This appendix refers to the EPD MD-21020-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.

Product 1: Peat Black

ENVIRONMENTAL IMPACTS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP	[kg CO2-eq.]	4.48E+02	0.00E+00	4.64E+00	2.27E-01	4.09E-01	-8.80E-01
ODP	[kg CFC11-eq.]	1.95E-05	0.00E+00	1.16E-15	1.00E-09	2.25E-15	-1.10E-14
AP	[kg SO2-eq.]	1.54E+00	0.00E+00	4.05E-03	3.04E-04	2.60E-03	-4.71E-03
EP	[kg PO43--eq.]	5.00E-01	0.00E+00	7.54E-04	7.33E-05	2.92E-04	-9.14E-04
POCP	[kg ethene-eq.]	1.03E-01	0.00E+00	-5.68E-05	3.75E-05	1.97E-04	-4.38E-04
ADPE	[kg Sb-eq.]	2.70E-02	0.00E+00	3.82E-07	2.41E-07	4.13E-08	-1.64E-07
ADPF	[MJ]	6.06E+03	0.00E+00	6.29E+01	2.34E+00	5.80E+00	-1.14E+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 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	7.54E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.43E+00
PERM	[MJ]	4.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	8.02E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.43E+00
PENRE	[MJ]	7.02E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
PENRM	[MJ]	1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	7.04E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
SM	[kg]	1.37E+02	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
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m3]	7.11E+00	0.00E+00	4.24E-03	1.75E-03	1.51E-03	-4.22E-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 = Use of net fresh water						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	4.75E-05	0.00E+00	2.92E-06	3.86E-09	9.10E-08	-2.49E-07
NHWD	[kg]	1.98E+00	0.00E+00	1.00E-02	8.08E-03	3.00E+01	-1.81E+01
RWD	[kg]	1.94E-02	0.00E+00	1.17E-04	1.36E-04	6.78E-05	-9.21E-04

CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	6.10E+01	0.00E+00	0.00E+00	9.70E+02	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
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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						

Group 1: Beach Yellow + Nordic Red + Terracotta Red

ENVIRONMENTAL IMPACTS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP	[kg CO_2-eq.]	2.16E+02	0.00E+00	4.64E+00	2.27E-01	4.09E-01	-8.76E-01
ODP	[kg CFC11-eq.]	6.52E-07	0.00E+00	1.16E-15	1.00E-09	2.25E-15	-1.10E-14
AP	[kg SO_2-eq.]	2.05E-01	0.00E+00	4.05E-03	3.04E-04	2.60E-03	-4.68E-03
EP	[kg PO_4^{3-}-eq.]	4.23E-02	0.00E+00	7.54E-04	7.33E-05	2.92E-04	-9.10E-04
POCP	[kg ethene-eq.]	2.58E-02	0.00E+00	-5.68E-05	3.75E-05	1.97E-04	-4.36E-04
ADPE	[kg Sb-eq.]	1.32E-03	0.00E+00	3.82E-07	2.41E-07	4.13E-08	-1.64E-07
ADPF	[MJ]	3.40E+03	0.00E+00	6.29E+01	2.34E+00	5.80E+00	-1.14E+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 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	3.58E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.41E+00
PERM	[MJ]	4.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	4.06E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.41E+00
PENRE	[MJ]	3.44E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
PENRM	[MJ]	1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	3.46E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
SM	[kg]	1.42E+02	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
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m^3]	6.91E-01	0.00E+00	4.24E-03	1.75E-03	1.51E-03	-4.20E-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 = Use of net fresh water						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	4.59E-05*	0.00E+00	2.92E-06	3.86E-09	9.10E-08	-2.48E-07
NHWD	[kg]	3.38E+00**	0.00E+00	1.00E-02	8.08E-03	3.00E+01	-1.80E+01
RWD	[kg]	1.93E-02	0.00E+00	1.17E-04	1.36E-04	6.78E-05	-9.17E-04
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	6.10E+01	0.00E+00	0.00E+00	9.70E+02	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
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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						

** This indicator varies 59% between highest and lowest impact in the product group. Thus, the highest impact from Product 3 is stated. The difference is caused by the amount of input of dry clay powder and clay in the Engobe.*

*** This indicator varies 14% between highest and lowest impact in the product group. Thus, the highest impact from Product 4 is stated. The difference is caused by the amount of input of sand.*

Group 2: Brazilian Brown + Cloudy Gray + Concrete Gray

ENVIRONMENTAL IMPACTS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
GWP	[kg CO2-eq.]	3.49E+02	0.00E+00	4.64E+00	2.27E-01	4.09E-01	-8.80E-01
ODP	[kg CFC11-eq.]	1.15E-05	0.00E+00	1.16E-15	1.00E-09	2.25E-15	-1.10E-14
AP	[kg SO2-eq.]	9.75E-01	0.00E+00	4.05E-03	3.04E-04	2.60E-03	-4.71E-03
EP	[kg PO43--eq.]	3.06E-01	0.00E+00	7.54E-04	7.33E-05	2.92E-04	-9.14E-04
POCP	[kg ethene-eq.]	7.03E-02	0.00E+00	-5.68E-05	3.75E-05	1.97E-04	-4.38E-04
ADPE	[kg Sb-eq.]	1.61E-02	0.00E+00	3.82E-07	2.41E-07	4.13E-08	-1.64E-07
ADPF	[MJ]	4.93E+03	0.00E+00	6.29E+01	2.34E+00	5.80E+00	-1.14E+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 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	[MJ]	5.86E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.43E+00
PERM	[MJ]	4.80E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	6.34E+02	0.00E+00	3.64E+00	3.78E+00	7.82E-01	-3.43E+00
PENRE	[MJ]	5.51E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
PENRM	[MJ]	1.34E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	5.52E+03	0.00E+00	6.32E+01	2.68E+00	5.97E+00	-1.37E+01
SM	[kg]	1.37E+02	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
NRSF	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m3]	4.39E+00	0.00E+00	4.24E-03	1.75E-03	1.51E-03	-4.22E-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 = Use of net fresh water						

WASTE CATEGORIES AND OUTPUT FLOWS PER 1 TONNE OF FAÇADE TILE							
Parameter	**Unit**	**A1-A3**	**C1**	**C2**	**C3**	**C4**	**D**
HWD	[kg]	3.83E-05*	0.00E+00	2.92E-06	3.86E-09	9.10E-08	-2.49E-07
NHWD	[kg]	2.83E+00	0.00E+00	1.00E-02	8.08E-03	3.00E+01	-1.81E+01
RWD	[kg]	1.93E-02	0.00E+00	1.17E-04	1.36E-04	6.78E-05	-9.21E-04
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	6.10E+01	0.00E+00	0.00E+00	9.70E+02	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
EEE	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	0.00E+00	0.00E+00	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						

** This indicator varies 39% between highest and lowest impact in the product group. Thus, the highest impact from Product 7 is stated. The difference is caused by the amount of input of dry clay powder and clay in the Engobe.*

Checked and approved by

Charlotte Merlin
Third party verifier of MD-21020-EN

Henrik Fred Larsen
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