Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v4.3.1

Product:	3050936 - PPr Elbow 90°WT 25
Unit:	1 piece
Manufacturer:	Wavin - TR - Adana
Location:	Güzelevler Mahallesi
Address:	Girne Bulvarı 294 01321 Adana Turkey

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	04-10-2022
End of validity:	04-10-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - TR - Adana (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-f** = EF Resource use, fossils [MJ]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	6.31E-2	4.06E-3	1.33E-3	6.85E-2	1.26E-3	5.64E-2	5.94E-4	-3.36E-2	9.31E-2
GWP-f	kg CO2 eq	6.32E-2	4.06E-3	1.28E-3	6.85E-2	1.26E-3	5.43E-2	5.94E-4	-3.60E-2	8.86E-2
GWP-b	kg CO2 eq	-2.71E-4	-4.50E-7	4.48E-5	-2.26E-4	7.67E-7	2.15E-3	5.11E-7	2.41E-3	4.34E-3
GWP-luluc	kg CO2 eq	1.83E-4	2.47E-6	7.81E-7	1.87E-4	4.47E-7	7.36E-6	1.11E-8	-2.35E-5	1.71E-4
ODP	kg CFC11 eq	2.36E-9	8.35E-10	1.03E-10	3.30E-9	2.91E-10	1.04E-9	1.50E-11	-1.81E-9	2.83E-9
AP	mol H+ eq	3.32E-4	1.04E-4	8.15E-6	4.44E-4	7.20E-6	4.39E-5	3.62E-7	-9.87E-5	3.97E-4
EP-fw	kg P eq	1.44E-6	2.23E-8	1.02E-7	1.57E-6	1.04E-8	2.14E-7	4.95E-10	-5.52E-7	1.24E-6
EP-m	kg N eq	4.78E-5	2.62E-5	2.84E-6	7.68E-5	2.58E-6	1.33E-5	2.26E-7	-1.86E-5	7.43E-5
EP-T	mol N eq	5.04E-4	2.91E-4	1.92E-5	8.15E-4	2.84E-5	1.46E-4	1.46E-6	-2.07E-4	7.84E-4
POCP	kg NMVOC eq	2.14E-4	7.61E-5	6.28E-6	2.96E-4	8.11E-6	4.57E-5	5.46E-7	-8.74E-5	2.63E-4
ADP-f	MJ	2.00E+0	5.42E-2	1.27E-2	2.07E+0	1.94E-2	1.31E-1	1.10E-3	-1.04E+0	1.18E+0
ADP-mm	kg Sb eq	7.83E-7	4.86E-8	1.02E-7	9.33E-7	3.27E-8	1.68E-7	3.73E-10	-2.14E-7	9.21E-7
WDP	m3 depriv.	4.64E-2	1.11E-4	2.64E-3	4.92E-2	5.95E-5	2.50E-3	8.86E-6	-2.00E-2	3.17E-2
PM	disease inc.	2.39E-9	1.85E-10	1.12E-10	2.69E-9	1.14E-10	7.05E-10	7.55E-12	-9.44E-10	2.57E-9
IR	kBq U-235 eq	1.56E-3	2.31E-4	3.82E-5	1.83E-3	8.48E-5	4.03E-4	5.03E-6	-6.15E-4	1.71E-3
ETP-fw	CTUe	8.58E-1	3.87E-2	6.88E-2	9.66E-1	1.57E-2	1.54E-1	9.18E-4	-3.13E-1	8.24E-1
HTP-c	CTUh	3.15E-11	2.16E-12	4.19E-12	3.78E-11	5.60E-13	2.15E-11	2.93E-14	-6.74E-12	5.32E-11
HTP-nc	CTUh	5.82E-10	3.51E-11	7.39E-11	6.91E-10	1.88E-11	2.39E-10	6.06E-13	-1.94E-10	7.55E-10
SQP	Pt	2.61E-1	1.83E-2	1.70E-2	2.97E-1	1.66E-2	1.04E-1	2.80E-3	-4.79E-1	-5.93E-2
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.69E-2	4.40E-4	2.31E-1	2.99E-1	2.78E-4	6.33E-3	4.07E-5	-9.38E-2	2.11E-1
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.69E-2	4.40E-4	2.31E-1	2.99E-1	2.78E-4	6.33E-3	4.07E-5	-9.38E-2	2.11E-1
PENRE	MJ	2.15E+0	5.76E-2	1.35E-2	2.22E+0	2.06E-2	1.40E-1	1.17E-3	-1.12E+0	1.25E+0
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.15E+0	5.76E-2	1.35E-2	2.22E+0	2.06E-2	1.40E-1	1.17E-3	-1.12E+0	1.25E+0
PET	MJ	2.21E+0	5.80E-2	2.45E-1	2.52E+0	2.09E-2	1.46E-1	1.21E-3	-1.22E+0	1.47E+0
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	8.45E-4	3.85E-6	6.34E-5	9.12E-4	2.19E-6	7.66E-5	1.34E-6	-3.42E-4	6.50E-4

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	1.19E-6	7.54E-8	8.19E-8	1.35E-6	4.96E-8	2.24E-7	1.35E-9	-3.49E-7	1.27E-6
NHWD	kg	7.16E-3	1.04E-3	1.52E-3	9.73E-3	1.20E-3	7.14E-3	4.81E-3	-9.50E-4	2.19E-2
RWD	kg	1.49E-6	3.71E-7	4.67E-8	1.91E-6	1.32E-7	5.16E-7	7.12E-9	-5.73E-7	1.99E-6
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	5.53E-2	5.53E-2	0	0	0	0	5.53E-2
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

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