

This appendix refers to the EPD MD-22068-EN, 1<sup>st</sup> version, 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.

### Results per declared unit

Bundmembran SBS and PF 4500 SBS (svejsebundmembran) (bottom layer)

ENVIRONMENTAL IMPACTS PER [m <sup>2</sup> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	2.92E+00	6.48E-02	1.89E+00	3.49E-03	1.30E-02	1.37E+01	5.58E-03	-4.50E+00
ODP	[kg CFC11-eq.]	4.85E-08	7.72E-15	2.16E-07	4.18E-16	1.54E-15	5.81E-08	9.07E-10	-2.39E-10
AP	[kg SO <sub>2</sub> -eq.]	9.93E-03	5.44E-05	4.16E-03	1.27E-05	1.09E-05	3.86E-03	4.10E-05	-3.18E-03
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	8.58E-04	1.12E-05	8.11E-04	3.01E-06	2.23E-06	1.51E-03	9.92E-06	-6.52E-04
POCP	[kg ethene-eq.]	5.37E-03	-9.31E-07	1.16E-03	1.23E-06	-1.86E-07	2.19E-04	4.87E-06	-4.18E-04
ADPE	[kg Sb-eq.]	5.64E-07	6.74E-09	2.51E-06	3.65E-10	1.35E-09	6.69E-06	8.31E-09	-9.04E-07
ADPF	[MJ]	2.15E+02	8.66E-01	4.30E+01	4.69E-02	1.73E-01	3.10E+00	7.58E-02	-6.54E+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> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	8.78E+00	6.07E-02	1.32E+00	3.29E-03	0	0	0	-4.26E+01
PERM	[MJ]	1.95E-01	0	-1.95E-01	0	0	0	0	0
PERT	[MJ]	8.98E+00	6.07E-02	1.12E+00	3.29E-03	1.21E-02	1.36E-01	5.83E-04	-4.26E+01
PENRE	[MJ]	8.76E+01	8.80E-01	3.15E+01	4.77E-02	0	0	0	-6.97E+01
PENRM	[MJ]	1.39E+02	0	1.29E+01	0	0	0	0	0
PENRT	[MJ]	2.27E+02	8.80E-01	4.44E+01	4.77E-02	1.76E-01	3.28E+00	7.63E-02	-6.97E+01
SM	[kg]	8.87E-02	0.00E+00	1.06E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0	0	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0	0	0
FW	[m <sup>3</sup> ]	1.01E-02	7.01E-05	2.58E-03	3.80E-06	1.40E-05	7.53E-03	4.12E-06	-1.50E-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> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.30E-08	4.65E-12	1.56E-09	2.52E-13	9.30E-13	0.00E+00	0.00E+00	-8.33E-09
NHWD	[kg]	3.52E-02	1.43E-04	4.25E-03	7.77E-06	2.86E-05	0.00E+00	0.00E+00	-7.31E-02
RWD	[kg]	7.32E-04	1.63E-06	2.38E-05	8.85E-08	3.26E-07	0.00E+00	0.00E+00	-1.68E-03
CRU	[kg]	0	0	0	0	0	0	0	0
MFR	[kg]	1.43E-01	0.00E+00	6.26E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0	0	0	0	0	0	0	0
EEE	[MJ]	0.00E+00	0.00E+00	2.87E-01	0.00E+00	0.00E+00	2.25E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	5.54E-01	0.00E+00	0.00E+00	4.36E+01	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								

### Results per declared unit

Topmembran SBS and PF 4600 SBS (svejsetopmembran) (top layer)

ENVIRONMENTAL IMPACTS [m <sup>2</sup> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	3.09E+00	6.36E-02	1.70E+00	3.43E-03	1.27E-02	1.34E+01	5.48E-03	-4.42E+00
ODP	[kg CFC111-eq.]	5.25E-08	7.58E-15	1.82E-07	4.11E-16	1.51E-15	5.71E-08	8.91E-10	-2.36E-10
AP	[kg SO <sub>2</sub> -eq.]	1.01E-02	5.34E-05	3.65E-03	1.24E-05	1.07E-05	3.79E-03	4.03E-05	-3.12E-03
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	9.90E-04	1.10E-05	7.13E-04	2.95E-06	2.19E-06	1.48E-03	9.74E-06	-6.41E-04
POCP	[kg ethene-eq.]	5.33E-03	-9.14E-07	1.07E-03	1.20E-06	-1.83E-07	2.15E-04	4.78E-06	-4.11E-04
ADPE	[kg Sb-eq.]	6.68E-07	6.62E-09	2.14E-06	3.59E-10	1.32E-09	6.57E-06	8.16E-09	-8.88E-07
ADPF	[MJ]	2.15E+02	8.50E-01	4.02E+01	4.61E-02	1.70E-01	3.05E+00	7.44E-02	-6.42E+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> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	[MJ]	9.27E+00	5.96E-02	1.36E+00	3.23E-03	1.19E-02	1.33E-01	5.73E-04	-4.18E+01
PERM	[MJ]	1.95E-01	0	-1.95E-01	0	0	0	0	0
PERT	[MJ]	9.47E+00	5.96E-02	1.17E+00	3.23E-03	1.19E-02	1.33E-01	5.73E-04	-4.18E+01
PENRE	[MJ]	8.85E+01	8.64E-01	2.87E+01	4.68E-02	1.73E-01	3.07E+02	7.50E-02	-6.85E+01
PENRM	[MJ]	1.39E+02	0	1.29E+01	0	0	-1.52E+02	0	0
PENRT	[MJ]	2.28E+02	8.64E-01	4.16E+01	4.68E-02	1.73E-01	1.55E+02	7.50E-02	-6.85E+01
SM	[kg]	1.24E-01	0.00E+00	1.49E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	[MJ]	0	0	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0	0	0
FW	[m <sup>3</sup> ]	1.11E-02	6.89E-05	2.51E-03	3.73E-06	1.38E-05	7.39E-03	4.05E-06	-1.47E-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> bitumen sheet]									
Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	[kg]	1.29E-08	4.57E-12	1.55E-09	2.48E-13	9.13E-13	0.00E+00	0.00E+00	-8.18E-09
NHWD	[kg]	2.50E-02	1.41E-04	3.02E-03	7.63E-06	2.81E-05	0.00E+00	0.00E+00	-7.18E-02
RWD	[kg]	8.13E-04	1.60E-06	3.35E-05	8.69E-08	3.20E-07	0.00E+00	0.00E+00	-1.65E-03
CRU	[kg]	0	0	0	0	0	0	0	0
MFR	[kg]	1.64E-01	0.00E+00	6.46E-02	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MER	[kg]	0	0	0	0	0	0	0	0
EEE	[MJ]	0.00E+00	0.00E+00	2.81E-01	0.00E+00	0.00E+00	2.21E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	5.44E-01	0.00E+00	0.00E+00	4.28E+01	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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