

## Internal wall - iwrxo06a-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  $E_{d,fi} = 19,2 \text{ kN/m}$   
 Classified by MA39  
 Classified by HFA

#### Germany

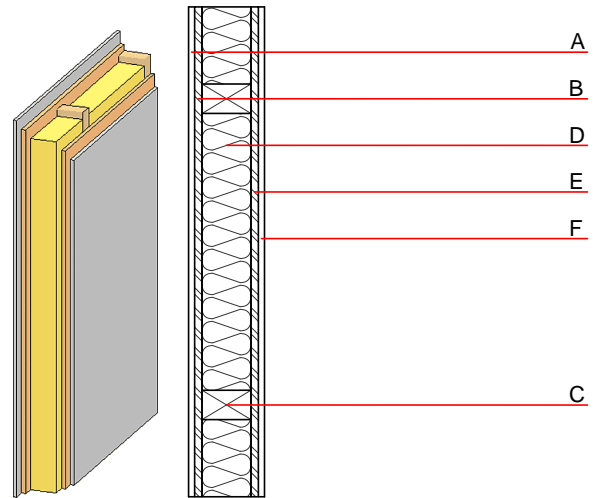
F60  
 Load  $E_{d,fi}$  according to the German certification document  
 Corresponding proof: manufacturer-specific

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

Assessed by Müller-BBM

**Mass per unit area** m 48.80 kg/m<sup>2</sup>

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 EN
			$\lambda$	$\mu$ min – max	$\rho$	c	
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<sup>2</sup>)

#### Database ecoinvent

$OI3_{kon}$  14.5  
 Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 28.610  
 Biogenic carbon in kg CO<sub>2</sub>-e. kg CO<sub>2</sub> 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 <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -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 <sub>2</sub> -e.]	AP [kg SO <sub>2</sub> -e.]	EP [kg PO <sub>4</sub> -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