Intermediate floor - gdrnxa05a-10

intermediate floor, timber frame construction, suspended, wet, without filling, other surface

Performance rating

Fire protection performance	**REI**	30

maximum span = 5 m; maximum load $E_{d,fi}$ = 2,62 kN/m² (without floor construction and 12mm OSB; with ceiling beam 60/200)
Classified by HFA
Classified by HFA

Germany

F30

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

Corresponding proof: DIN 4102-4:2016-05, Tabelle 10.12, Zeile 1

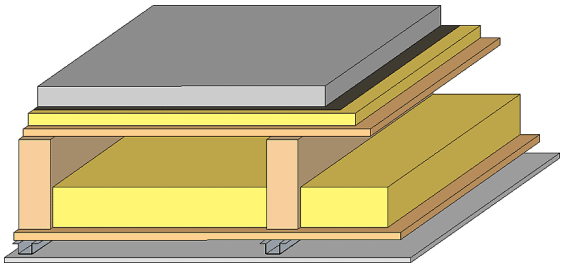
Thermal performance	**U**	
	Diffusion	suitable

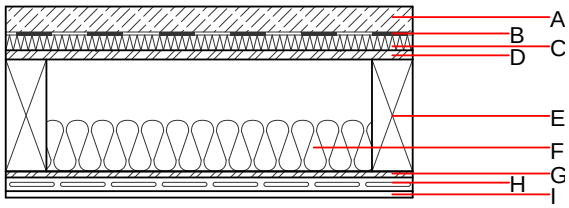
Acoustic performance	**R_w ($C;C_{tr}$)**	58(-1;-7) dB
	$L_{n,w}$ (C_I)	61(0)

Assessed by Müller-BBM

Mass per unit area	**m**	158.10 kg/m²

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
			λ	μ min – max	ρ	c	EN
A	50.0	anhydrite screed	0.700	10	2200	1.300	A1
B		plastic separation layer	0.200	100000	1400	1.400	E
C	30.0	impact sound absorbing subflooring MW-T	0.035	1	68	1.030	A1
D	18.0	OSB	0.130	200	600	1.700	D
E	220.0	construction timber (80/..; e=625)	0.120	50	450	1.600	D
F	100.0	Wood fibre insulation [039; 45]	0.039	1 - 2	45	2.100	E
G	12.0	OSB	0.130	200	600	1.700	D
H	27.0	resilient channel					
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 m²)

Database ecoinvent

$OI3_{Kon}$	38.2

Calculated by HFA

Database GaBi (ÖKOBAUDAT)

Built-in renewable materials	**kg**	36.680
Biogenic carbon in kg CO_2-e.	**kg CO_2**	54.940
Energy use of Primary Energy	**MJ**	894.300
Share of renewable PE	**%**	27.33

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		0.158	0.076	2,72E-6	0.029	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	127.914	595.135	723.050	568.172	32.259	600.431

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		0.148	0.024	7,61E-7	0.034	
C1 - C4		0.009	0.002	5,72E-8	0.001	
A1 - C4		0.161	0.027	8,26E-7	0.034	

Lifecycle (Phases)	PERE [MJ]	PERM [MJ]	PERT [MJ]	PENRE [MJ]	PENRM [MJ]	PENRT [MJ]
A1 - A3	242.490	777.006	1020.623	629.572	42.522	672.230
C1 - C4	1.531	-771.086	-768.417	14.927	-28.210	2.316
A1 - C4	244.402	6.178	253.329	649.901	14.364	688.141