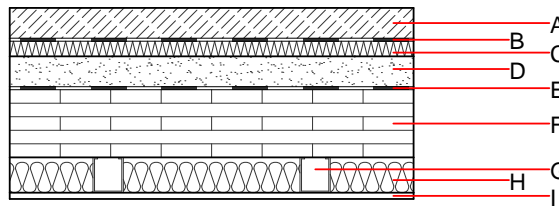
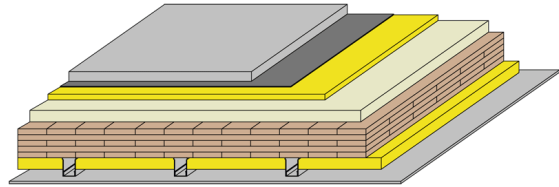


### Intermediate floor - gdmnx02a-01

intermediate floor, solid wood construction, suspended, wet, with filling, other surface

#### Performance rating

|   |                  |                                      |
|---|------------------|--------------------------------------|
| <b>Fire protection performance</b>  | REI              | 60                                   |
| maximum span = 5 m; maximum load $E_{d,fi} = 5 \text{ kN/m}^2$<br>Classified by HFA |                  |                                      |
| <b>Thermal performance</b>  | U                | 0.25 $\text{W}/(\text{m}^2\text{K})$ |
|   | Diffusion        | suitable                             |
| Calculated by HFA   |                  |                                      |
| <b>Acoustic performance</b>   | $R_w (C;C_{tr})$ | 57 dB                                |
|   | $L_{n,w} (C_i)$  | 56                                   |
| Assessed by TU-GRAZ   |                  |                                      |
| <b>Mass per unit area</b>   | m                | 313.00 $\text{kg}/\text{m}^2$        |
| 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 EN |
|---|-----------|--|---------------------|-------------------------|--------|-------|---------------------|
|   |           |  | $\lambda$           | $\mu \text{ min - max}$ | $\rho$ | c     |                     |
| A | 60.0      | cement screed or anhydrite screed  | 1.330               | 50 - 100                | 2000   | 1.080 | A1                  |
| B |           | plastic separation layer   | 0.200               | 100000                  | 1400   | 1.400 | E                   |
| C | 30.0      | impact sound absorbing subflooring MW-T [ $s' = 10 \text{ MN}/\text{m}^3$ ]        | 0.033               | 1                       | 70     | 1.030 | A1                  |
| D | 60.0      | bonded chippings   | 0.700               | 1                       | 1800   | 1.000 | A1                  |
| E |           | trickling protection   |                     |                         |        |       | E                   |
| F | 140.0     | cross laminated timber $\geq 140,0$ ; at least 5-layers, top layer at least 26 mm) | 0.130               | 50                      | 500    | 1.600 | D                   |
| G | 70.0      | acoustic hanger (suspension); $e=410$  |                     |                         |        |       |                     |
| H | 60.0      | mineral wool [040; 20]   | 0.040               | 1                       | 20     | 1.030 | A2                  |
| I | 12.5      | gypsum plaster board type DF or  | 0.250               | 10                      | 800    | 1.050 | A2                  |
| I | 12.5      | gypsum fibre board   | 0.320               | 21                      | 1000   | 1.100 | A2                  |

#### Sustainability rating (per $\text{m}^2$ )

##### Database ecoinvent

$OI3_{Kon}$  59.6

calculated with gypsum plaster fire protection board (GKF/DF); this data includes 3-, 5-, and 7-ply cross laminated timber elements;  
 Calculated by HFA

**Details of sustainability rating**

Database ecoinvent

| Lifecycle<br>(Phases) | GWP<br>[kg CO <sub>2</sub> -e.] | AP<br>[kg SO <sub>2</sub> -e.] | EP<br>[kg PO <sub>4</sub> -e.] | ODP<br>[kg R11-e.] | POCP<br>[kg Ethen-e.] |  |
|-----------------------|---------------------------------|--------------------------------|--------------------------------|--------------------|-----------------------|--|
| A1 - A3               |                                 | 0.263                          | 0.121                          | 4,48E-6            | 0.066                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 62.425       | 957.600      | 1020.025     | 899.689       | 31.697        | 931.386       |