

This appendix refers to the EPD MD-22069-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**

PTM AeroTæt 20 Dampspærre

ENVIRONMENTAL IMPACTS PER [m <sup>2</sup> bitumen sheet]													
Parameter	Unit	A1-A3	A4	A5	C1	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	7.28E-01	2.77E-02	3.24E-01	0	2.75E-02	0.00E+00	0.00E+00	-3.00E-01	1.21E-02	4.07E+00	1.66E-03	-1.43E+00
ODP	[kg CFC11-eq.]	2.12E-08	3.30E-15	2.25E-08	0	3.28E-15	0.00E+00	0.00E+00	-1.12E-08	1.44E-15	1.73E-08	2.70E-10	-3.46E-09
AP	[kg SO <sub>2</sub> -eq.]	3.11E-03	2.32E-05	5.41E-04	0	2.31E-05	0.00E+00	0.00E+00	-3.83E-03	1.02E-05	1.15E-03	1.22E-05	-2.10E-03
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	4.05E-04	4.77E-06	1.24E-04	0	4.75E-06	0.00E+00	0.00E+00	7.22E-05	2.09E-06	4.48E-04	2.95E-06	-1.72E-04
POCP	[kg ethene-eq.]	1.65E-03	-3.97E-07	2.44E-04	0	-3.95E-07	0.00E+00	0.00E+00	-3.08E-03	-1.74E-07	6.50E-05	1.45E-06	-1.06E-03
ADPE	[kg Sb-eq.]	3.49E-07	2.88E-09	3.28E-07	0	2.86E-09	0.00E+00	0.00E+00	1.18E-07	1.26E-09	1.99E-06	2.47E-09	-2.33E-07
ADPF	[MJ]	6.22E+01	3.70E-01	9.06E+00	0	3.68E-01	0.00E+00	0.00E+00	1.06E+02	1.62E-01	9.23E-01	2.25E-02	-5.14E+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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
PERE	[MJ]	7.15E+00	2.59E-02	1.05E+00	0	2.58E-02	0.00E+00	0.00E+00	-3.25E-01	1.13E-02	4.03E-02	1.73E-04	-1.28E+01
PERM	[MJ]	1.95E-01	0	-1.95E-01	0	0	0	0	0	0	0	0	0
PERT	[MJ]	7.35E+00	2.59E-02	8.52E-01	0	2.58E-02	0.00E+00	0.00E+00	-3.25E-01	1.13E-02	4.03E-02	1.73E-04	-1.28E+01
PENRE	[MJ]	2.14E+01	3.76E-01	5.55E+00	0	3.73E-01	0.00E+00	0.00E+00	-1.12E+02	1.64E-01	9.76E-01	2.27E-02	-5.46E+01
PENRM	[MJ]	4.49E+01	0	3.88E+00	0	0	-4.88E+01	0	4.88E+01	0	-4.88E+01	0	1.46E+01
PENRT	[MJ]	6.64E+01	3.76E-01	9.43E+00	0	3.73E-01	-4.88E+01	0.00E+00	-6.33E+01	1.64E-01	-1.37E+01	2.27E-02	-4.00E+01
SM	[kg]	6.85E-02	0.00E+00	8.21E-03	0	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	0	0	0	0	0	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0	0	0	0	0	0	0
FW	[m <sup>3</sup> ]	3.61E-03	3.00E-05	6.61E-04	0	2.98E-05	0.00E+00	0.00E+00	-8.24E-04	1.31E-05	2.24E-03	1.23E-06	-4.70E-03
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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
HWD	[kg]	9.94E-10	1.99E-12	1.20E-10	0	1.98E-12	0.00E+00	0.00E+00	-4.18E-11	8.69E-13	0.00E+00	0.00E+00	-2.49E-09
NHWD	[kg]	1.18E-02	6.12E-05	1.43E-03	0	6.08E-05	0.00E+00	0.00E+00	1.24E-01	2.68E-05	0.00E+00	0.00E+00	1.58E-02
RWD	[kg]	2.22E-04	6.97E-07	-1.29E-05	0	6.93E-07	0.00E+00	0.00E+00	-8.71E-06	3.05E-07	0.00E+00	0.00E+00	-5.02E-04

CRU	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
MFR	[kg]	0.00E+00	0.00E+00	3.22E-02	0.00E+00	0.00E+00	2.46E+00	0.00E+00	0.00E+00	0.00E+00	7.38E-01	0.00E+00	0.00E+00
MER	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
EEE	[MJ]	0.00E+00	0.00E+00	1.22E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.70E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.35E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.30E+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**

PTM AeroTæt 32 Dampspærre

**ENVIRONMENTAL IMPACTS PER [m<sup>2</sup> bitumen sheet]**

Parameter	Unit	A1-A3	A4	A5	C1	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	9.90E-01	4.18E-02	5.28E-01	0	4.17E-02	0.00E+00	0.00E+00	-4.54E-01	1.83E-02	6.17E+00	2.52E-03	-2.16E+00
ODP	[kg CFC11-eq.]	3.27E-08	4.98E-15	4.41E-08	0	4.96E-15	0.00E+00	0.00E+00	-1.70E-08	2.18E-15	2.62E-08	4.09E-10	-5.21E-09
AP	[kg SO <sub>2</sub> -eq.]	4.89E-03	3.51E-05	1.04E-03	0	3.50E-05	0.00E+00	0.00E+00	-5.79E-03	1.54E-05	1.74E-03	1.85E-05	-3.18E-03
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	4.71E-04	7.21E-06	2.03E-04	0	7.19E-06	0.00E+00	0.00E+00	1.09E-04	3.16E-06	6.79E-04	4.47E-06	-2.61E-04
POCP	[kg ethene-eq.]	2.86E-03	-6.00E-07	4.39E-04	0	-5.99E-07	0.00E+00	0.00E+00	-4.66E-03	-2.63E-07	9.85E-05	2.19E-06	-1.59E-03
ADPE	[kg Sb-eq.]	4.00E-07	4.35E-09	5.81E-07	0	4.33E-09	0.00E+00	0.00E+00	1.79E-07	1.91E-09	3.02E-06	3.75E-09	-3.54E-07
ADPF	[MJ]	1.05E+02	5.58E-01	1.59E+01	0	5.57E-01	0.00E+00	0.00E+00	-1.60E+02	2.45E-01	1.40E+00	3.42E-02	-7.75E+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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
PERE	[MJ]	7.47E+00	3.92E-02	1.09E+00	0	3.91E-02	0.00E+00	0.00E+00	-4.93E-01	1.72E-02	6.11E-02	2.63E-04	1.93E+01
PERM	[MJ]	1.95E-01	0	-1.95E-01	0	0	0	0	0	0	0	0	0
PERT	[MJ]	7.66E+00	3.92E-02	8.93E-01	0	3.91E-02	0.00E+00	0.00E+00	-4.93E-01	1.72E-02	6.11E-02	2.63E-04	1.93E+01
PENRE	[MJ]	6.70E+01	5.67E-01	1.27E+01	0	5.66E-01	0.00E+00	0.00E+00	-1.70E+02	2.49E-01	1.48E+00	3.44E-02	8.24E+01
PENRM	[MJ]	4.49E+01	0	3.88E+00	0	0	-4.88E+01	0	4.88E+01	0	-4.88E+01	0	1.46E+01
PENRT	[MJ]	1.12E+02	5.67E-01	1.65E+01	0	5.66E-01	-4.88E+01	0.00E+00	-1.21E+02	2.49E-01	1.61E+01	3.44E-02	6.78E+01
SM	[kg]	8.32E-02	0.00E+00	9.98E-03	0	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	0	0	0	0	0	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0	0	0	0	0	0	0
FW	[m <sup>3</sup> ]	4.46E-03	4.52E-05	9.11E-04	0	4.51E-05	0.00E+00	0.00E+00	-1.25E-03	1.99E-05	3.39E-03	1.86E-06	-7.12E-03
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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
HWD	[kg]	1.17E-09	3.00E-12	1.41E-10	0	2.99E-12	0.00E+00	0.00E+00	-6.34E-11	1.32E-12	0.00E+00	0.00E+00	-3.77E-09
NHWD	[kg]	1.32E-02	9.24E-05	1.59E-03	0	9.22E-05	0.00E+00	0.00E+00	1.88E-01	4.06E-05	0.00E+00	0.00E+00	2.35E-02
RWD	[kg]	2.70E-04	1.05E-06	-1.56E-05	0	1.05E-06	0.00E+00	0.00E+00	-1.32E-05	4.62E-07	0.00E+00	0.00E+00	-7.61E-04

CRU	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
MFR	[kg]	0.00E+00	0.00E+00	4.20E-02	0.00E+00	0.00E+00	3.73E+00	0.00E+00	0.00E+00	0.00E+00	1.12E+00	0.00E+00	0.00E+00
MER	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
EEE	[MJ]	0.00E+00	0.00E+00	1.84E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.01E+01	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	3.57E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.96E+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**

## PTM Flammespærre

ENVIRONMENTAL IMPACTS PER [m <sup>2</sup> bitumen sheet]													
Parameter	Unit	A1-A3	A4	A5	C1	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
GWP	[kg CO <sub>2</sub> -eq.]	4.57E-01	3.14E-02	1.61E-01	0	3.12E-02	0.00E+00	0.00E+00	-3.40E-01	1.37E-02	4.62E+00	1.88E-03	-1.62E+00
ODP	[kg CFC11-eq.]	1.36E-08	3.74E-15	-1.36E-09	0	3.72E-15	0.00E+00	0.00E+00	-1.27E-08	1.64E-15	1.96E-08	3.06E-10	-3.92E-09
AP	[kg SO <sub>2</sub> -eq.]	3.59E-03	2.63E-05	2.46E-04	0	2.62E-05	0.00E+00	0.00E+00	-4.34E-03	1.15E-05	1.30E-03	1.39E-05	-2.38E-03
EP	[kg PO <sub>4</sub> <sup>3-</sup> -eq.]	1.77E-04	5.41E-06	2.31E-05	0	5.39E-06	0.00E+00	0.00E+00	8.19E-05	2.37E-06	5.09E-04	3.35E-06	-1.95E-04
POCP	[kg ethene-eq.]	1.75E-03	-4.51E-07	2.00E-04	0	-4.49E-07	0.00E+00	0.00E+00	-3.50E-03	-1.97E-07	7.38E-05	1.64E-06	-1.20E-03
ADPE	[kg Sb-eq.]	1.88E-07	3.26E-09	6.26E-08	0	3.25E-09	0.00E+00	0.00E+00	1.34E-07	1.43E-09	2.26E-06	2.81E-09	-2.65E-07
ADPF	[MJ]	6.15E+01	4.19E-01	7.08E+00	0	4.17E-01	0.00E+00	0.00E+00	-1.20E+02	1.84E-01	1.05E+00	2.56E-02	-5.82E+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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
PERE	[MJ]	6.73E+00	2.94E-02	9.82E-01	0	2.93E-02	0.00E+00	0.00E+00	-3.69E-01	1.29E-02	4.57E-02	1.97E-04	-1.45E+01
PERM	[MJ]	1.95E-01	0	-1.95E-01	0	0	0	0	0	0	0	0	0
PERT	[MJ]	6.92E+00	2.94E-02	7.88E-01	0	2.93E-02	0.00E+00	0.00E+00	-3.69E-01	1.29E-02	4.57E-02	1.97E-04	-1.45E+01
PENRE	[MJ]	1.56E+01	4.26E-01	3.08E+00	0	4.24E-01	0.00E+00	0.00E+00	1.27E+02	1.87E-01	1.11E+00	2.58E-02	-6.19E+01
PENRM	[MJ]	4.97E+01	0	4.31E+00	0	0	5.40E+01	0	5.40E+01	0	5.40E+01	0	1.62E+01
PENRT	[MJ]	6.53E+01	4.26E-01	7.39E+00	0	4.24E-01	5.40E+01	0.00E+00	7.32E+01	1.87E-01	1.73E+01	2.58E-02	-4.57E+01
SM	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
RSF	[MJ]	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	[MJ]	0	0	0	0	0	0	0	0	0	0	0	0
FW	[m <sup>3</sup> ]	1.96E-03	3.40E-05	3.49E-04	0	3.38E-05	0.00E+00	0.00E+00	-9.35E-04	1.49E-05	2.54E-03	1.39E-06	-5.34E-03
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	100% recycling				30% recycling, 70% incineration			
						C2	C3	C4	D	C2	C3	C4	D
HWD	[kg]	6.73E-10	2.25E-12	8.11E-11	0	2.24E-12	0.00E+00	0.00E+00	-4.75E-11	9.87E-13	0.00E+00	0.00E+00	-2.83E-09
NHWD	[kg]	2.38E-02	6.94E-05	2.86E-03	0	6.91E-05	0.00E+00	0.00E+00	1.41E-01	3.04E-05	0.00E+00	0.00E+00	1.78E-02
RWD	[kg]	1.02E-04	7.91E-07	-2.94E-05	0	7.87E-07	0.00E+00	0.00E+00	-9.88E-06	3.46E-07	0.00E+00	0.00E+00	-5.70E-04

CRU	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
MFR	[kg]	0.00E+00	0.00E+00	3.56E-02	0.00E+00	0.00E+00	2.79E+00	0.00E+00	0.00E+00	0.00E+00	8.38E-01	0.00E+00	0.00E+00
MER	[kg]	0	0	0	0	0	0	0	0	0	0	0	0
EEE	[MJ]	0.00E+00	0.00E+00	1.38E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.60E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	2.67E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.47E+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												

Checked and approved by



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