Environmental Profile

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

Ecochain v4.3.1

Product:	3040125 - PPr Elbow 45°GY 75
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	7.47E-1	5.40E-2	2.12E-2	8.22E-1	1.77E-2	6.15E-1	8.34E-3	-4.15E-1	1.05E+0
GWP-f	kg CO2 eq	7.44E-1	5.40E-2	2.04E-2	8.19E-1	1.77E-2	5.85E-1	8.34E-3	-4.49E-1	9.81E-1
GWP-b	kg CO2 eq	2.60E-3	-9.72E-6	7.14E-4	3.31E-3	1.07E-5	3.01E-2	7.25E-6	3.38E-2	6.73E-2
GWP-luluc	kg CO2 eq	4.05E-4	3.44E-5	1.25E-5	4.52E-4	6.26E-6	1.02E-4	1.44E-7	-3.26E-4	2.34E-4
ODP	kg CFC11 eq	1.79E-8	1.10E-8	1.64E-9	3.05E-8	4.08E-9	1.40E-8	2.09E-10	-1.97E-8	2.91E-8
AP	mol H+ eq	2.77E-3	1.52E-3	1.30E-4	4.42E-3	1.01E-4	5.87E-4	5.00E-6	-1.33E-3	3.78E-3
EP-fw	kg P eq	1.34E-5	2.70E-7	1.63E-6	1.53E-5	1.46E-7	2.95E-6	6.56E-9	-7.61E-6	1.08E-5
EP-m	kg N eq	4.90E-4	3.79E-4	4.53E-5	9.14E-4	3.61E-5	1.75E-4	3.24E-6	-2.47E-4	8.81E-4
EP-T	mol N eq	5.45E-3	4.21E-3	3.07E-4	9.97E-3	3.97E-4	1.92E-3	2.03E-5	-2.75E-3	9.56E-3
POCP	kg NMVOC eq	2.35E-3	1.10E-3	1.00E-4	3.54E-3	1.14E-4	6.04E-4	7.61E-6	-1.17E-3	3.10E-3
ADP-f	MJ	2.54E+1	7.10E-1	2.03E-1	2.63E+1	2.72E-1	1.80E+0	1.53E-2	-1.36E+1	1.48E+1
ADP-mm	kg Sb eq	1.14E-5	5.59E-7	1.62E-6	1.36E-5	4.58E-7	2.31E-6	5.05E-9	-2.96E-6	1.34E-5
WDP	m3 depriv.	5.15E-1	1.31E-3	4.22E-2	5.59E-1	8.33E-4	3.45E-2	8.34E-5	-2.76E-1	3.18E-1
PM	disease inc.	2.52E-8	2.17E-9	1.79E-9	2.92E-8	1.60E-9	9.56E-9	1.05E-10	-1.30E-8	2.74E-8
IR	kBq U-235 eq	1.48E-2	3.03E-3	6.09E-4	1.85E-2	1.19E-3	5.52E-3	7.07E-5	-8.29E-3	1.69E-2
ETP-fw	CTUe	8.57E+0	4.90E-1	1.10E+0	1.02E+1	2.20E-1	2.09E+0	1.28E-2	-4.29E+0	8.19E+0
HTP-c	CTUh	1.89E-10	2.94E-11	6.68E-11	2.85E-10	7.85E-12	2.56E-10	3.78E-13	-9.02E-11	4.59E-10
HTP-nc	CTUh	5.22E-9	4.27E-10	1.18E-9	6.83E-9	2.63E-10	3.09E-9	8.26E-12	-2.65E-9	7.53E-9
SQP	Pt	2.45E+0	1.90E-1	2.71E-1	2.91E+0	2.32E-1	1.42E+0	3.92E-2	-6.68E+0	-2.08E+0
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	6.81E-1	5.42E-3	3.69E+0	4.37E+0	3.90E-3	8.74E-2	5.88E-4	-1.31E+0	3.16E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	6.81E-1	5.42E-3	3.69E+0	4.37E+0	3.90E-3	8.74E-2	5.88E-4	-1.31E+0	3.16E+0
PENRE	MJ	2.72E+1	7.54E-1	2.16E-1	2.82E+1	2.88E-1	1.92E+0	1.62E-2	-1.47E+1	1.57E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	2.72E+1	7.54E-1	2.16E-1	2.82E+1	2.88E-1	1.92E+0	1.62E-2	-1.47E+1	1.57E+1
PET	MJ	2.79E+1	7.60E-1	3.90E+0	3.26E+1	2.92E-1	2.00E+0	1.68E-2	-1.60E+1	1.89E+1
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	8.27E-3	4.58E-5	1.01E-3	9.32E-3	3.07E-5	1.03E-3	1.88E-5	-4.70E-3	5.70E-3

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	3.89E-6	8.69E-7	1.31E-6	6.07E-6	6.94E-7	3.01E-6	1.85E-8	-3.81E-6	5.99E-6
NHWD	kg	3.64E-2	9.47E-3	2.42E-2	7.01E-2	1.68E-2	9.06E-2	6.73E-2	-1.29E-2	2.32E-1
RWD	kg	1.31E-5	4.89E-6	7.46E-7	1.87E-5	1.85E-6	7.05E-6	9.97E-8	-7.61E-6	2.01E-5
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	8.83E-1	8.83E-1	0	0	0	0	8.83E-1
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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