

Intermediate floor - gdstxx01-00

intermediate floor, exposed beams, without lining, dry, with filling, wooden surface

Performance rating

Fire protection performance REI 30

maximum span = 5 m; maximum load $E_{d,fi} = 5,29 \text{ kN/m}^2$
 Classified by HFA

Germany

F30

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.16, Zeile 1

Thermal performance U Diffusion 0.66 $\text{W}/(\text{m}^2\text{K})$ suitable

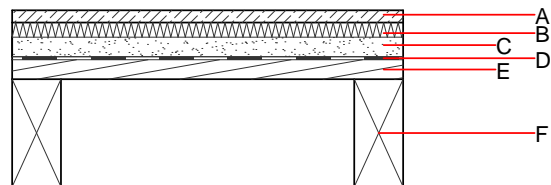
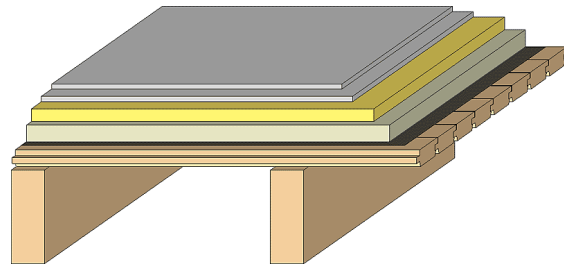
Calculated by HFA

Acoustic performance $R_w (C; C_{tr})$ 57(-3;-10) dB
 $L_{n,w} (C_i)$ 59(1)

Assessed by TGM

Assessed by Müller-BBM

Mass per unit area m 123.50 kg/m^2



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 |
|---|-----------|---|---------------------|-----------------|--------|-------|---------------------|
| | | | λ | μ min – max | ρ | c | |
| A | 25.0 | dry screed | 0.210 | 8 | 900 | 1.050 | A1 |
| B | 30.0 | impact sound absorbing subflooring MW-T | 0.035 | 1 | 68 | 1.030 | A1 |
| C | 40.0 | fill | 0.700 | 1 | 1800 | 1.000 | A1 |
| D | | trickling protection | | | | | E |
| E | 40.0 | planking spruce wood tongue and groove fire resistant planking | 0.120 | 50 | 450 | 1.600 | D |
| F | | construction timber floor joists (in acc. with structural design) | 0.120 | 50 | 450 | 1.600 | D |

Sustainability rating (per m^2)

Database ecoinvent

$OI3_{Kon}$ 16.3

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials kg 33.260
Biogenic carbon in $\text{kg CO}_2\text{-e}$. kg CO_2 48.590
Energy use of Primary Energy MJ 503.980
Share of renewable PE % 30.22

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 | | 0.086 | 0.038 | 1,69E-6 | 0.020 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 96.138 | 484.789 | 580.926 | 293.646 | 3.822 | 297.468 |

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 | | 0.083 | 0.014 | 8,90E-7 | 0.010 | |
| C1 - C4 | | 0.012 | 0.003 | 8,28E-8 | 0.001 | |
| A1 - C4 | | 0.095 | 0.017 | 9,73E-7 | 0.012 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 149.271 | 575.356 | 724.554 | 319.432 | 34.226 | 353.794 |
| C1 - C4 | 3.046 | -574.526 | -571.481 | 32.002 | -0.146 | 31.856 |
| A1 - C4 | 152.318 | 0.830 | 153.074 | 351.664 | 34.080 | 385.881 |