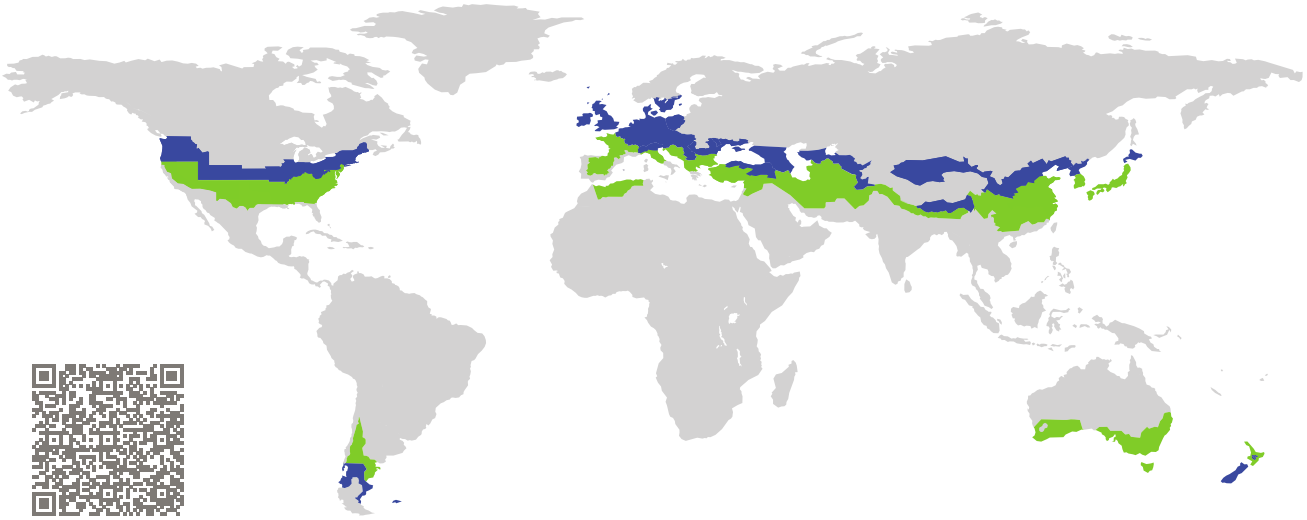
CERTIFICATE

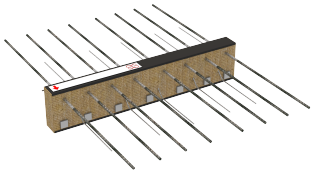
Certified Passive House Component

Component-ID 2152bc03 valid until 31st December 2025

Passive House Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany



Category:	**Balcony connection**
Construction type:	**Cantilevered**
Manufacturer:	**Max Frank GmbH & Co.KG, Leiblfing, Germany**
Product name:	**Egcobox**



This certificate was awarded based on the following criteria for the climate zone

Hygiene and comfort criterion

The mininum temperature factor of the interior surfaces is	$f_{Rsi=0.25\,m^2\,K/W} \geq$	0.86

Energy criterion

The linear thermal bridge loss coefficient is	$\Psi_{,WB} \leq$	0.25 W/(m K)

Efficiency criterion

The heat losses depending on the possible load bearing do not exceed	$Eff.t. \leq$	10.00 W/(kNmK)

cool, temperate climate

CERTIFIED COMPONENT
Passive House Institute

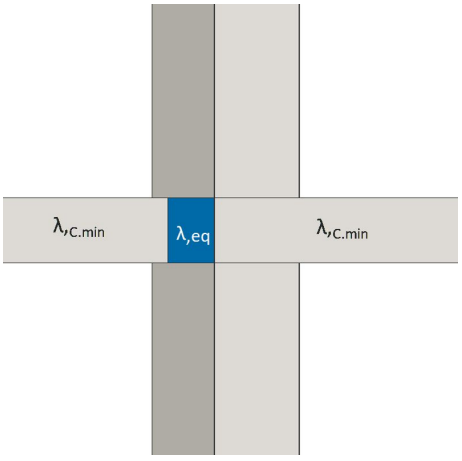
Max Frank GmbH & Co.KG
Mitterweg 1, 94339 Leiblfing, Germany
☎ +49 9427 189-0 | ✉ info@maxfrank.de | http://maxfrank.com |

Product	h [mm]	d [mm]	$\lambda_{,C.min}$ [W/(mK)]	$\lambda_{,eq}$ [W/(mK)]	$\Psi_{,WB}$ [W/(mK)]	$m_{Rd,y}$ [kNm/m]	f_{Rsi} [–]	Eff.t. [W/(kNmK)]	Efficiency class
MXL35-VS-C35-H160-REI120-SW	160	120	3.0	0.141	0.14570	-24.8	0.95	5.9	phB
MXL35-VS-C35-H180-REI120-SW	180	120	3.0	0.129	0.14874	-30.7	0.94	4.8	phB
MXL35-VS-C35-H200-REI120-SW	200	120	3.0	0.118	0.14937	-36.6	0.94	4.1	phB
MXL35-VS-C35-H220-REI120-SW	220	120	2.6	0.111	0.15081	-42.5	0.94	3.5	phB
MXL35-VS-C35-H250-REI120-SW	250	120	2.6	0.105	0.15944	-51.3	0.94	3.1	phB
MXL50-V1-C35-H160-REI120-SW	160	120	3.0	0.170	0.17131	-31.6	0.96	5.4	phB
MXL50-V1-C35-H180-REI120-SW	180	120	3.0	0.155	0.17494	-39.2	0.93	4.5	phB
MXL50-V1-C35-H200-REI120-SW	200	120	3.0	0.141	0.17536	-46.7	0.93	3.8	phB
MXL50-V1-C35-H220-REI120-SW	220	120	2.6	0.131	0.17529	-56.1	0.93	3.1	phB
MXL50-V1-C35-H250-REI120-SW	250	120	2.6	0.120	0.18044	-65.5	0.93	2.8	phA

* validated through 3D-FEM-Simulation

$\lambda_{,C.min}$	=	Min. conductivity reinf. concrete
$\lambda_{,eq}$	=	Equivalent conductivity balcony connection
$\Psi_{,WB}$	=	Linear thermal bridge coefficient
f_{Rsi}	=	Temperature-factor
Eff.t.	=	Efficiency-value
$m_{Rd,y}$	=	Design resistance

Using the equivalent thermal conductivity λ_{eq}, linear thermal bridge loss coefficients can be determined for other connection situations using 2D FEM simulations. The minimum thermal conductivity of the reinforced concrete $\lambda_{C.min}$ of the balcony is to be used for the cantilever slab and the false ceiling. The rectangular replacement geometry of the balcony connection element has the dimensions of height h and width d, as well as the thermal conductivity λ_{eq}.



Notice
The thermal bridge loss coefficients can be interpolated approximately linearly. Calculations and boundary conditions according to the criteria and algorithms “Certified Passive House Component – Balcony Connection, Version 2.1”