

Internal wall - iwrxxo01b-08

internal wall, timber frame construction, without dry lining, other surface

Performance rating

Fire protection performance REI 60

maximum ceiling height = 3 m; maximum load $E_{d,fi}$ = 50 kN/m

Classified by HFA

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Germany

F30/F60 (depending on the corresponding proof)

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

Corresponding proof: F30: DIN 4102-4:2016-05, Tabelle 10.5, Zeile 5; F60:

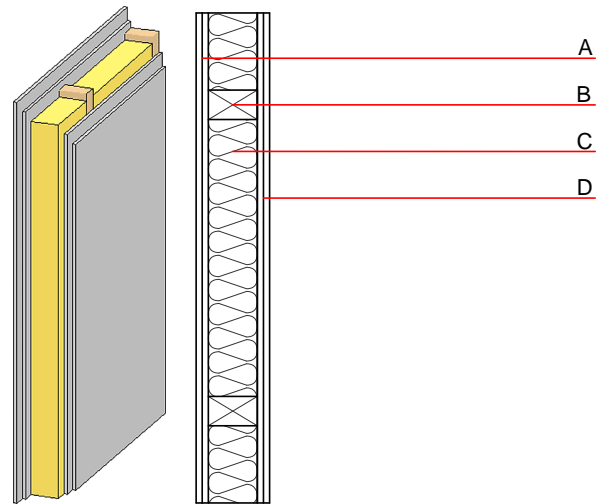
DIN 4102-4:2016-05, Tabelle 10.5, Zeile 10 (if gypsum plaster board type DF or gypsum fibre board 15 mm inside) or manufacturer-specific

Acoustic performance R_w (C; C_{tr}) 43(-1;5) dB
 $L_{n,w}$ (C_i)

Assessed by Müller-BBM

Mass per unit area m 48.40 kg/m²

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.
 (B=60/100); 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 | |
|---|-----------|---|---------------------|-----------------|--------|-------|------------------|--|
| | | | λ | μ min – max | ρ | c | EN | |
| A | 25.0 | gypsum plaster board type DF (2x12,5 mm) or | 0.250 | 10 | 800 | 1.050 | A2 | |
| A | 25.0 | gypsum fibre board (2x12,5 mm) | 0.320 | 21 | 1000 | 1.100 | A2 | |
| B | 100.0 | construction timber (60/100 or 60/160; e=*) | 0.120 | 50 | 450 | 1.600 | D | |
| C | 100.0 | Wood fibre insulation [039; 45] | 0.039 | 1 - 2 | 45 | 2.100 | E | |
| D | 25.0 | gypsum plaster board type DF (2x12,5 mm) or | 0.250 | 10 | 800 | 1.050 | A2 | |
| D | 25.0 | gypsum fibre board (2x12,5 mm) | 0.320 | 21 | 1000 | 1.100 | A2 | |

Sustainability rating (per m²)

Database ecoinvent

OI3_{Kon} 13.1

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

| | | |
|---|--------------------|---------|
| Built-in renewable materials | kg | 10.610 |
| Biogenic carbon in kg CO ₂ -e. | kg CO ₂ | 14.270 |
| Energy use of Primary Energy | MJ | 246.820 |
| Share of renewable PE | % | 19.70 |

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 | | 0.045 | 0.021 | 1,51E-6 | 0.008 | |

| Lifecycle (Phases) | PERE [MJ] | PERM [MJ] | PERT [MJ] | PENRE [MJ] | PENRM [MJ] | PENRT [MJ] |
|-----------------------|--------------|--------------|--------------|---------------|---------------|---------------|
| A1 - A3 | 37.950 | 192.537 | 230.487 | 235.032 | 6.584 | 241.617 |