-8	3,77E-6	1,29E-6	3,12E-6
ADP-elements	kg Sbe	1,22E-5	3,11E-6	1,31E-7	1,54E-5	1,35E-6	2,04E-7	MND	MND	MND	MND	MND	MND	MND	2,66E-10	7,95E-9	2,41E-7	1,01E-7	1,36E-7
ADP-fossil	MJ	3,34E1	2,37E0	1,72E-2	3,58E1	8,24E-1	1,61E0	MND	MND	MND	MND	MND	MND	MND	2,92E-5	4,86E-3	1,94E-1	1,19E-1	-6,84E-1

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	5,89E-1	1,52E-1	2,98E-3	7,44E-1	5,34E-2	1,16E-1	MND	MND	MND	MND	MND	MND	MND	2,49E-6	3,15E-4	1,33E-2	6,07E-3	9,59E-3
Ozone Depletion	kg CFC ₁₁ e	1,29E-8	3,79E-8	1,28E-10	5,1E-8	1,31E-8	2,62E-8	MND	MND	MND	MND	MND	MND	MND	2,11E-13	7,74E-11	1,61E-9	1,7E-9	2,18E-9
Acidification	kg SO ₂ e	1,82E-3	5,58E-4	7,8E-6	2,39E-3	1,93E-4	1,1E-3	MND	MND	MND	MND	MND	MND	MND	2,65E-8	1,14E-6	5,22E-5	4,12E-5	7,97E-5
Eutrophication	kg Ne	1,23E-4	7,86E-5	1,28E-6	2,03E-4	2,73E-5	9,79E-5	MND	MND	MND	MND	MND	MND	MND	3,01E-9	1,61E-7	1,09E-5	4,69E-6	1,62E-5
POCP ("smog")	kg O ₃ e	2,31E-2	1,22E-2	1,04E-4	3,54E-2	4,17E-3	3,35E-2	MND	MND	MND	MND	MND	MND	MND	2,16E-7	2,46E-5	1,01E-3	1,02E-3	1,37E-3
ADP-fossil	MJ	3,34E0	3,4E-1	1,61E-3	3,68E0	1,18E-1	2,34E-1	MND	MND	MND	MND	MND	MND	MND	2,45E-6	6,93E-4	2,42E-2	1,62E-2	-1,25E-1



VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS DISCLOSURE DOCUMENT

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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)
1056763	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 0,5M PP	1,17	7,48E-1	0,5	3,74E-1
1056764	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 1M PP	1,09	6,97E-1	1	6,97E-1
1056765	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 2M PP	1,05	6,71E-1	2	1,34E+0
1056766	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 3M PP	1,07	6,84E-1	3	2,05E+0
1056767	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 6M PP	1,03	6,58E-1	6	3,95E+0
1056768	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 1M PP	1,21	7,73E-1	1	7,73E-1
1056769	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 2M PP	1,17	7,48E-1	2	1,50E+0
1056770	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 3M PP	1,15	7,35E-1	3	2,20E+0
1056771	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 6M PP	1,28	8,18E-1	6	4,91E+0
1056772	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 1M PP	2,36	1,51E+0	1	1,51E+0
1056773	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 2M PP	2,25	1,44E+0	2	2,88E+0
1056774	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 3M PP	2,21	1,41E+0	3	4,24E+0
1056775	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 6M PP	2,18	1,39E+0	6	8,36E+0
1056776	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 1M PP	2,59	1,66E+0	1	1,66E+0
1056777	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 2M PP	2,48	1,58E+0	2	3,17E+0
1056778	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 3M PP	2,43	1,55E+0	3	4,66E+0
1056779	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 6M PP	2,43	1,55E+0	6	9,32E+0
1059440	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 2M PP	3,39	2,17E+0	2	4,33E+0
1059441	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 3M PP	3,65	2,33E+0	3	7,00E+0
1059442	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 6M PP	3,61	2,31E+0	6	1,38E+1
1060628	ULTRA CLASSIC BLUE SOCKET PIPE 250 SN8 3M PP	5,65	3,61E+0	3	1,08E+1
1060629	ULTRA CLASSIC BLUE SOCKET PIPE 250 SN8 6M PP	5,54	3,54E+0	6	2,12E+1
1060630	ULTRA CLASSIC BLUE SOCKET PIPE 315 SN8 3M PP	9,35	5,97E+0	3	1,79E+1
1060631	ULTRA CLASSIC BLUE SOCKET PIPE 315 SN8 6M PP	9,13	5,83E+0	6	3,50E+1
1060632	ULTRA CLASSIC BLUE SOCKET PIPE 400 SN8 3M PP	15,24	9,74E+0	3	2,92E+1
1060633	ULTRA CLASSIC BLUE SOCKET PIPE 400 SN8 6M PP	14,78	9,44E+0	6	5,67E+1
1058710	ULTRA DOUBLE BLUE SEWER PIPE 200 SN8 RED BROWN 3M PP	2,1	1,34E+0	3	4,03E+0

1058711	ULTRA DOUBLE BLUE SEWER PIPE 200 SN8 RED BROWN 6M PP	2,02	1,29E+0	6	7,74E+0
1058712	ULTRA DOUBLE BLUE SEWER PIPE 250 SN8 RED BROWN 3M PP	3,13	2,00E+0	3	6,00E+0
1058713	ULTRA DOUBLE BLUE SEWER PIPE 250 SN8 RED BROWN 6M PP	3	1,92E+0	6	1,15E+1
1058713	ULTRA DOUBLE BLUE SEWER PIPE 315 SN8 RED BROWN 3M PP	4,73	3,02E+0	3	9,07E+0
1058714	ULTRA DOUBLE BLUE SEWER PIPE 315 SN8 RED BROWN 6M PP	4,6	2,94E+0	6	1,76E+1
1058715	ULTRA DOUBLE BLUE SEWER PIPE 450 SN8 3M PP	7,67	4,90E+0	3	1,47E+1
1057889	ULTRA DOUBLE BLUE SEWER PIPE 450 SN8 6M PP	8,39	5,36E+0	6	3,22E+1
1057890	ULTRA DOUBLE BLUE SEWER PIPE 560 SN8 3M PP	11,67	7,46E+0	3	2,24E+1
1057891	ULTRA DOUBLE BLUE SEWER PIPE 560 SN8 6M PP	13,87	8,86E+0	6	5,32E+1
1057892	ULTRA DOUBLE BLUE SEWER PIPE 680 SN8 2,8M PP	21,07	1,35E+1	2,8	3,77E+1
1057894	ULTRA DOUBLE BLUE SEWER PIPE 680 SN8 6M PP	16,17	1,03E+1	6	6,20E+1

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)
1056763	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 0,5M PP	1,17	4,79E-1	0,5	2,39E-1
1056764	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 1M PP	1,09	4,46E-1	1	4,46E-1
1056765	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 2M PP	1,05	4,29E-1	2	8,59E-1
1056766	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 3M PP	1,07	4,38E-1	3	1,31E+0
1056767	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN4 6M PP	1,03	4,21E-1	6	2,53E+0
1056768	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 1M PP	1,21	4,95E-1	1	4,95E-1
1056769	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 2M PP	1,17	4,79E-1	2	9,57E-1
1056770	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 3M PP	1,15	4,70E-1	3	1,41E+0
1056771	ULTRA CLASSIC BLUE SOCKET PIPE 110 SN8 6M PP	1,28	5,24E-1	6	3,14E+0
1056772	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 1M PP	2,36	9,65E-1	1	9,65E-1
1056773	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 2M PP	2,25	9,20E-1	2	1,84E+0
1056774	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 3M PP	2,21	9,04E-1	3	2,71E+0
1056775	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN4 6M PP	2,18	8,92E-1	6	5,35E+0
1056776	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 1M PP	2,59	1,06E+0	1	1,06E+0

1056777	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 2M PP	2,48	1,01E+0	2	2,03E+0
1056778	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 3M PP	2,43	9,94E-1	3	2,98E+0
1056779	ULTRA CLASSIC BLUE SOCKET PIPE 160 SN8 6M PP	2,43	9,94E-1	6	5,96E+0
1059440	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 2M PP	3,39	1,39E+0	2	2,77E+0
1059441	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 3M PP	3,65	1,49E+0	3	4,48E+0
1059442	ULTRA CLASSIC BLUE SOCKET PIPE 200 SN8 6M PP	3,61	1,48E+0	6	8,86E+0
1060628	ULTRA CLASSIC BLUE SOCKET PIPE 250 SN8 3M PP	5,65	2,31E+0	3	6,93E+0
1060629	ULTRA CLASSIC BLUE SOCKET PIPE 250 SN8 6M PP	5,54	2,27E+0	6	1,36E+1
1060630	ULTRA CLASSIC BLUE SOCKET PIPE 315 SN8 3M PP	9,35	3,82E+0	3	1,15E+1
1060631	ULTRA CLASSIC BLUE SOCKET PIPE 315 SN8 6M PP	9,13	3,73E+0	6	2,24E+1
1060632	ULTRA CLASSIC BLUE SOCKET PIPE 400 SN8 3M PP	15,24	6,23E+0	3	1,87E+1
1060633	ULTRA CLASSIC BLUE SOCKET PIPE 400 SN8 6M PP	14,78	6,05E+0	6	3,63E+1
1058710	ULTRA DOUBLE BLUE SEWER PIPE 200 SN8 RED BROWN 3M PP	2,1	8,59E-1	3	2,58E+0
1058711	ULTRA DOUBLE BLUE SEWER PIPE 200 SN8 RED BROWN 6M PP	2,02	8,26E-1	6	4,96E+0
1058712	ULTRA DOUBLE BLUE SEWER PIPE 250 SN8 RED BROWN 3M PP	3,13	1,28E+0	3	3,84E+0
1058713	ULTRA DOUBLE BLUE SEWER PIPE 250 SN8 RED BROWN 6M PP	3	1,23E+0	6	7,36E+0
1058713	ULTRA DOUBLE BLUE SEWER PIPE 315 SN8 RED BROWN 3M PP	4,73	1,93E+0	3	5,80E+0
1058714	ULTRA DOUBLE BLUE SEWER PIPE 315 SN8 RED BROWN 6M PP	4,6	1,88E+0	6	1,13E+1
1058715	ULTRA DOUBLE BLUE SEWER PIPE 450 SN8 3M PP	7,67	3,14E+0	3	9,41E+0
1057889	ULTRA DOUBLE BLUE SEWER PIPE 450 SN8 6M PP	8,39	3,43E+0	6	2,06E+1
1057890	ULTRA DOUBLE BLUE SEWER PIPE 560 SN8 3M PP	11,67	4,77E+0	3	1,43E+1
1057891	ULTRA DOUBLE BLUE SEWER PIPE 560 SN8 6M PP	13,87	5,67E+0	6	3,40E+1
1057892	ULTRA DOUBLE BLUE SEWER PIPE 680 SN8 2,8M PP	21,07	8,62E+0	2,8	2,41E+1
1057894	ULTRA DOUBLE BLUE SEWER PIPE 680 SN8 6M PP	16,17	6,61E+0	6	3,97E+1