

ENVIRONMENTAL PRODUCT DECLARATION

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

Uponor Q&E (PPSU)
Uponor Corporation



EPD HUB, HUB-1142

Publishing date 21 February 2024, last updated on 21 February 2024, valid until 21 February 2029.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Uponor Corporation
Address	Ilmalantori 4, 00240 Helsinki, 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 Hjort, 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	Magaly González Vázquez, 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	Uponor Q&E (PPSU)
Additional labels	
Product reference	1001235 1001240 1001245 1001250 1001420 1001422 1001424 1001426 1001428 1008661 1008662 1008663 1008664 1008665 1008666 1008667 1008668 1008669 1008671 1008673 1008674 1008675 1008676 1008678 1008679 1008680 1008681 1008683 1008684 1008685 1008686 1008688 1008689 1008690 1008691 1008694 1008695 1008696 1008697 1008699 1008700 1008701 1008702 1008703 1008704 1008707 1008708 1008709 1008710 1008711 1008712 1008713 1008714 1008715 1008722 1008723 1008724 1008725 1008932 1042858 1042859 1042860 1042861 1042863 1042864 1042865 1042866 1042867 1042870 1042871 1042873 1042876 1042877 1042879 1085080 1085081 1085083 1085084 1085085 1120979 1120980
Place of production	Kouvolantie 365, 15560 Nastola, Finland
Period for data	2022
Averaging in EPD	No averaging
Variation in GWP-fossil for A1-A3	%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of product
Declared unit mass	1 kg
GWP-fossil, A1-A3 (kgCO2e)	9,08E+00
GWP-total, A1-A3 (kgCO2e)	8,97E+00
Secondary material, inputs (%)	1,8
Secondary material, outputs (%)	92,8
Total energy use, A1-A3 (kWh)	51,6
Total water use, A1-A3 (m3e)	1,49E-01

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

Uponor Q&E is a unique and innovative fittings system that uses the shrink-back effect of cross-linked polyethylene PE-Xa pipes for quick and easy installation. A wide range of fittings and accessories makes Q&E a complete and secure system for cost-effective installation. Corrosion resistance makes it safe, secure, and watertight. This EPD covers Q&E fittings made from Polyphenylsulfone (PPSU).

Application areas:

- Tap water: The permanent operating temperature ranges from 0°C to 70°C at a maximum permanent operating pressure of 10 bar. The short-term malfunction temperature is 95°C for a period of 100 hours in the operating lifetime.
- Heating: The permanent operating temperature ranges up to 80°C at a maximum permanent operating pressure of 10 bar. The short-term malfunction temperature is 100°C for a period of 100 hours in the operating lifetime.

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

PRODUCT RAW MATERIAL MAIN COMPOSITION

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

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	-
Biogenic carbon content in packaging, kg C	0.00049

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of product
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

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

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

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

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

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

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production 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.

Uponor Q&E is manufactured by injection moulding process with Polyphenylsulfone (PPSU) raw material. The fittings are supplied to the construction site packed in cardboard boxes on pallets. Installation instructions come with each pack.

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 transportation distance is defined according to the standard. Average distance of transportation from production plant to building site is based on the actual sales average figures of the company in of the local markets and the transportation method is assumed to be lorry. Vehicle capacity utilization volume factor is assumed to be 100 which means full load. In reality, it may vary but as the role of transportation emissions in the total results is small, the variety in load is assumed to be negligible. Empty returns are not taken into account as it is assumed that a return trip is used by the transportation company to serve the needs of other clients. Transportation does not cause losses as the products are packaged properly. Volume capacity utilisation factor is assumed to be <1 for the nested packaged products. Each wooden pallet is assumed to be re-used 120 times based on actual re-use scenarios.

Environmental impacts from installation into the building include waste packaging materials (A5) and release of biogenic carbon dioxide from wood pallets.

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). The end-of-life product is assumed to be sent to the closest facility by lorry and is assumed to be 50 km away (C2). 100% of the end-of-life product is collected separately from the demolition site while 75% is sent to recycling and 25% to incineration facilities (C3). Due to the recycling and incineration potential of PPSU, the end-of-life product is converted into recycled material while energy and heat are produced from its incineration (D). The benefits and loads of waste packaging materials in A5 are also considered in module 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 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 v3.8 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	8,00E+00	8,38E-01	1,30E-01	8,97E+00	1,03E-01	1,61E-01	MND	MND	MND	MND	MND	MND	MND	MNR	4,69E-03	1,52E-01	0,00E+00	4,98E-01
GWP – fossil	kg CO ₂ e	7,98E+00	8,37E-01	2,69E-01	9,09E+00	1,03E-01	2,09E-02	MND	MND	MND	MND	MND	MND	MND	MNR	4,69E-03	1,67E-01	0,00E+00	4,99E-01
GWP – biogenic	kg CO ₂ e	1,58E-02	0,00E+00	-1,40E-01	-1,24E-01	0,00E+00	1,40E-01	MND	MND	MND	MND	MND	MND	MND	MNR	1,22E-07	-1,58E-02	0,00E+00	0,00E+00
GWP – LULUC	kg CO ₂ e	6,05E-03	3,09E-04	2,09E-04	6,57E-03	3,81E-05	1,61E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,73E-06	1,02E-04	0,00E+00	-1,67E-04
Ozone depletion pot.	kg CFC ₁₁ e	1,07E-06	1,93E-07	8,54E-09	1,27E-06	2,38E-08	1,06E-09	MND	MND	MND	MND	MND	MND	MND	MNR	1,08E-09	3,41E-09	0,00E+00	-1,32E-08
Acidification potential	mol H ⁺ e	3,71E-02	3,55E-03	1,02E-03	4,17E-02	4,38E-04	5,88E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,99E-05	2,74E-04	0,00E+00	-1,90E-03
EP-freshwater ²⁾	kg Pe	2,83E-04	6,86E-06	7,43E-06	2,97E-04	8,47E-07	6,21E-07	MND	MND	MND	MND	MND	MND	MND	MNR	3,84E-08	2,17E-06	0,00E+00	-1,40E-05
EP-marine	kg Ne	6,61E-03	1,05E-03	1,92E-04	7,86E-03	1,30E-04	1,46E-05	MND	MND	MND	MND	MND	MND	MND	MNR	5,90E-06	7,96E-05	0,00E+00	-1,86E-04
EP-terrestrial	mol Ne	6,80E-02	1,16E-02	2,09E-03	8,17E-02	1,44E-03	1,43E-04	MND	MND	MND	MND	MND	MND	MND	MNR	6,51E-05	8,34E-04	0,00E+00	-2,21E-03
POCP (“smog”) ³⁾	kg NMVOCe	3,06E-02	3,72E-03	9,25E-04	3,53E-02	4,59E-04	4,48E-05	MND	MND	MND	MND	MND	MND	MND	MNR	2,08E-05	2,54E-04	0,00E+00	-6,30E-04
ADP-minerals & metals ⁴⁾	kg Sbe	8,61E-05	1,96E-06	2,24E-06	9,03E-05	2,42E-07	1,50E-07	MND	MND	MND	MND	MND	MND	MND	MNR	1,10E-08	9,78E-07	0,00E+00	-1,69E-07
ADP-fossil resources	MJ	1,78E+02	1,26E+01	5,97E+00	1,97E+02	1,55E+00	1,60E-01	MND	MND	MND	MND	MND	MND	MND	MNR	7,05E-02	4,97E-01	0,00E+00	-3,03E+00
Water use ⁵⁾	m ³ e depr.	5,97E+00	5,63E-02	1,61E-01	6,18E+00	6,95E-03	5,11E-03	MND	MND	MND	MND	MND	MND	MND	MNR	3,15E-04	2,16E-02	0,00E+00	-2,14E-02

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	3,70E-07	9,65E-08	1,00E-08	4,76E-07	1,19E-08	9,87E-10	MND	MND	MND	MND	MND	MND	MND	MNR	5,41E-10	7,46E-09	0,00E+00	-1,70E-08
Ionizing radiation ⁶⁾	kBq U235e	4,95E-01	5,99E-02	2,02E-02	5,75E-01	7,40E-03	2,17E-03	MND	MND	MND	MND	MND	MND	MND	MNR	3,36E-04	5,34E-03	0,00E+00	-3,76E-02
Ecotoxicity (freshwater)	CTUe	3,94E+02	1,13E+01	3,37E+00	4,09E+02	1,40E+00	3,61E-01	MND	MND	MND	MND	MND	MND	MND	MNR	6,34E-02	1,48E+00	0,00E+00	-5,48E+00
Human toxicity, cancer	CTUh	1,64E-08	2,78E-10	2,05E-10	1,69E-08	3,43E-11	3,74E-11	MND	MND	MND	MND	MND	MND	MND	MNR	1,56E-12	2,26E-10	0,00E+00	-5,17E-11
Human tox. non-cancer	CTUh	3,80E-07	1,12E-08	2,79E-09	3,94E-07	1,38E-09	3,02E-10	MND	MND	MND	MND	MND	MND	MND	MNR	6,27E-11	1,82E-09	0,00E+00	-1,57E-09
SQP ⁷⁾	-	1,62E+01	1,45E+01	1,34E+00	3,21E+01	1,79E+00	1,29E-01	MND	MND	MND	MND	MND	MND	MND	MNR	8,12E-02	9,57E-01	0,00E+00	-1,87E+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	5,58E+00	1,42E-01	5,34E+00	1,11E+01	1,75E-02	1,88E-02	MND	MND	MND	MND	MND	MND	MND	MNR	7,94E-04	5,93E-02	0,00E+00	-5,72E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	1,38E+00	1,38E+00	0,00E+00	-1,38E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	5,58E+00	1,42E-01	6,72E+00	1,24E+01	1,75E-02	-1,36E+00	MND	MND	MND	MND	MND	MND	MND	MNR	7,94E-04	5,93E-02	0,00E+00	-5,72E-01
Non-re. PER as energy	MJ	1,59E+02	1,26E+01	3,16E+00	1,75E+02	1,55E+00	1,60E-01	MND	MND	MND	MND	MND	MND	MND	MNR	7,05E-02	4,97E-01	0,00E+00	-3,03E+00
Non-re. PER as material	MJ	1,93E+01	0,00E+00	2,81E+00	2,21E+01	0,00E+00	-2,81E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	-1,93E+01	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	1,78E+02	1,26E+01	5,97E+00	1,97E+02	1,55E+00	-2,65E+00	MND	MND	MND	MND	MND	MND	MND	MNR	7,05E-02	-1,88E+01	0,00E+00	-3,03E+00
Secondary materials	kg	1,80E-02	3,49E-03	9,97E-02	1,21E-01	4,31E-04	6,04E-04	MND	MND	MND	MND	MND	MND	MND	MNR	1,96E-05	3,31E-03	0,00E+00	-1,45E-04
Renew. secondary fuels	MJ	1,92E-04	3,52E-05	2,88E-03	3,11E-03	4,35E-06	5,47E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,97E-07	2,70E-05	0,00E+00	-1,10E-06
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	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m ³	1,43E-01	1,63E-03	3,95E-03	1,49E-01	2,01E-04	1,18E-04	MND	MND	MND	MND	MND	MND	MND	MNR	9,13E-06	5,36E-04	0,00E+00	-2,32E-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	5,08E-01	1,67E-02	1,63E-02	5,41E-01	2,06E-03	2,06E-03	MND	MND	MND	MND	MND	MND	MND	MNR	9,34E-05	1,08E-02	0,00E+00	-2,04E-02
Non-hazardous waste	kg	1,04E+01	2,74E-01	3,17E-01	1,10E+01	3,38E-02	3,16E-02	MND	MND	MND	MND	MND	MND	MND	MNR	1,54E-03	1,56E-01	0,00E+00	-7,26E-01
Radioactive waste	kg	1,81E-04	8,42E-05	6,68E-06	2,72E-04	1,04E-05	8,29E-07	MND	MND	MND	MND	MND	MND	MND	MNR	4,71E-07	2,27E-06	0,00E+00	-1,39E-05

END OF LIFE – OUTPUT FLOWS

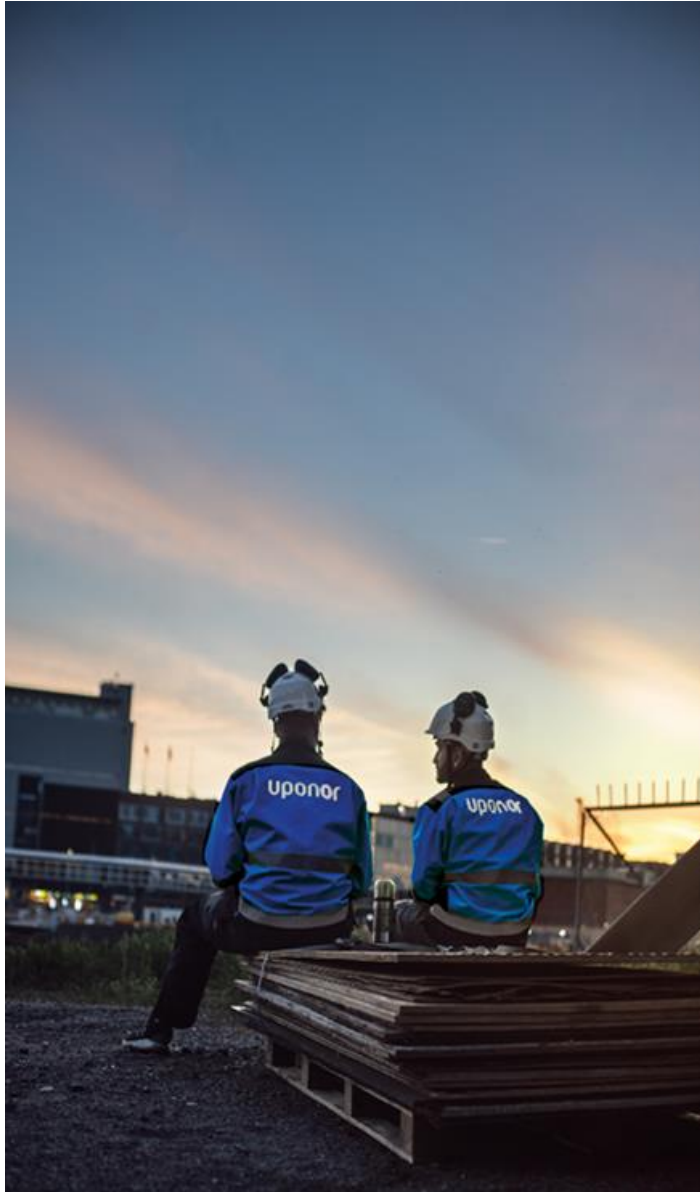
Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	6,46E-03	6,46E-03	0,00E+00	1,63E-01	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	7,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	8,59E-03	8,59E-03	0,00E+00	9,10E-04	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	1,82E-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	1,14E-02	MND	MND	MND	MND	MND	MND	MND	MNR	0,00E+00	3,47E+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	7,63E+00	8,29E-01	2,61E-01	8,72E+00	1,02E-01	2,16E-02	MND	MND	MND	MND	MND	MND	MND	MNR	4,64E-03	1,65E-01	0,00E+00	5,03E-01
Ozone depletion Pot.	kg CFC ₁₁ e	1,07E-06	1,53E-07	7,30E-09	1,23E-06	1,88E-08	9,04E-10	MND	MND	MND	MND	MND	MND	MND	MNR	8,55E-10	2,95E-09	0,00E+00	-1,07E-08
Acidification	kg SO ₂ e	3,10E-02	2,75E-03	8,45E-04	3,46E-02	3,40E-04	4,72E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,54E-05	2,13E-04	0,00E+00	-1,64E-03
Eutrophication	kg PO ₄ ³ e	2,09E-02	6,27E-04	3,20E-04	2,18E-02	7,75E-05	6,36E-05	MND	MND	MND	MND	MND	MND	MND	MNR	3,52E-06	5,61E-04	0,00E+00	-4,36E-04
POCP ("smog")	kg C ₂ H ₄ e	3,45E-03	1,08E-04	1,09E-04	3,66E-03	1,33E-05	3,77E-06	MND	MND	MND	MND	MND	MND	MND	MNR	6,03E-07	1,71E-05	0,00E+00	-7,21E-05
ADP-elements	kg Sbe	7,14E-05	1,90E-06	2,22E-06	7,55E-05	2,35E-07	1,48E-07	MND	MND	MND	MND	MND	MND	MND	MNR	1,07E-08	9,71E-07	0,00E+00	-1,72E-07
ADP-fossil	MJ	1,78E+02	1,26E+01	5,97E+00	1,97E+02	1,55E+00	1,60E-01	MND	MND	MND	MND	MND	MND	MND	MNR	7,05E-02	4,96E-01	0,00E+00	-3,03E+00

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	7,46E+00	8,29E-01	2,56E-01	8,54E+00	1,02E-01	2,13E-02	MND	MND	MND	MND	MND	MND	MND	MNR	4,65E-03	1,64E-01	0,00E+00	5,05E-01
Ozone Depletion	kg CFC ₁₁ e	1,06E-06	1,53E-07	7,23E-09	1,22E-06	1,88E-08	9,02E-10	MND	MND	MND	MND	MND	MND	MND	MNR	8,55E-10	2,94E-09	0,00E+00	-1,04E-08
Acidification	kg SO ₂ e	1,64E+00	1,69E-01	4,56E-02	1,85E+00	2,08E-02	2,71E-03	MND	MND	MND	MND	MND	MND	MND	MNR	9,45E-04	1,36E-02	0,00E+00	-8,15E-02
Eutrophication	kg Ne	5,76E-03	3,53E-04	4,21E-05	6,16E-03	4,35E-05	6,22E-06	MND	MND	MND	MND	MND	MND	MND	MNR	1,98E-06	2,67E-05	0,00E+00	-1,42E-05
POCP ("smog")	kg O ₃ e	2,03E-02	2,73E-03	6,10E-04	2,36E-02	3,36E-04	3,15E-05	MND	MND	MND	MND	MND	MND	MND	MNR	1,53E-05	1,92E-04	0,00E+00	-4,90E-04
ADP-fossil	MJ	2,06E+01	1,72E+00	7,31E-01	2,31E+01	2,12E-01	1,23E-02	MND	MND	MND	MND	MND	MND	MND	MNR	9,64E-03	3,81E-02	0,00E+00	-1,56E-01



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 compliance 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

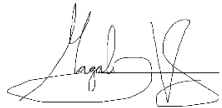
I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried 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.

Magaly González Vázquez, as an authorized verifier acting for EPD Hub Limited
21.02.2024



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

Product Number	Product Description	Unit Product Weight (kg/pce)	GWP – total, Stages A1-A3 (kg CO2e/pce)
1001235	Uponor Q&E coupling PPSU 32-32	0,030	2,72E-01
1001240	Uponor Q&E reducer PPSU 32-25	0,023	2,09E-01
1001245	Uponor Q&E elbow PPSU 32-32	0,047	4,22E-01
1001250	Uponor Q&E tee PPSU 32-32-32	0,064	5,70E-01
1001420	Uponor Q&E tee reducer PPSU 25-25-20	0,027	2,42E-01
1001422	Uponor Q&E tee reducer PPSU 32-20-25	0,038	3,44E-01
1001424	Uponor Q&E tee reducer PPSU 32-20-32	0,046	4,09E-01
1001426	Uponor Q&E tee reducer PPSU 32-25-25	0,044	3,96E-01
1001428	Uponor Q&E tee reducer PPSU 32-25-32	0,052	4,62E-01
1008661	Uponor Q&E adapter male thread PPSU 16-G1/2"MT	0,009	7,62E-02
1008662	Uponor Q&E adapter male thread PPSU 20-G1/2"MT	0,010	8,79E-02
1008663	Uponor Q&E adapter male thread PPSU 20-G3/4"MT	0,013	1,19E-01
1008664	Uponor Q&E adapter male thread PPSU 25-G3/4"MT	0,016	1,42E-01
1008665	Uponor Q&E adapter male thread PPSU 25-G1"MT	0,023	2,05E-01
1008666	Uponor Q&E elbow adapter male thread PPSU 16-G1/2"MT	0,010	8,79E-02
1008667	Uponor Q&E elbow adapter male thread PPSU 20-G1/2"MT	0,013	1,16E-01
1008668	Uponor Q&E elbow adapter male thread PPSU 25-G3/4"MT	0,021	1,87E-01
1008669	Uponor Q&E coupling PPSU 16-16	0,005	4,04E-02
1008671	Uponor Q&E coupling PPSU 25-25	0,014	1,29E-01
1008673	Uponor Q&E coupling PPSU 40-40	0,055	4,95E-01
1008674	Uponor Q&E reducer PPSU 20-16	0,007	5,92E-02
1008675	Uponor Q&E reducer PPSU 25-16	0,011	9,51E-02
1008676	Uponor Q&E reducer PPSU 25-20	0,012	1,07E-01
1008678	Uponor Q&E reducer PPSU 40-32	0,044	3,94E-01
1008679	Uponor Q&E elbow PPSU 16-16	0,006	5,74E-02
1008680	Uponor Q&E elbow PPSU 20-20	0,012	1,08E-01
1008681	Uponor Q&E elbow PPSU 25-25	0,022	1,95E-01
1008683	Uponor Q&E elbow PPSU 40-40	0,088	7,88E-01
1008684	Uponor Q&E tee PPSU 16-16-16	0,009	8,25E-02
1008685	Uponor Q&E tee PPSU 20-20-20	0,017	1,52E-01
1008686	Uponor Q&E tee PPSU 25-25-25	0,030	2,67E-01
1008688	Uponor Q&E tee PPSU 40-40-40	0,120	1,08E+00

1008689	Uponor Q&E tee reducer PPSU 20-16-20	0,014	1,24E-01
1008690	Uponor Q&E tee reducer PPSU 25-16-25	0,022	1,94E-01
1008691	Uponor Q&E tee reducer PPSU 25-20-25	0,025	2,28E-01
1008694	Uponor Q&E tee reducer PPSU 40-20-40	0,078	6,98E-01
1008695	Uponor Q&E tee reducer PPSU 40-25-40	0,085	7,64E-01
1008696	Uponor Q&E tee reducer PPSU 40-32-40	0,099	8,86E-01
1008697	Uponor Q&E tee reducer PPSU 20-20-16	0,014	1,28E-01
1008699	Uponor Q&E tee reducer PPSU 25-16-20	0,019	1,67E-01
1008700	Uponor Q&E tee reducer PPSU 20-16-16	0,013	1,12E-01
1008701	Uponor Q&E tee reducer PPSU 25-20-16	0,021	1,86E-01
1008702	Uponor Q&E tee reducer PPSU 25-16-16	0,017	1,55E-01
1008703	Uponor Q&E tee reducer PPSU 25-20-20	0,023	2,03E-01
1008704	Uponor Q&E tee reducer PPSU 32-25-20	0,041	3,64E-01
1008707	Uponor Q&E tee reducer PPSU 40-20-32	0,065	5,87E-01
1008708	Uponor Q&E tee reducer PPSU 40-25-32	0,073	6,55E-01
1008709	Uponor Q&E tee reducer PPSU 40-32-32	0,086	7,75E-01
1008710	Uponor Q&E tee reducer PPSU 16-20-16	0,012	1,11E-01
1008711	Uponor Q&E tee reducer PPSU 20-25-20	0,022	1,95E-01
1008712	Uponor Q&E tee reducer PPSU 25-32-25	0,042	3,72E-01
1008713	Uponor Q&E tee reducer PPSU 32-40-32	0,083	7,45E-01
1008714	Uponor Q&E manifold male thread PPSU G3/4"MT 3x16 c/c45+35mm	0,042	3,74E-01
1008715	Uponor Q&E manifold male thread PPSU G3/4"MT 4x16 c/c45+2x35mm	0,050	4,47E-01
1008722	Uponor Q&E manifold double PPSU 20 1x20+2x16 c/c45mm	0,026	2,31E-01
1008723	Uponor Q&E manifold double PPSU 20 1x20+3x16 c/c45mm	0,029	2,58E-01
1008724	Uponor Q&E manifold double PPSU 25 1x20+2x16 c/c45	0,031	2,75E-01
1008725	Uponor Q&E manifold double PPSU 25 1x20+3x16 c/c45	0,034	3,01E-01
1008932	Uponor Q&E coupling PPSU 20-20	0,008	7,09E-02
1042858	Uponor Q&E elbow PPSU 63-63	0,333	2,99E+00
1042859	Uponor Q&E elbow PPSU 50-50	0,179	1,60E+00
1042860	Uponor Q&E tee PPSU 63-63-63	0,439	3,93E+00
1042861	Uponor Q&E tee PPSU 50-50-50	0,242	2,17E+00
1042863	Uponor Q&E tee reducer PPSU 50-32-50	0,199	1,79E+00
1042864	Uponor Q&E tee reducer PPSU 50-25-50	0,192	1,72E+00
1042865	Uponor Q&E coupling PPSU 63-63	0,207	1,85E+00
1042866	Uponor Q&E coupling PPSU 50-50	0,112	1,00E+00
1042867	Uponor Q&E reducer PPSU 50-40	0,087	7,84E-01
1042870	Uponor Q&E tee reducer PPSU 63-32-63	0,343	3,08E+00
1042871	Uponor Q&E tee reducer PPSU 63-25-50	0,302	2,71E+00
1042873	Uponor Q&E tee reducer PPSU 63-25-63	0,335	3,00E+00

1042876	Uponor Q&E tee reducer PPSU 50-25-40	0,166	1,48E+00
1042877	Uponor Q&E reducer PPSU 63-50	0,170	1,52E+00
1042879	Uponor Q&E reducer PPSU 50-32	0,077	6,91E-01
1085080	Uponor Q&E elbow PPSU 75-75	0,680	6,10E+00
1085081	Uponor Q&E tee PPSU 75-75-75	0,850	7,62E+00
1085083	Uponor Q&E tee reducer PPSU 75-25-75	0,510	4,57E+00
1085084	Uponor Q&E coupling PPSU 75-75	0,388	3,48E+00
1085085	Uponor Q&E reducer PPSU 75-63	0,322	2,89E+00
1120979	Uponor Q&E manifold male thread PPSU G3/4" MT 2x16 c/c 35mm	0,028	2,51E-01
1120980	Uponor Q&E manifold male thread PPSU G3/4" MT 5x16 c/c 35mm	0,058	5,20E-01

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

Product Number	Product Description	Unit Product Weight (kg/pce)	GWP – total, Stages A1-A3 (kg CO2e/pce)
1001235	Uponor Q&E coupling PPSU 32-32	0,030	2,64E-01
1001240	Uponor Q&E reducer PPSU 32-25	0,023	2,03E-01
1001245	Uponor Q&E elbow PPSU 32-32	0,047	4,10E-01
1001250	Uponor Q&E tee PPSU 32-32-32	0,064	5,55E-01
1001420	Uponor Q&E tee reducer PPSU 25-25-20	0,027	2,35E-01
1001422	Uponor Q&E tee reducer PPSU 32-20-25	0,038	3,34E-01
1001424	Uponor Q&E tee reducer PPSU 32-20-32	0,046	3,98E-01
1001426	Uponor Q&E tee reducer PPSU 32-25-25	0,044	3,85E-01
1001428	Uponor Q&E tee reducer PPSU 32-25-32	0,052	4,49E-01
1008661	Uponor Q&E adapter male thread PPSU 16-G1/2"MT	0,009	7,41E-02
1008662	Uponor Q&E adapter male thread PPSU 20-G1/2"MT	0,010	8,55E-02
1008663	Uponor Q&E adapter male thread PPSU 20-G3/4"MT	0,013	1,16E-01
1008664	Uponor Q&E adapter male thread PPSU 25-G3/4"MT	0,016	1,38E-01
1008665	Uponor Q&E adapter male thread PPSU 25-G1"MT	0,023	1,99E-01
1008666	Uponor Q&E elbow adapter male thread PPSU 16-G1/2"MT	0,010	8,55E-02
1008667	Uponor Q&E elbow adapter male thread PPSU 20-G1/2"MT	0,013	1,12E-01
1008668	Uponor Q&E elbow adapter male thread PPSU 25-G3/4"MT	0,021	1,82E-01
1008669	Uponor Q&E coupling PPSU 16-16	0,005	3,92E-02
1008671	Uponor Q&E coupling PPSU 25-25	0,014	1,26E-01
1008673	Uponor Q&E coupling PPSU 40-40	0,055	4,81E-01
1008674	Uponor Q&E reducer PPSU 20-16	0,007	5,76E-02
1008675	Uponor Q&E reducer PPSU 25-16	0,011	9,24E-02
1008676	Uponor Q&E reducer PPSU 25-20	0,012	1,04E-01
1008678	Uponor Q&E reducer PPSU 40-32	0,044	3,83E-01
1008679	Uponor Q&E elbow PPSU 16-16	0,006	5,58E-02
1008680	Uponor Q&E elbow PPSU 20-20	0,012	1,05E-01
1008681	Uponor Q&E elbow PPSU 25-25	0,022	1,89E-01
1008683	Uponor Q&E elbow PPSU 40-40	0,088	7,66E-01
1008684	Uponor Q&E tee PPSU 16-16-16	0,009	8,02E-02
1008685	Uponor Q&E tee PPSU 20-20-20	0,017	1,48E-01
1008686	Uponor Q&E tee PPSU 25-25-25	0,030	2,60E-01
1008688	Uponor Q&E tee PPSU 40-40-40	0,120	1,05E+00

1008689	Uponor Q&E tee reducer PPSU 20-16-20	0,014	1,20E-01
1008690	Uponor Q&E tee reducer PPSU 25-16-25	0,022	1,88E-01
1008691	Uponor Q&E tee reducer PPSU 25-20-25	0,025	2,21E-01
1008694	Uponor Q&E tee reducer PPSU 40-20-40	0,078	6,78E-01
1008695	Uponor Q&E tee reducer PPSU 40-25-40	0,085	7,43E-01
1008696	Uponor Q&E tee reducer PPSU 40-32-40	0,099	8,62E-01
1008697	Uponor Q&E tee reducer PPSU 20-20-16	0,014	1,25E-01
1008699	Uponor Q&E tee reducer PPSU 25-16-20	0,019	1,62E-01
1008700	Uponor Q&E tee reducer PPSU 20-16-16	0,013	1,09E-01
1008701	Uponor Q&E tee reducer PPSU 25-20-16	0,021	1,81E-01
1008702	Uponor Q&E tee reducer PPSU 25-16-16	0,017	1,51E-01
1008703	Uponor Q&E tee reducer PPSU 25-20-20	0,023	1,97E-01
1008704	Uponor Q&E tee reducer PPSU 32-25-20	0,041	3,54E-01
1008707	Uponor Q&E tee reducer PPSU 40-20-32	0,065	5,70E-01
1008708	Uponor Q&E tee reducer PPSU 40-25-32	0,073	6,37E-01
1008709	Uponor Q&E tee reducer PPSU 40-32-32	0,086	7,53E-01
1008710	Uponor Q&E tee reducer PPSU 16-20-16	0,012	1,08E-01
1008711	Uponor Q&E tee reducer PPSU 20-25-20	0,022	1,89E-01
1008712	Uponor Q&E tee reducer PPSU 25-32-25	0,042	3,62E-01
1008713	Uponor Q&E tee reducer PPSU 32-40-32	0,083	7,24E-01
1008714	Uponor Q&E manifold male thread PPSU G3/4"MT 3x16 c/c45+35mm	0,042	3,64E-01
1008715	Uponor Q&E manifold male thread PPSU G3/4"MT 4x16 c/c45+2x35mm	0,050	4,35E-01
1008722	Uponor Q&E manifold double PPSU 20 1x20+2x16 c/c45mm	0,026	2,25E-01
1008723	Uponor Q&E manifold double PPSU 20 1x20+3x16 c/c45mm	0,029	2,51E-01
1008724	Uponor Q&E manifold double PPSU 25 1x20+2x16 c/c45	0,031	2,67E-01
1008725	Uponor Q&E manifold double PPSU 25 1x20+3x16 c/c45	0,034	2,92E-01
1008932	Uponor Q&E coupling PPSU 20-20	0,008	6,89E-02
1042858	Uponor Q&E elbow PPSU 63-63	0,333	2,91E+00
1042859	Uponor Q&E elbow PPSU 50-50	0,179	1,56E+00
1042860	Uponor Q&E tee PPSU 63-63-63	0,439	3,82E+00
1042861	Uponor Q&E tee PPSU 50-50-50	0,242	2,11E+00
1042863	Uponor Q&E tee reducer PPSU 50-32-50	0,199	1,74E+00
1042864	Uponor Q&E tee reducer PPSU 50-25-50	0,192	1,67E+00
1042865	Uponor Q&E coupling PPSU 63-63	0,207	1,80E+00
1042866	Uponor Q&E coupling PPSU 50-50	0,112	9,73E-01
1042867	Uponor Q&E reducer PPSU 50-40	0,087	7,62E-01
1042870	Uponor Q&E tee reducer PPSU 63-32-63	0,343	2,99E+00
1042871	Uponor Q&E tee reducer PPSU 63-25-50	0,302	2,63E+00
1042873	Uponor Q&E tee reducer PPSU 63-25-63	0,335	2,92E+00

1042876	Uponor Q&E tee reducer PPSU 50-25-40	0,166	1,44E+00
1042877	Uponor Q&E reducer PPSU 63-50	0,170	1,48E+00
1042879	Uponor Q&E reducer PPSU 50-32	0,077	6,71E-01
1085080	Uponor Q&E elbow PPSU 75-75	0,680	5,93E+00
1085081	Uponor Q&E tee PPSU 75-75-75	0,850	7,41E+00
1085083	Uponor Q&E tee reducer PPSU 75-25-75	0,510	4,45E+00
1085084	Uponor Q&E coupling PPSU 75-75	0,388	3,38E+00
1085085	Uponor Q&E reducer PPSU 75-63	0,322	2,81E+00
1120979	Uponor Q&E manifold male thread PPSU G3/4" MT 2x16 c/c 35mm	0,028	2,44E-01
1120980	Uponor Q&E manifold male thread PPSU G3/4" MT 5x16 c/c 35mm	0,058	5,06E-01