

This appendix refers to the EPD MD-23222-EN, developed according to EN15804+A2:2019. Results in the appendix communicates LCA results in the format described in EN15804+A1:2013, in order to accommodate a need in the transition period between the two standard revisions. The appendix cannot stand alone, as the reference EPD describes the basis of the assessment.

ENVIRONMENTAL IMPACTS PER m <sup>2</sup> ROOF ELEMENT									
Parameter	Unit	A1	A2	A3	C1	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	-2,05E+01	4,07E+00	3,73E+00	2,22E-02	5,89E-01	3,81E+01	1,53E-01	-4,88E+00
ODP	[kg CFC11-eq.]	1,01E-11	6,03E-16	4,79E-14	2,32E-17	8,74E-17	8,59E-15	4,84E-16	-1,25E-13
AP	[kg SO <sub>2</sub> -eq.]	7,38E-02	4,19E-03	5,98E-03	8,14E-05	1,47E-03	7,03E-03	9,09E-04	-1,63E-02
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	1,32E-02	8,91E-04	1,19E-03	8,90E-06	3,56E-04	1,75E-03	1,02E-04	-3,31E-03
POCP	[kg ethene-eq.]	5,54E-03	-4,32E-04	6,36E-04	1,19E-05	-5,14E-04	4,09E-04	5,72E-05	-1,44E-03
ADPE	[kg Sb-eq.]	4,65E-04	3,16E-07	5,94E-07	2,21E-09	4,58E-08	2,41E-07	4,89E-08	-2,03E-06
ADPF	[MJ]	3,46E+02	5,56E+01	1,82E+01	2,28E+00	8,06E+00	5,51E+00	2,06E+00	-4,47E+01
Caption	GWP = Global warming potential; ODP = Ozone depletion potential; AP = Acidification potential of soil and water; EP = Eutrophication potential; POCP = Photochemical ozone creation potential; ADPE = Abiotic depletion potential for non fossil resources; ADPF = Abiotic depletion potential for fossil resources								

RESOURCE USE PER m <sup>2</sup> ROOF ELEMENT									
Parameter	Unit	A1	A2	A3	C1	C2	C3	C4	D
PERE	[MJ]	5,21E+02	4,10E+00	6,35E+01	1,49E-02	5,94E-01	4,21E+00	3,51E-01	-3,67E+02
PERM	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	[MJ]	5,21E+02	4,10E+00	6,35E+01	1,49E-02	5,94E-01	4,21E+00	3,51E-01	-3,67E+02
PENRE	[MJ]	3,89E+02	5,65E+01	2,20E+01	2,32E+00	8,19E+00	6,06E+00	2,15E+00	-5,22E+01
PENRM	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	[MJ]	3,89E+02	5,65E+01	2,20E+01	2,32E+00	8,19E+00	6,06E+00	2,15E+00	-5,22E+01
SM	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	[m <sup>3</sup> ]	1,12E-01	4,49E-03	1,52E-02	1,73E-05	6,50E-04	4,98E-02	5,41E-04	-4,44E-02
Caption	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non renewable secondary fuels; FW = Net use of fresh water								

WASTE CATEGORIES AND OUTPUT FLOWS PER m <sup>2</sup> ROOF ELEMENT									
Parameter	Unit	A1	A2	A3	C1	C2	C3	C4	D
HWD	[kg]	4,01E-09	1,75E-10	-7,95E-09	4,27E-12	2,54E-11	-9,70E-10	4,62E-11	2,07E-08
NHWD	[kg]	5,65E-01	8,62E-03	9,87E-01	0,00E+00	1,25E-03	1,43E-01	1,07E+01	-3,15E-01
RWD	[kg]	1,50E-02	1,06E-04	1,35E-03	3,87E-06	1,53E-05	1,88E-04	2,41E-05	-2,66E-03

CRU	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	[kg]	0,00E+00	0,00E+00	1,38E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	[kg]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,97E+01	0,00E+00	0,00E+00
EET	[MJ]	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,28E+02	0,00E+00	0,00E+00
Caption	HWD = Hazardous waste disposed; NHWD = Non hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy								

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