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Designation: gdrnxa10a-00
Last updated: 8/2/23
Source: Holzforschung Austria
Editor: HFA, SP

# Intermediate floor - gdrnxa10a-00

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

## Performance rating

**Fire protection performance** — **REI** — 30

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

**Germany**

F30

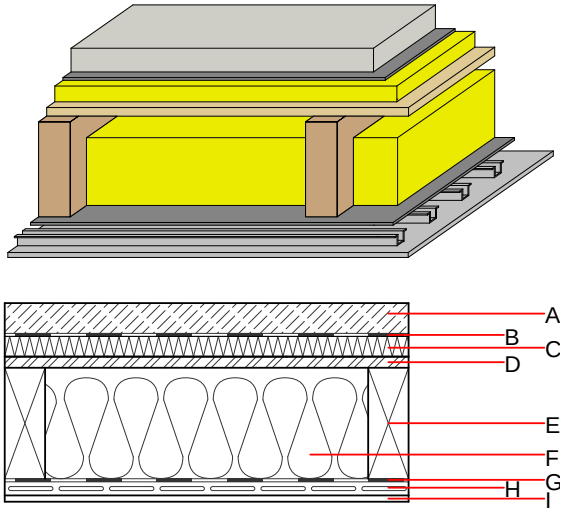
Load $E_{d,fi}$ according to the German certification document

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

| | | |
|---|---|---|
| **Thermal performance** | **U** | |
| | **Diffusion** | suitable |
| **Acoustic performance** | **$R_w$ ($C_i$;$C_{tr}$)** | 67(-1;-6) dB |
| | **$L_{n,w}$ ($C_I$)** | 51(2) |

Assessed by Müller-BBM

| | | |
|---|---|---|
| **Mass per unit area** | **m** | 170.10 kg/m² |




## 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 | 60.0 | anhydrite screed or cement screed | 0.700 | 10 | 2200 | 1.300 | A1 |
| B | 0.2 | plastic separation layer | 0.200 | 100000 | 1400 | 1.400 | E |
| C | 40.0 | impact sound absorbing subflooring MW [s' =7 MN/m²] | 0.033 | 1 | 30 | 0.030 | 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 | 200.0 | mineral wool [040; 11; <1000°C] | 0.040 | 1 | 11 | 1.030 | A1 |
| G | 0.2 | trickling protection | | | | | E |
| H | 27.0 | resilient channel | 0.156 | | | | |
| I | 12.5 | gypsum plaster board type DF | 0.250 | 10 | 800 | 1.050 | A2 |

## Sustainability rating (per m²)

**Database ecoinvent**

| | |
|---|---|
| **$OI3_{Kon}$** | 46.2 |

Calculated by HFA

**Database GaBi (ÖKOBAUDAT)**

| | | |
|---|---|---|
| **Built-in renewable materials** | **kg** | 24.490 |
| **Biogenic carbon in kg $CO_2$-e.** | **kg $CO_2$** | 36.880 |
| **Energy use of Primary Energy** | **MJ** | 690.820 |
| **Share of renewable PE** | **%** | 19.20 |

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 | | 0.182 | 0.089 | 3,09E-6 | 0.031 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|---|---|---|---|---|---|---|
| A1 - A3 | 116.699 | 466.453 | 583.152 | 634.604 | 23.545 | 658.149 |

**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 | | 0.172 | 0.024 | 8,99E-7 | 0.026 | |
| C1 - C4 | | 0.011 | 0.005 | 5,24E-8 | 0.001 | |
| A1 - C4 | | 0.188 | 0.031 | 9,61E-7 | 0.026 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|---|---|---|---|---|---|---|
| A1 - A3 | 131.390 | 430.310 | 562.610 | 542.170 | 34.460 | 576.750 |
| C1 - C4 | 0.850 | -423.100 | -420.880 | 9.510 | -9.390 | 18.840 |
| A1 - C4 | 132.630 | 7.470 | 142.960 | 558.190 | 25.130 | 611.910 |