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Designation: gdrnxa05b-12
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, PLB

# Intermediate floor - gdrnxa05b-12

intermediate floor, timber frame construction, suspended, wet, without filling, other surface

## Performance rating

**Fire protection performance** — **REI** — 60

maximum span = 5 m; maximum load $E_{d,fi}$ = 3,66 kN/m² (without floor construction and 12mm OSB; with ceiling beam 80/200)
Classified by HFA
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**Germany**

F60

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 4

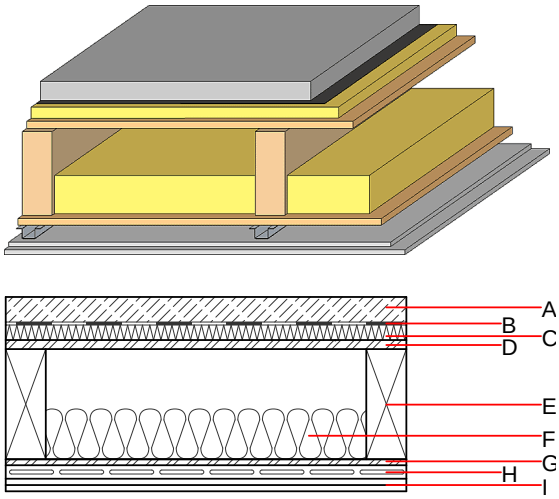
**Thermal performance** — **U**
**Diffusion** — suitable

**Acoustic performance** — $R_w$ ($C;C_{tr}$) — 59(-1;-7) dB
$L_{n,w}$ ($C_I$) — 60(0)

Assessed by Müller-BBM

**Mass per unit area** — **m** — 172.30 kg/m²

Calculation based on gypsum plaster board type DF




## 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 | 50.0 | anhydrite screed or cement screed | 0.700 | 10 | 2200 | 1.300 | A1 |
| B | | plastic separation layer | 0.200 | 100000 | 1400 | 1.400 | E |
| C | 30.0 | impact sound absorbing subflooring MW-T | 0.035 | 1 | 68 | 1.030 | A1 |
| D | 22.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| E | 240.0 | construction timber (80/..; e=625) | 0.120 | 50 | 450 | 1.600 | D |
| F | 100.0 | Cellulose fibre [040; 50] | 0.040 | 1 | 50 | 2.000 | E |
| G | 12.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| H | 27.0 | resilient channel | | | | | |
| I | 25.0 | gypsum plaster board type DF (2x12,5 mm) or | 0.250 | 10 | 800 | 1.050 | A2 |
| I | 25.0 | gypsum fibre board (2x12,5 mm) | 0.320 | 21 | 1000 | 1.100 | A2 |

## Sustainability rating (per m²)

**Database ecoinvent**

$OI3_{Kon}$ — 40.4

Calculated by HFA

**Database GaBi (ÖKOBAUDAT)**

| | | |
|---|---|---|
| **Built-in renewable materials** | **kg** | 41.210 |
| **Biogenic carbon in kg $CO_2$-e.** | **kg $CO_2$** | 60.730 |
| **Energy use of Primary Energy** | **MJ** | 755.050 |
| **Share of renewable PE** | **%** | 22.28 |

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 | | 0.169 | 0.079 | 3,00E-6 | 0.031 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|---|---|---|---|---|---|---|
| A1 - A3 | 137.973 | 627.123 | 765.096 | 601.595 | 28.395 | 629.990 |

**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 | | 0.138 | 0.021 | 7,76E-7 | 0.032 | |
| C1 - C4 | | 0.011 | 0.006 | 9,02E-8 | 0.001 | |
| A1 - C4 | | 0.155 | 0.028 | 8,81E-7 | 0.033 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|---|---|---|---|---|---|---|
| A1 - A3 | 166.316 | 697.113 | 864.678 | 562.673 | 29.740 | 592.561 |
| C1 - C4 | 1.161 | -613.987 | -611.688 | 13.508 | -14.486 | 14.622 |
| A1 - C4 | 168.237 | 83.644 | 254.752 | 586.812 | 15.358 | 626.059 |