

Compartment wall - twrxo07a-06

compartment wall, timber frame construction, without dry lining, double-layer, other surface

Performance rating

Fire protection performance REI 60

apply to each individual load-bearing wall; the whole wall: EI90; maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m

Classified by HFA
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Germany

F60

Load $E_{d,fi}$ according to the German certification document

Corresponding proof: manufacturer-specific

Thermal performance U Diffusion 0.19 W/(m²K) suitable

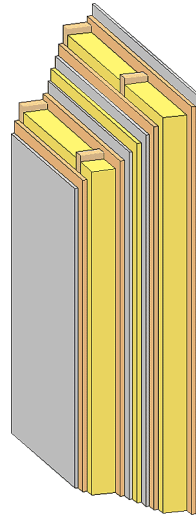
Calculated by TUM

Acoustic performance R_w (C₁;C_{1r}) 59(-2;-9) dB
 $L_{n,w}$ (C₁)

Assessed by Müller-BBM

Mass per unit area m 97.00 kg/m²

Calculation based on gypsum plaster board type DF



Note: e=625

Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

	Thickness	Building material	Thermal performance				Reaction to fire EN
			λ	μ min – max	ρ	c	
A	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
A	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
B	15.0	OSB	0.130	200	600	1.700	D
C	100.0	construction timber (60/100; e=*)	0.120	50	450	1.600	D
D	100.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
E	15.0	OSB	0.130	200	600	1.700	D
F	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
F	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
G	20.0	mineral wool [040; ≥ 16 ; <1000°C]	0.040	1	16	1.030	A1
H	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
H	12.5	gypsum fibre board	0.320	21	1000	1.100	A2
I	15.0	OSB	0.130	200	600	1.700	D
J	100.0	construction timber (60/100; e=*)	0.120	50	450	1.600	D
K	100.0	Cellulose fibre [040; 50]	0.040	1	50	2.000	E
L	15.0	OSB	0.130	200	600	1.700	D
M	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
M	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

Sustainability rating (per m²)

Database ecoinvent

O13_{Kon}	30.4
Calculated by HFA	

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	kg	58.520
Biogenic carbon in kg CO₂-e.	kg CO ₂	85.790
Energy use of Primary Energy	MJ	899.880
Share of renewable PE	%	23.74

Calculated by TUM

Details of sustainability rating

Database ecoinvent

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.146	0.060	3,05E-6	0.027	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	161.625	844.655	1006.280	534.258	43.364	577.622

Database GaBi (ÖKOBAUDAT)

Lifecycle (Phases)	GWP [kg CO ₂ -e.]	AP [kg SO ₂ -e.]	EP [kg PO ₄ -e.]	ODP [kg R11-e.]	POCP [kg Ethen-e.]	
A1 - A3		0.120	0.019	6,08E-7	0.045	
C1 - C4		0.008	0.008	1,29E-7	0.001	
A1 - C4		0.134	0.029	7,66E-7	0.047	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	210.261	972.227	1183.302	644.568	29.150	673.810
C1 - C4	1.820	-785.630	-783.813	20.795	-25.382	-4.590
A1 - C4	213.598	187.633	402.042	686.280	3.976	690.350