Compartment wall - twrxxo07a-07

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
Classified by HFA

Germany

F60

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

Corresponding proof: manufacturer-specific

Thermal performance	**U**	0.19 W/(m²K)
	Diffusion	suitable

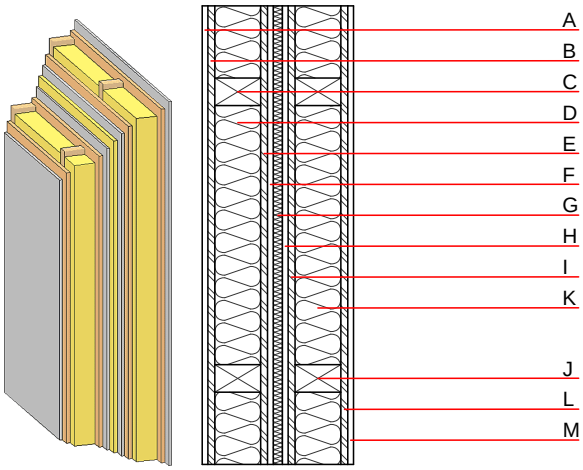
Calculated by TUM

Acoustic performance	**R_w ($C;C_{tr}$)**	59(-2;-9) dB
	$L_{n,w}$ (C_I)	

Assessed by Müller-BBM

Mass per unit area	**m**	96.10 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
			λ	μ min – max	ρ	c	EN
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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	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	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	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 m^2)

Database ecoinvent

$OI3_{Kon}$	31.6

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	56.510
Biogenic carbon in kg CO_2-e.	**kg CO_2**	85.250
Energy use of Primary Energy	**MJ**	1433.200
Share of renewable PE	**%**	30.18

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		0.143	0.061	3,21E-6	0.028	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	165.678	891.543	1057.221	581.763	57.369	639.132

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		0.168	0.031	7,18E-7	0.058	
C1 - C4		0.004	0.001	1,07E-7	0.000	
A1 - C4		0.179	0.034	8,54E-7	0.059	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	428.036	1313.812	1742.617	948.763	64.665	1013.520
C1 - C4	3.002	-1293.075	-1290.076	30.967	-60.897	-29.930
A1 - C4	432.556	21.772	455.095	1000.648	3.976	1004.720