

## Internal wall - iwmxo01 b-00

internal wall, solid wood construction, without dry lining, other surface

### Performance rating

**Fire protection performance** REI 90

maximum ceiling height = 3 m; maximum load  $E_{d,fi} = 32,0 \text{ kN/m}$   
 Classified by MA39  
 Classified by HFA

#### Germany

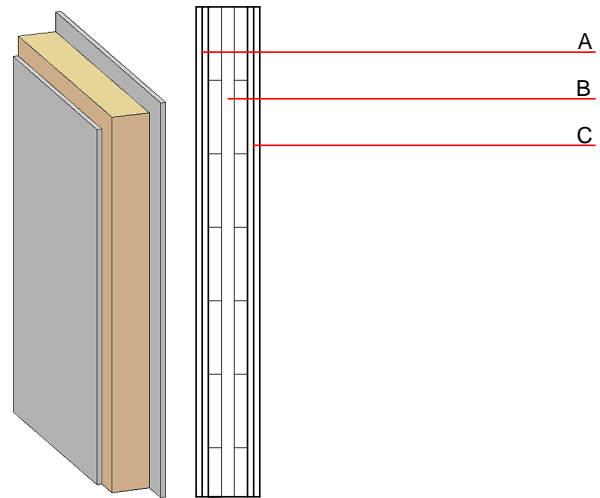
REI60  
 Load  $E_{d,fi}$  according to the German certification document  
 Corresponding proof: manufacturer-specific

**Acoustic performance**  $R_w (C; C_{tr})$  38(-2;-5) dB  
 $L_{n,w} (C_i)$

Assessed by TU-GRAZ  
 Assessed by Müller-BBM

**Mass per unit area** m 79.00 kg/m<sup>2</sup>

Calculation based on gypsum plaster board type DF



**Note:** The fire resistance is only valid when wall is used as partition with only one side exposed to fire.

### 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 |
|---|-----------|--|---------------------|-----------------|--------|-------|---------------------|
|   |           |  | $\lambda$           | $\mu$ min – max | $\rho$ | c     |                     |
| A | 25.0      | gypsum plaster board type DF (2x... mm) or   | 0.250               | 10              | 800    | 1.050 | A2                  |
| A | 25.0      | gypsum fibre board (2x...mm)   | 0.320               | 21              | 1000   | 1.100 | A2                  |
| B | 78.0      | solid glued wood (e.g. cross laminated timber: thickness $\geq 78\text{mm}$ ; 3-ply at least, surface layer at least 25mm) | 0.130               | 50              | 500    | 1.600 | D                   |
| C | 25.0      | gypsum plaster board type DF (2x...mm) or  | 0.250               | 10              | 800    | 1.050 | A2                  |
| C | 25.0      | gypsum fibre board (2x...mm)   | 0.320               | 21              | 1000   | 1.100 | A2                  |

### Sustainability rating (per m<sup>2</sup>)

#### Database ecoinvent

$OI3_{kon}$  22.2

Calculated by HFA

#### Database GaBi (ÖKOBAUDAT)

|  |                    |         |
|--|--------------------|---------|
| <b>Built-in renewable materials</b>            | kg                 | 38.170  |
| <b>Biogenic carbon in kg CO<sub>2</sub>-e.</b> | kg CO <sub>2</sub> | 54.950  |
| <b>Energy use of Primary Energy</b>            | MJ                 | 541.040 |
| <b>Share of renewable PE</b>                   | %                  | 31.59   |

Calculated by TUM

**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               |                                 | 0.102                          | 0.044                          | 2,45E-6            | 0.030                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 27.800       | 533.520      | 561.320      | 412.845       | 13.401        | 426.246       |

**Database GaBi (ÖKOBAUDAT)**

| 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               |                                 | 0.061                          | 0.013                          | 2,00E-6            | 0.011                 |  |
| C1 - C4               |                                 | 0.004                          | 0.001                          | 1,75E-7            | 0.000                 |  |
| A1 - C4               |                                 | 0.071                          | 0.015                          | 2,20E-6            | 0.012                 |  |

| Lifecycle<br>(Phases) | PERE<br>[MJ] | PERM<br>[MJ] | PERT<br>[MJ] | PENRE<br>[MJ] | PENRM<br>[MJ] | PENRT<br>[MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3               | 168.914      | 667.316      | 834.670      | 331.908       | 9.665         | 341.136       |
| C1 - C4               | 0.488        | -646.620     | -646.132     | 17.299        | 0.000         | 17.299        |
| A1 - C4               | 170.919      | 21.732       | 191.091      | 370.124       | 9.873         | 379.560       |