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Designation: Last updated: Source: Editor: awrhhi12a-06 8/2/23 Holzforschung Austria HFA, PLB

## External wall - awrhhi12a-06

external wall, timber frame construction, ventilated, with dry lining, with cladding, other surface

### Performance rating

| Fire protection<br>performance  | REI from inside<br>REI from outside                                       | 30<br>30                              |  |  |  |  |  |  |
|---|---|---------------------------------------|--|--|--|--|--|--|
| maximum ceiling height = 3 m; maximum load E <sub>d,fi</sub> = 32 kN∕m<br>Classified by HFA |   |                                       |  |  |  |  |  |  |
| Germany   |   |                                       |  |  |  |  |  |  |
| F30 (from inside/from outside)  |   |                                       |  |  |  |  |  |  |
| Load E <sub>d,fi</sub> according to the   | Load E <sub>d.fi</sub> according to the German certification document     |                                       |  |  |  |  |  |  |
| Corresponding proof: DIN  | 4102-4:2016-05, Tabel   | le 10.7, Zeile 1                      |  |  |  |  |  |  |
| Thermal performance   | U<br>Diffusion  | 0.15 W∕(m <sup>2</sup> K)<br>suitable |  |  |  |  |  |  |
| Calculated by TUM   |   |                                       |  |  |  |  |  |  |
| Acoustic performance  | R <sub>w</sub> (C;C <sub>tr</sub> )<br>L <sub>n,w</sub> (C <sub>l</sub> ) | 54(-1;-6) dB                          |  |  |  |  |  |  |
| Assessed by Müller-BBM  |   |                                       |  |  |  |  |  |  |
| Mass per unit area  | m   | 70.30 kg/m <sup>2</sup>               |  |  |  |  |  |  |



## Register of building materials used for this application, cross-section (from outside to inside, dimensions in mm)

|   | Thickness | Building material                                      | Thermal per | Reaction to fire |      |       |    |
|---|-----------|--|-------------|------------------|------|-------|----|
|   |           |  | λ           | µ min – max      | ρ    | с     | EN |
| А | 24.0      | larch wood external wall cladding                      | 0.155       | 150              | 600  | 1.600 | D  |
| В | 30.0      | larch wood battens offset (30/50; 30/80) - ventilation | 0.155       | 150              | 600  | 1.600 | D  |
| С |           | wind barrier   |             |                  | 1000 |       |    |
| D | 15.0      | fibreboard (MDF)                                       | 0.140       | 11               | 600  | 1.700 | D  |
| Е | 240.0     | construction timber (60/; e=625)                       | 0.120       | 50               | 450  | 1.600 | D  |
| F | 240.0     | mineral wool [040; 30; ≥1000°C]                        | 0.040       | 1                | 30   | 1.030 | A1 |
| G | 15.0      | OSB  | 0.130       | 200              | 600  | 1.700 | D  |
| Η | 40.0      | spruce wood cross battens (a=400) $\ge$ 40mm           | 0.120       | 50               | 450  | 1.600 | D  |
| I | 40.0      | mineral wool [040; 30; ≥1000°C]                        | 0.040       | 1                | 30   | 1.030 | A1 |
| J | 12.0      | OSB  | 0.130       | 200              | 600  | 1.700 | D  |
| К | 12.5      | gypsum plaster board type A                            | 0.250       | 4 - 10           | 680  | 1.050 | A2 |

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

| Database ecoinvent                      |      | Database GaBi (ÖKOBAUDAT)  |                                     |                                      |  |  |
|---|------|--|-------------------------------------|--------------------------------------|--|--|
| OI3 <sub>Kon</sub><br>Calculated by TUM | 49.1 | Built-in renewable materials<br>Biogenic carbon in kg CO <sub>2</sub> -e.<br>Energy use of Primary Energy<br>Share of renewable PE | kg<br>kg CO <sub>2</sub><br>MJ<br>% | 55.770<br>81.710<br>820.200<br>29.34 |  |  |

dataholz.eu – Catalogue of timber building materials, components and component connections reviewed to consider thermal, acoustic, fire performance requirements and ecological drivers for timber construction released by accredited testing institutes. These datasheets will generally be accepted as proofs of compliance by building authorities.

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### Details of sustainability rating

#### Database ecoinvent

| Lifecycle | GWP                      | AP                       | EP                       | ODP         | POCP          |         |
|-----------|--------------------------|--------------------------|--------------------------|-------------|---------------|---------|
| (Phases)  | [kg CO <sub>2</sub> -e.] | [kg SO <sub>2</sub> -e.] | [kg PO <sub>4</sub> -e.] | [kg R11-e.] | [kg Ethen-e.] |         |
| A1 - A3   |                          | 0.263                    | 0.076                    | 2,44E-6     | 0.049         |         |
|           |                          |                          |                          |             |               |         |
| Lifecycle | PERE                     | PERM                     | PERT                     | PENRE       | PENRM         | PENRT   |
| (Phases)  | [MJ]                     | [M]                      | [LM]                     | [LM]        | [MJ]          | [LM]    |
| A1 - A3   | 126.796                  | 865.840                  | 992.636                  | 590.956     | 48.370        | 639.326 |

#### Database GaBi (ÖKOBAUDAT)

| Lifecycle | GWP                      | AP                       | EP                       | ODP         | POCP          |         |
|-----------|--------------------------|--------------------------|--------------------------|-------------|---------------|---------|
| (Phases)  | [kg CO <sub>2</sub> -e.] | [kg SO <sub>2</sub> -e.] | [kg PO <sub>4</sub> -e.] | [kg R11-e.] | [kg Ethen-e.] |         |
| A1 - A3   |                          | 0.156                    | 0.026                    | 1,95E-6     | 0.035         |         |
| C1 - C4   |                          | 0.003                    | 0.003                    | 1,11E-7     | 0.000         |         |
| A1 - C4   |                          | 0.161                    | 0.029                    | 2,08E-6     | 0.035         |         |
|           |                          |                          |                          |             |               |         |
| Lifecycle | PERE                     | PERM                     | PERT                     | PENRE       | PENRM         | PENRT   |
| (Phases)  | [LM]                     | [MJ]                     | [MJ]                     | [LM]        | [MJ]          | [LM]    |
| A1 - A3   | 239.099                  | 950.156                  | 1189.416                 | 558.803     | 40.582        | 599.500 |
| C1 - C4   | 1.184                    | -944.305                 | -943.122                 | 13.944      | -26.497       | -12.550 |
| A1 - C4   | 240.673                  | 6.110                    | 246.943                  | 579.522     | 14.137        | 593.770 |