

Designation: fdrhbi01b-03 Last updated: 8/2/23

Source: Holzforschung Austria

Editor: HFA, SP

# Flat roof - fdrhbi01b-03

flat roof, timber frame construction, ventilated, with dry lining, not suspended, other surface

# Performance rating

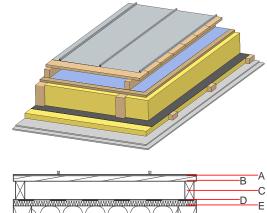
Fire protection

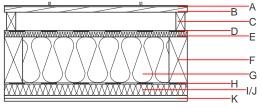
Mass per unit area

Calculation based on GF

 $\begin{array}{c} \textbf{performance} \\ \textbf{maximum span} = 5 \text{ m; maximum load } E_{d,fi} = 3,66 \text{ kN/m}^2 \\ \textbf{Classified by HFA} \\ \hline \textbf{Thermal performance} & \textbf{U} & 0.15 \text{ W/(m}^2 \text{K)} \\ \textbf{Diffusion} & \text{suitable} \\ \hline \textbf{Calculated by HFA} \\ \hline \textbf{Acoustic performance} & \textbf{R}_{\textbf{w}} \textbf{ (C;C}_{\textbf{tr}}) & 52(-2;-7) \text{ dB} \\ \textbf{L}_{\textbf{n,w}} \textbf{ (C_{\textbf{i}})} \\ \hline \textbf{Assessed by TGM} \\ \hline \end{array}$ 

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Note: The design of the under-roof construction and of the counterbattens have to be specified according to the roof pitch and the national requirements.

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

 $47.10~kg/m^2$ 

	Thickness	Building material	Thermal performance				Reaction to fire	
			λ	μ min – max	ρ	С	EN	
Α		sheet metal roofing or plastic roofing membrane			7800		A1	
Α		Plastic roofing membrane					E	
В	24.0	spruce wood closed cladding without spacing of cladding boards	0.120	50	450	1.600	D	
С	80.0	spruce wood counter battens (ventilation)	0.120	50	450	1.600	D	
D		sarking membrane sd ≤ 0,3m			1000		Е	
E	22.0	softboard [045; 250] - rigid underlay	0.045	5	250	2.100	E	
F	240.0	construction timber (80/*; e=800)	0.120	50	450	1.600	D	
G	240.0	mineral wool [040; ≥16; <1000°C]	0.040	1	16	1.030	A1	
Н		vapour barrier sd≥ 2m			1000			
1	50.0	spruce wood cross battens (50/80;a=400)	0.120	50	450	1.600	D	
J	50.0	mineral wool [040; $\geq$ 16; $<$ 1000°C] or without insulation in type 01	0.040	1	16	1.030	A1	
K	25.0	gypsum fibre board (2x12,5 mm) or	0.320	21	1000	1.100	A2	
K	25.0	gypsum plaster board type DF (2x12,5 mm)	0.250	10	800	1.050	A2	

# Sustainability rating (per m²)

Database ecoinvent

OI3<sub>Kon</sub> 41.8

Calculated by HFA



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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		0.184	0.087	3,19E-6	0.034	
Lifecycle	PERE	PERM	PERT	PENRE	PENRM	PENRT
(Phases)	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]	[MJ]
A1 - A3	110.364	614.298	724.662	610.122	19.383	629.505