

OI3 Statement

Result sheet building – new building



www.baubook.at/eco2soft
Ökobilanz für Gebäude

Project name: copy of RC

building overall

*OI3 BG3 ref.	255 points	GFA:	3.000 m ²
Area:		ref. area_{OI}:	3.000 m ²
EI10:	41,18 points	catalog of LCA indicators:	IBO benchmarks 2012
PENRT:	3.471 MJ / (m ² ref. area _{OI})	useful life considered:	yes, replacements rates with whole numbers (according to EN 15804 standard)
GWP-total:	234 kg CO ₂ equ. / (m ² ref. area _{OI})	study period:	100 years
AP:	0,752 kg SO ₂ equ. / (m ² ref. area _{OI})	service life catalog:	2018
Guide version OI3:	V4.0 (September 2018)		
Guide version EI10:	V2, 2018		



* Taking into account the manufacturing phase (A1-A3) and the use phase (B1-B4) of EN 15804

test- and educational-version. not for commercial use!

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components from the energy certificate

		ΔOI3		PENRT	GWP-total	AP	EI_{KON}
quantity	building element	BG3, ref. Area	per m ²	MJ	kg CO ₂ equ.	kg SO ₂ equ.	per m ²
1.442,00 m ²	F1_F1-8_in	80	167	1.087	69	0,245	2,96
194,00 m ²	F2_F1-8_ex	4	66	51	4	0,014	0,46
268,00 m ²	R1	20	224	303	17	0,053	5,37
1.132,00 m ²	W1_F1-8_N_ex	60	160	880	49	0,170	4,76
537,00 m ²	W2_F1-8_L_in	37	206	520	32	0,107	4,76
sum				2.842	171	0,589	

interior walls

		ΔOI3		PENRT	GWP-total	AP	EI_{KON}
quantity	building element	BG3, ref. Area	per m ²	MJ	kg CO ₂ equ.	kg SO ₂ equ.	per m ²
2.142,00 m ²	B1	26	37	314	30,7	0,081	0,12
700,00 m ²	C1	7	30	82	8,1	0,021	0,09
538,00 m ²	S1	3	19	40	3,9	0,010	0,06
1.201,00 m ²	W3_F1-8_N_in	16	40	185	20,4	0,049	0,34
sum				621	63,0	0,161	

old component type

		ΔOI3		PENRT	GWP-total	AP	EI_{KON}
quantity	building element	BG3, ref. Area	per m ²	MJ	kg CO ₂ equ.	kg SO ₂ equ.	per m ²
30,00 m ²	R2	1	64	7,48	0,768	0,00196	0,45
sum				7,48	0,768	0,00196	

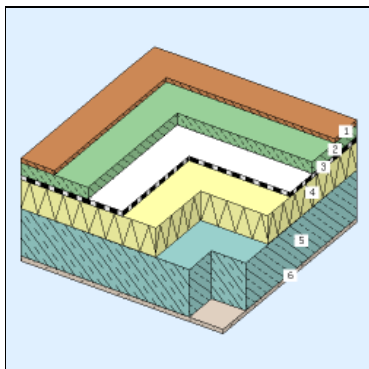
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graphic details of solid and transparent building elements

Project name: copy of RC

F1_F1-8_in (components from the energy certificate, BG3)



ΣΔOI3: 167 points/m²

El_{KON}: 2,96 points/m²

mass: 586,5 kg/m²

PENRT: 2.262 MJ/m²

GWP-total: 143 kg CO₂ equ./m²

AP: 0,510 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no. layer	d _{cm}	Useful life >b	ΔOI3 pts/m ²	Disposal- classification	Exploitation potential
1 Trittschalldämmung (Isover Akustic EP3) (Timber (525 kg/m ³ - e.g. larch) - rough, technically drier)	1,30	50	1	1	1
2 Rigidur Estrichelement (Cement and cement flowing screed (1800 kg/m ³))	5,00	50	16	3	4
3 Rieselschutz (Sisalex™ 30)	0,01	¹ 50	² 0	3	3
4 Brettsperholz BBS (5-lagig) (EPS-F grey/black (by 2010) (16.5 kg/m ³))	12,00	¹ 25	47	5	4
5 schallentkoppelte U-Direktabhängiger mit Rigips CD Profil / Mineralwolle (z. B. Isover Trennwand Filz)	20,00	100	63	2	2
6 Silicate plaster with synthetic resin additive, reinforced	0,70	35	38	2	5
building element	39,01				

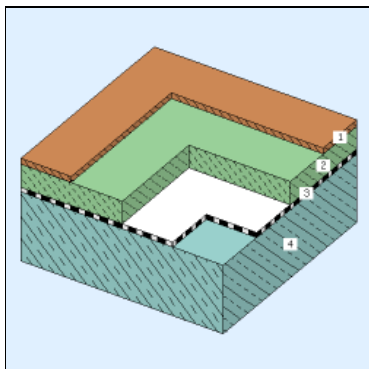
annotations: Importiert am 06. 03. 2022: Bauteil "DE06e_" aus Gebäude ""

¹ self-entered value ² layer is OI-relevant from BG1

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

F2_F1-8_ex (components from the energy certificate, BG3)



ΣΔOI3: 66 points/m²

El_{KON}: 0,46 points/m²

mass: 453,2 kg/m²

PENRT: 789 MJ/m²

GWP-total: 66,7 kg CO₂ equ./m²

AP: 0,211 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no. layer	d _{cm}	Useful life >b	ΔOI3 pts/m ²	Disposal- classification	Exploitation potential
1 Trittschalldämmung (Isover Akustic EP3) (Timber (525 kg/m ³ - e.g. larch) - rough, technically drier)	1,30	50	1	1	1
2 Splittschüttung gebunden (Cement and cement flowing screed (1800 kg/m ³))	5,00	50	16	3	4
3 Rieselschutz (Sisalex™ 30)	0,01	¹ 50	² 0	3	3
4 schallentkoppelte U-Direktabhängiger mit Rigips CD Profil / Mineralwolle (z. B. Isover Trennwand Filz)	15,00	100	47	2	2
building element	21,31				

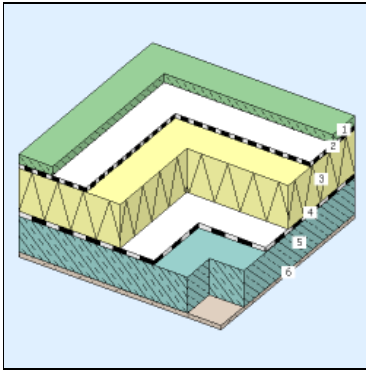
annotations: Importiert am 06. 03. 2022: Bauteil "DE06e_" aus Gebäude ""

¹ self-entered value ² layer is OI-relevant from BG1

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

R1 (components from the energy certificate, BG3)



$\Sigma \Delta OI3$: 224 points/m²

$E_{l,KON}$: 5,37 points/m²

mass: 583,6 kg/m²

PENRT: 3.397 MJ/m²

GWP-total: 190 kg CO₂ equ./m²

AP: 0,594 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

0,140 W/m²K

U value ³



OI-Class (BG3)⁴

D



no. layer	d cm	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Cement and cement flowing screed (1800 kg/m ³)	5,00	50	16	3	4
2 gewebearmierte Kunststoff-Schweißbahn (>1,7 kg/m ²) (Polyethylene (PE) sealing sheeting)	0,25	25	¹ 37	3	4
3 Expandiertes Polystyrol (Gefälledämmung) (EPS-F grey/black (by 2010) (16.5 kg/m ³))	24,00	² 25	95	5	4
4 Abdichtungsbahn (sd=220m) (Bauder TEC KSD, Bauder TEC KSD DUO)	0,15	² 50	¹ 8	3	5
5 Brettsperrholz BBS (5-lagig) (Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol. %))	20,00	100	63	2	2
6 Brettsperrholz BBS (5-lagig) (Normal plastering mortar GP lime (1500 kg/m ³))	0,70	35	5	2	3
building element	50,10				

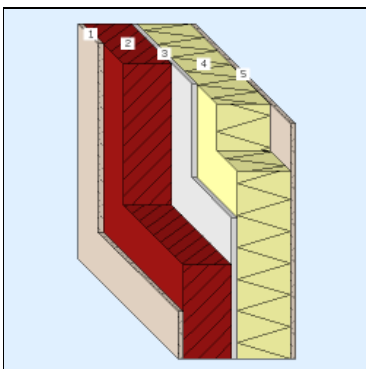
annotations: Importiert am 06. 03. 2022: Bauteil "DA05a_" aus Gebäude ""

¹ layer is OI-relevant from BG1 ² self-entered value ³ U value (Heat transfer coefficient) calculated according to ÖNORM EN ISO 6946. ⁴ For the OI class, the U-value of the component is taken into account in addition to the ecological key figures

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

W1_F1-8_N_ex (components from the energy certificate, BG3)



$\Sigma \Delta OI3$: 160 points/m²

$E_{l,KON}$: 4,76 points/m²

mass: 327,7 kg/m²

PENRT: 2.333 MJ/m²

GWP-total: 130 kg CO₂ equ./m²

AP: 0,452 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

0,150 W/m²K

U value ²



OI-Class (BG3)³



no. layer (from inside to outside)	d cm	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Normal plastering mortar GP lime (1500 kg/m ³)	1,50	35	11	2	3
2 Hollow concrete blocks (1400 kg/m ³)	20,00	100	17	2	2
3 Mineral adhesive	0,50	50	6	3	5
4 EPS-F grey/black (by 2010) (16.5 kg/m ³)	22,00	¹ 25	87	5	4
5 Silicate plaster with synthetic resin additive, reinforced	0,70	35	38	2	5
building element	44,70				

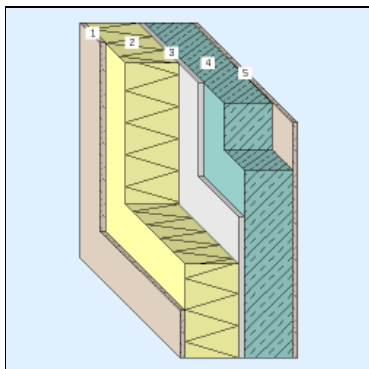
annotations: Importiert am 06. 03. 2022: Bauteil "AW 00a Betonhohlsteinmauerwerk mit Innen- und Außenputz (EPS)" aus Gebäude ""

¹ self-entered value ² U value (Heat transfer coefficient) calculated according to ÖNORM EN ISO 6946. ³ For the OI class, the U-value of the component is taken into account in addition to the ecological key figures

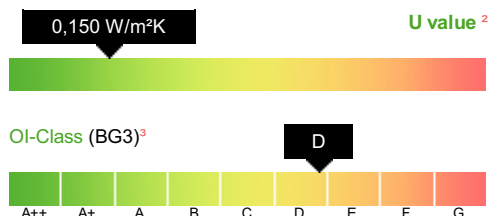
16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

W2_F1-8_L_in (components from the energy certificate, BG3)



$\Sigma\Delta OI3$: 206 points/m²
 $E_{l,KON}$: 4,76 points/m²
 mass: 522,7 kg/m²
 $PENRT$: 2.906 MJ/m²
 GWP -total: 177 kg CO₂ equ./m²
 AP : 0,595 kg SO₂ equ./m²
 service life: yes, replacements rates with whole numbers (according to EN 15804 standard)



no. layer (from inside to outside)	d _{cm}	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Silicate plaster with synthetic resin additive, reinforced	0,70	35	38	2	5
2 EPS-F grey/black (by 2010) (16.5 kg/m ³)	22,00	125	87	5	4
3 Mineral adhesive	0,50	50	6	3	5
4 Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol.%)	20,00	100	63	2	2
5 Normal plastering mortar GP lime (1500 kg/m ³)	1,50	35	11	2	3
building element	44,70				

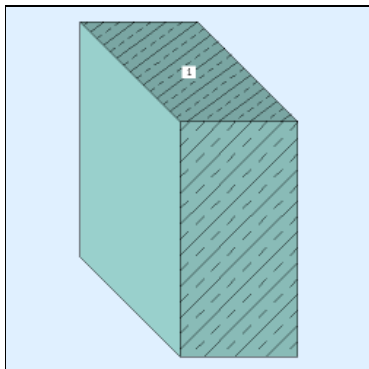
annotations: Importiert am 06. 03. 2022: Bauteil "AW 00a Betonhohlsteinmauerwerk mit Innen- und Außenputz (EPS)" aus Gebäude ""

¹ self-entered value ² U value (Heat transfer coefficient) calculated according to ÖNORM EN ISO 6946. ³ For the OI class, the U-value of the component is taken into account in addition to the ecological key figures

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

B1 (interior walls, BG3)



$\Sigma\Delta OI3$: 37 points/m²
 $E_{l,KON}$: 0,12 points/m²
 mass: 277,9 kg/m²
 $PENRT$: 439 MJ/m²
 GWP -total: 43,0 kg CO₂ equ./m²
 AP : 0,114 kg SO₂ equ./m²
 service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no. layer (from inside to outside)	d _{cm}	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Brettsperrholz BBS (3-lagig) (Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol.%)	11,70	100	1 37	2	2
building element	11,70				

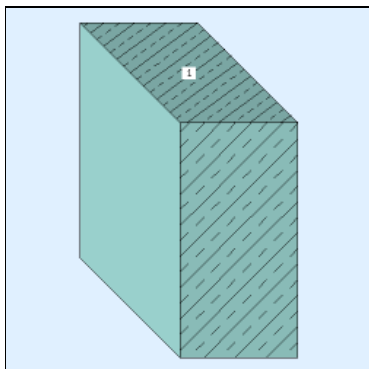
annotations: Importiert am 06. 03. 2022: Bauteil "IW01b_" aus Gebäude ""

¹ layer is OI-relevant from BG3

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

C1 (interior walls, BG3)



$\Sigma\Delta\text{OI3}$: 30 points/m²

EI_{KON} : 0,09 points/m²

mass: 223,3 kg/m²

PENRT: 353 MJ/m²

GWP-total: 34,5 kg CO₂ equ./m²

AP: 0,0913 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no.	layer (from inside to outside)	d cm	Useful life >b	ΔOI3 pts/m ²	Disposal- classification	Exploitation potential
1	Brettsper Holz BBS (3-lagig) (Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol.%))	9,40	100	¹ 30	2	2
building element		9,40				

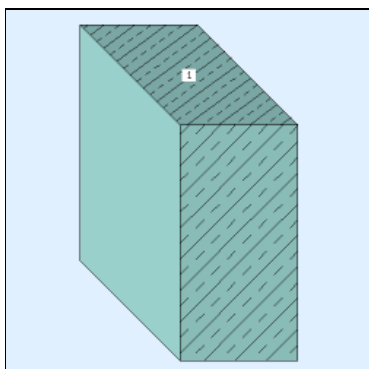
annotations: Importiert am 06. 03. 2022: Bauteil "IW01b_" aus Gebäude ""

¹ layer is Ol-relevant from BG3

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

S1 (interior walls, BG3)



$\Sigma\Delta\text{OI3}$: 19 points/m²

EI_{KON} : 0,06 points/m²

mass: 140,1 kg/m²

PENRT: 222 MJ/m²

GWP-total: 21,7 kg CO₂ equ./m²

AP: 0,0573 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no.	layer (from inside to outside)	d cm	Useful life >b	ΔOI3 pts/m ²	Disposal- classification	Exploitation potential
1	Brettsper Holz BBS (3-lagig) (Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol.%))	5,90	100	¹ 19	2	2
building element		5,90				

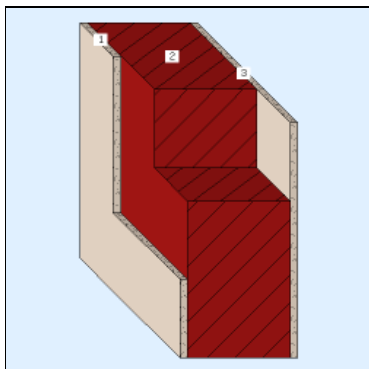
annotations: Importiert am 06. 03. 2022: Bauteil "IW01b_" aus Gebäude ""

¹ layer is Ol-relevant from BG3

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

W3_F1-8_N_in (interior walls, BG3)



$\Sigma\Delta OI3$: 40 points/m²

El_{kon} : 0,34 points/m²

mass: 325,0 kg/m²

PENRT: 463 MJ/m²

GWP-total: 50,9 kg CO₂ equ./m²

AP: 0,121 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)

no. layer (from inside to outside)	d _{cm}	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Rigips Feuerschutzplatte (Normal plastering mortar GP lime (1500 kg/m ³))	1,50	35	¹ 11	2	3
2 Brettsperrholz BBS (3-lagig) (Hollow concrete blocks (1400 kg/m ³))	20,00	100	¹ 17	2	2
3 Rigips Feuerschutzplatte (Normal plastering mortar GP lime (1500 kg/m ³))	1,50	35	¹ 11	2	3
building element	23,00				

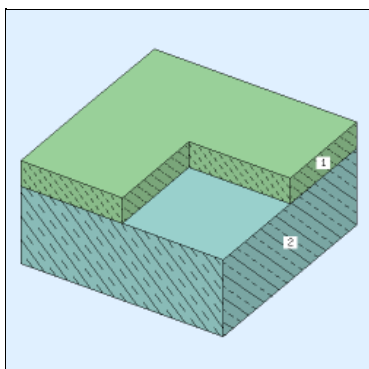
annotations: Importiert am 06. 03. 2022: Bauteil "AW15b_" aus Gebäude ""

¹ layer is OI-relevant from BG2

16. 05. 2022, Qiming SUN (Tianjin University)

Project name: copy of RC

R2 (old component type, BG3)



$\Sigma\Delta OI3$: 64 points/m²

El_{kon} : 0,45 points/m²

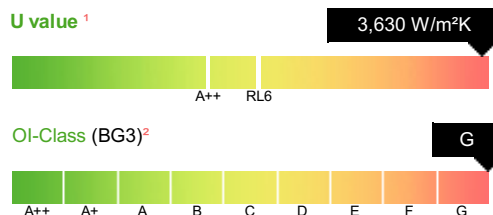
mass: 446,3 kg/m²

PENRT: 748 MJ/m²

GWP-total: 76,8 kg CO₂ equ./m²

AP: 0,196 kg SO₂ equ./m²

service life: yes, replacements rates with whole numbers (according to EN 15804 standard)



no. layer	d _{cm}	Useful life >b	$\Delta OI3$ pts/m ²	Disposal- classification	Exploitation potential
1 Cement and cement flowing screed (1800 kg/m ³)	5,00	50	16	3	4
2 Reinforced concrete 140 kg/m ³ reinforcing steel (1.75 vol.%)	15,00	100	47	2	2
building element	20,00				

annotations: Importiert am 06. 03. 2022: Bauteil "De 03: Kellerdecke, Stahlbeton" aus Gebäude ""

¹ U value (Heat transfer coefficient) calculated according to ÖNORM EN ISO 6946. A++: U-Werte im Bereich der Markierung A++ (0,14 W/m²K) sind notwendig, um derartige Gebäude zu errichten. RL6: OIB Richtlinie 6 (April 2007); In ganz Österreich seit 1.1.08 verbindlich festgelegter max. U-Wert (0,20 W/m²K) für alle Neubauten sowie instandgesetzte bzw. erneuerte Bauteile. ² For the OI class, the U-value of the component is taken into account in addition to the ecological key figures

16. 05. 2022, Qiming SUN (Tianjin University)

List of materials

material	mass kg	mass- percentage	cumulated percentage	Building material ID	Density kg/m³	λ- Value W/m²K	PENRT MJ/FU (functional unit)	GWP-total kg CO₂ equ./FU (functional unit)	AP kg SO₂ equ./FU (functional unit)	FU (functional unit)
Reinforced concrete 140 kg/m³ reinforcing steel (1.75 vol.%)	1.973.996	66,4%	66,4%	2142717549	2.375	2,500	1,58	0,155	0,000409	kg
Hollow concrete blocks (1400 kg/m³)	653.240	22,0%	88,4%	2142714718	1.400	1,200	0,636	0,0951	0,000181	kg
Cement and cement flowing screed (1800 kg/m³)	174.060	5,9%	94,2%	2142714882	1.800	1,100	1,03	0,120	0,000278	kg
Normal plastering mortar GP lime (1500 kg/m³)	94.412	3,2%	97,4%	2142714785	1.500	0,670	2,11	0,178	0,000524	kg
Silicate plaster with synthetic resin additive, reinforced	39.199	1,3%	98,7%	2142684396	1.800	0,800	13,3	0,651	0,00350	kg
Mineral adhesive	15.021	0,5%	99,2%	2142684362	1.800	1,000	4,07	0,341	0,000954	kg
Timber (525 kg/m³ - e.g. larch) - rough, technically dried	11.166	0,4%	99,6%	2142715293	525	0,130	2,77	-1,65	0,00104	kg
EPS-F grey/black (by 2010) (16.5 kg/m³)	9.975	0,3%	100,0%	2142714936	17	0,035	98,9	4,17	0,0149	kg
Polyethylene (PE) sealing sheeting	657	0,0%	100,0%	2142712507	980	0,500	69,8	2,10	0,00792	kg
Bauder TEC KSD, Bauder TEC KSD DUO	462	0,0%	100,0%	2142732461	1.150	0,170	41,6	0,819	0,00556	kg
Sisalex™ 30	131	0,0%	100,0%	2142684992	800	0,180	14,2	-0,953	0,00589	kg