Internal wall - iwrxxo06a-04

internal wall, timber frame construction, without dry lining, other surface

Performance rating

Fire protection performance	**REI**	60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m
Classified by MA39
Classified by HFA

Germany

F60

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

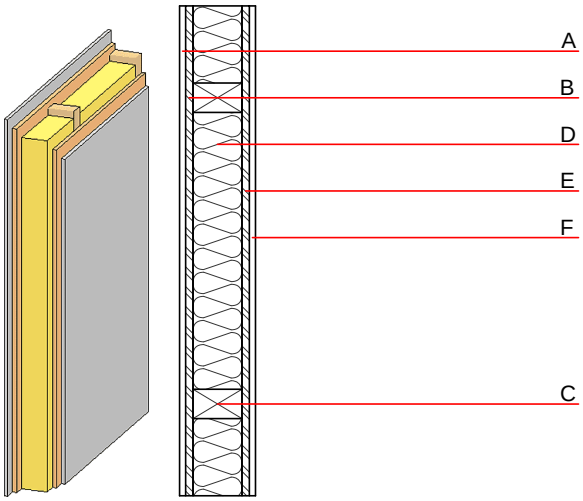
Corresponding proof: manufacturer-specific

Acoustic performance	**R_w ($C;C_{tr}$)** **$L_{n,w}$ (C_I)**	50 dB

Assessed by Müller-BBM

Mass per unit area	**m**	48.80 kg/m^2

Calculation based on gypsum plaster board type DF



Note: The fire resistance is only valid when wall is used as partition with only one side exposed to fire.
(C=60/100); 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 fibre board or	0.320	21	1000	1.100	A2
A	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2
B	15.0	OSB	0.130	200	600	1.700	D
C	100.0	construction timber (60/100 or 60/160; e=*)	0.120	50	450	1.600	D
D	100.0	cellulose fibre [0,040; R=55]	0.040	1 - 2	55	2.000	B
E	15.0	OSB	0.130	200	600	1.700	D
F	12.5	gypsum fibre board or	0.320	21	1000	1.100	A2
F	12.5	gypsum plaster board type DF	0.250	10	800	1.050	A2

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$	14.5

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	28.610
Biogenic carbon in kg CO_2-e.	**kg CO_2**	42.080
Energy use of Primary Energy	**MJ**	447.370
Share of renewable PE	**%**	23.65

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		0.071	0.029	1,48E-6	0.013	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	80.433	422.328	502.761	258.897	21.682	280.579

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		0.059	0.010	3,01E-7	0.023	
C1 - C4		0.004	0.004	6,33E-8	0.000	
A1 - C4		0.066	0.014	3,79E-7	0.023	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	104.117	477.853	582.376	320.980	14.575	335.601
C1 - C4	0.906	-392.815	-391.911	10.148	-12.691	-2.543
A1 - C4	105.782	85.557	191.741	341.586	1.988	343.620