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Designation: Last updated: Source: Editor: fdmbi01a-02 8/2/23 Holzforschung Austria HFA, PLB

### Flat roof - fdmbi01a-02

flat roof, solid wood construction, not ventilated, with dry lining, suspended, other surface

#### Performance rating

Fire protection		RE	1		60	
performance						
	_			 	-	

maximum span = 5 m; maximum load  $E_{d,fi}$  = 5 kN/m<sup>2</sup> Classified by HFA

#### Germany

REI30; Attention: REI60 (from inside) possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board

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

Corresponding proof: manufacturer-specific

Thermal performance	U Diffusion	0.16 W∕(m <sup>2</sup> K) suitable	
Calculated by TUM			
Acoustic performance	R <sub>w</sub> (C;C <sub>tr</sub> ) L <sub>n,w</sub> (C <sub>l</sub> )	50(-3;-9) dB	
Assessed by Müller-BBM			
Mass per unit area	m	99.20 kg/m <sup>2</sup>	

Calculation based on gypsum plaster board type DF





Note: Attention: REI60 (from inside) in Germany possible with 2x12,5mm gypsum plaster board type DF/gypsum fibre board

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

	Thickness	Building material	Thermal per	Reaction to fire			
			λ	µ min – max	ρ	с	EN
A		sealing sheet sd $\geq$ 100m e.g. EPDM membrane					
В	200.0	mineral wool MW-WD [040; 130; <1000°C] (2*100)	0.040	1	130	1.030	
С		sealing sheet e.g. bitumen					
D	125.0	cross laminated timber $\geq$ 125,0; at least 5-layers, top layer at least 27,5 mm)	0.130	50	500	1.600	D
Е	70.0	acoustic hanger (suspension); e=415;					
F	60.0	mineral wool [040; 11; <1000°C]	0.040	1	11	1.030	A1
G	12.5	gypsum plaster board type DF or	0.250	10	800	1.050	A2
G	12.5	gypsum fibre board	0.320	21	1000	1.100	A2

#### Sustainability rating (per m<sup>2</sup>)

Database ecoinvent

OI3<sub>Kon</sub> 110.4 Built-in renewable materials 64.900 kg kg CO<sub>2</sub> Biogenic carbon in kg CO2-e. 93.500 Calculated by HFA Energy use of Primary Energy MJ 1292.820 Share of renewable PE % 24.32 Calculated by TUM

Database GaBi (ÖKOBAUDAT)

dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes. These datasheets will generally be accepted as proofs of compliance by building authorities.

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#### Details of sustainability rating

#### Database ecoinvent

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO <sub>2</sub> -e.]	[kg SO <sub>2</sub> -e.]	[kg PO <sub>4</sub> -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.488	0.158	7.08E-6	0.180	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[M]	[M]	[M]	[LM]	[MJ]	[LM]
A1 - A3	62.058	855.000	917.058	1208.480	198.054	1406.533

#### Database GaBi (ÖKOBAUDAT)

Lifecycle	GWP	AP	EP	ODP	POCP	
(Phases)	[kg CO <sub>2</sub> -e.]	[kg SO <sub>2</sub> -e.]	[kg PO <sub>4</sub> -e.]	[kg R11-e.]	[kg Ethen-e.]	
A1 - A3		0.317	0.048	4.29E-6	0.030	
C1 - C4		0.005	0.009	1.87E-7	0.001	
A1 - C4		0.325	0.057	4.49E-6	0.032	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[M]	[LM]	[LM]	[MJ]	[M]
A1 - A3	312.926	1110.601	1420.796	948.485	144.454	1092.242
C1 - C4	1.038	-1100.559	-1099.522	23.284	0.000	23.284
A1 - C4	314.353	10.301	321.923	978.465	144.506	1122.274