

## LCA: Results according to EN 15804:2012+A1

The LCA results for other product variations and the sub-construction can be found in a public annex to this EPD. This appendix refers to the EPD of Urban cladding tile from Zürcher Ziegeleien AG, 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. To assess specific configurations on building level, the results of the LCA may be scaled linear, by using the quotient of actual mass per unit area divided by declared mass per unit area as scaling factor (e.g. 50 kg/m<sup>2</sup> / 47,74 kg/m<sup>2</sup> = 1,0473 = scaling factor to be applied on all indicators in all life cycle stages).

### DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse- Recovery- Recycling- potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	ND	ND	MNR	MNR	MNR	ND	ND	X	X	X	ND	X

### RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A1: 1 m<sup>2</sup> cladding tile "L- type", 47,74 kg/m<sup>2</sup>

Core Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D/1	D/2
GWP	[kg CO2 eq.]	1.32E+01	3.24E-01	2.88E+00	0.00E+0	1.54E-01	1.24E-01	-1.14E+00	-1.08E+00
ODP	[kg R11 eq.]	1.14E-13	5.30E-17	5.06E-16	0.00E+0	2.51E-17	7.21E-16	-1.40E-14	-1.52E-14
AP	[kg SO2 eq.]	2.08E-02	2.59E-04	2.71E-04	0.00E+0	1.23E-04	8.22E-04	-2.39E-03	-1.62E-03
EP	[kg Phosphate]	3.16E-03	4.81E-05	5.83E-05	0.00E+0	2.29E-05	2.01E-04	-4.72E-04	-2.48E-04
POCP	[kg Ethene eq.]	2.14E-03	-3.74E-06	2.28E-05	0.00E+0	-1.78E-06	9.04E-05	-2.52E-04	-1.61E-04
ADPE	[kg Sb eq.]	8.07E-06	2.37E-08	6.20E-09	0.00E+0	1.13E-08	1.40E-07	-1.85E-07	-1.91E-07
ADPF	[MJ]	1.25E+02	4.39E+00	5.55E-01	0.00E+0	2.09E+00	2.35E+00	-1.60E+01	-1.50E+01

Caption: GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non- fossil resources; ADPF = Abiotic depletion potential for fossil resources;

### RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A1: 1 m<sup>2</sup> cladding tile "L- type", 47,74 kg/m<sup>2</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D/1	D/2
PERE	[MJ]	5.53E+01	2.48E-01	2.69E+01	0.00E+0	1.18E-01	2.01E-01	-3.86E+00	-4.10E+00
PERM	[MJ]	2.67E+01	0.00E+00	-2.67E+01	0.00E+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PERT	[MJ]	8.20E+01	2.48E-01	1.22E-01	0.00E+0	1.18E-01	2.01E-01	-3.86E+00	-4.10E+00
PENRE	[MJ]	1.28E+02	4.41E+00	3.54E+00	0.00E+0	2.10E+00	2.39E+00	-1.93E+01	-1.85E+01
PENRM	[MJ]	2.89E+00	0.00E+00	-2.89E+00	0.00E+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PENRT	[MJ]	1.31E+02	4.41E+00	6.47E-01	0.00E+0	2.10E+00	2.39E+00	-1.93E+01	-1.85E+01
SM	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+0	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+0	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+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
FW	[m <sup>3</sup> ]	3.30E-02	2.87E-04	6.99E-03	0.00E+0	1.36E-04	6.27E-04	-4.48E-03	-4.78E-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

### RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A1: 1 m<sup>2</sup> cladding tile "L-type", 47,74 kg/m<sup>2</sup>

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	D/1	D/2
HWD	[kg]	4.64E-07	2.05E-07	6.27E-10	0.00E+0	9.74E-08	5.05E-08	-1.10E-07	-3.33E-08
NHWD	[kg]	2.98E-01	6.73E-04	3.56E-02	0.00E+0	3.21E-04	7.22E-04	-8.24E-03	-1.94E+00
RWD	[kg]	2.24E-03	5.45E-06	3.60E-05	0.00E+0	2.60E-06	1.92E-05	-1.28E-03	-1.38E-03
CRU	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MFR	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+0	0.00E+00	4.63E+01	0.00E+00	0.00E+00
MER	[kg]	0.00E+00	0.00E+00	0.00E+00	0.00E+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	[MJ]	0.00E+00	0.00E+00	4.27E+00	0.00E+0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EET	[MJ]	0.00E+00	0.00E+00	7.67E+00	0.00E+0	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; EEE = Exported thermal energy

For the indicators ADPE, ADPF, WDP, ETP-fw, HTP-c, HTP-nc, SQP:

The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.