

Compartment wall - twrxxo07a-06

compartment wall, timber frame construction, without dry lining, double-layer, other surface

Performance rating

Fire protection performance REI 60

apply to each individual load-bearing wall; the whole wall: EI90; maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 19,2 kN/m

Classified by HFA

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Germany

F60

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

Corresponding proof: manufacturer-specific

Thermal performance U Diffusion 0.19 W/(m²K) suitable

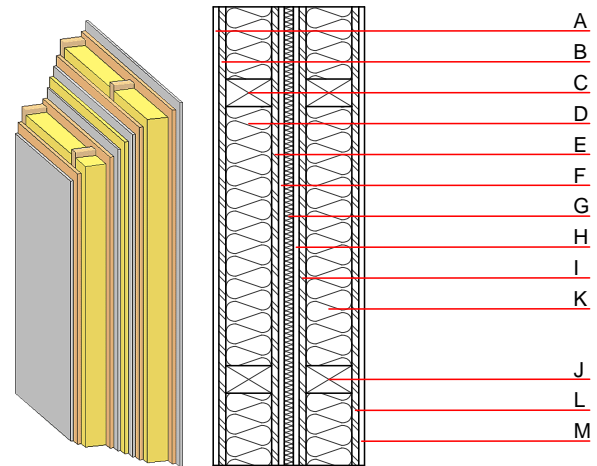
Calculated by TUM

Acoustic performance R_w ($C; C_{tr}$) 59(-2;-9) dB
 $L_{n,w}$ (C_i)

Assessed by Müller-BBM

Mass per unit area m 97.00 kg/m²

Calculation based on gypsum plaster board type DF



Note: e=625

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 |
|---|-----------|---|---------------------|-----------------|--------|-------|---------------------|
| | | | λ | μ min – max | ρ | c | |
| A | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| A | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |
| B | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| C | 100.0 | construction timber (60/100; e=*) | 0.120 | 50 | 450 | 1.600 | D |
| D | 100.0 | Cellulose fibre [040; 50] | 0.040 | 1 | 50 | 2.000 | E |
| E | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| F | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| F | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |
| G | 20.0 | mineral wool [040; ≥ 16 ; <1000°C] | 0.040 | 1 | 16 | 1.030 | A1 |
| H | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| H | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |
| I | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| J | 100.0 | construction timber (60/100; e=*) | 0.120 | 50 | 450 | 1.600 | D |
| K | 100.0 | Cellulose fibre [040; 50] | 0.040 | 1 | 50 | 2.000 | E |
| L | 15.0 | OSB | 0.130 | 200 | 600 | 1.700 | D |
| M | 12.5 | gypsum plaster board type DF or | 0.250 | 10 | 800 | 1.050 | A2 |
| M | 12.5 | gypsum fibre board | 0.320 | 21 | 1000 | 1.100 | A2 |

Sustainability rating (per m²)

Database ecoinvent

O13_{Kon} 30.4
 Calculated by HFA

Database GaBi (ÖKOBAUDAT)

| | | |
|--|--------------------|---------|
| Built-in renewable materials | kg | 58.520 |
| Biogenic carbon in kg CO₂-e. | kg CO ₂ | 85.790 |
| Energy use of Primary Energy | MJ | 899.880 |
| Share of renewable PE | % | 23.74 |

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 | | 0.146 | 0.060 | 3,05E-6 | 0.027 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 161.625 | 844.655 | 1006.280 | 534.258 | 43.364 | 577.622 |

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 | | 0.120 | 0.019 | 6,08E-7 | 0.045 | |
| C1 - C4 | | 0.008 | 0.008 | 1,29E-7 | 0.001 | |
| A1 - C4 | | 0.134 | 0.029 | 7,66E-7 | 0.047 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 210.261 | 972.227 | 1183.302 | 644.568 | 29.150 | 673.810 |
| C1 - C4 | 1.820 | -785.630 | -783.813 | 20.795 | -25.382 | -4.590 |
| A1 - C4 | 213.598 | 187.633 | 402.042 | 686.280 | 3.976 | 690.350 |