

# CERTIFICATE

Certified Passive House Component

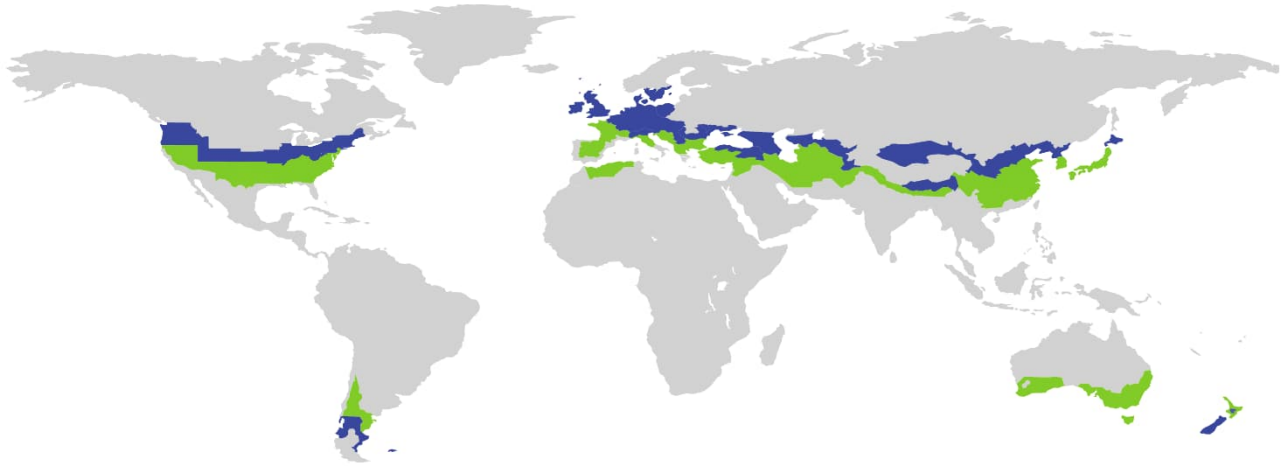
ID: 2454cc03 valid until 31. December 2026

Passive House Institute

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Category	Column connection
Manufacturer	Thermal Breaks Ltd
	CM23 4TR Bishops Stortford
	UNITED KINGDOM
Product name	TekTherm™ AK-FR

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

## Hygiene criterion

Temperature factor of opaque junctions

$$f_{Rsi=0.25m^2K/W} \geq 0.86$$

## Energy criterion

The thermal bridge coefficient is

$$X \leq X_{Max}$$



cool, temperate climate

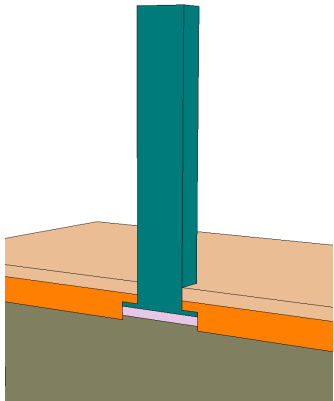
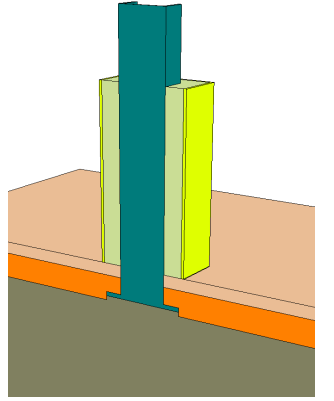
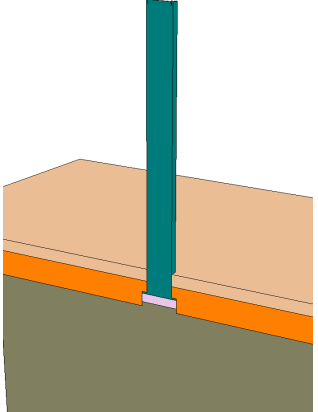
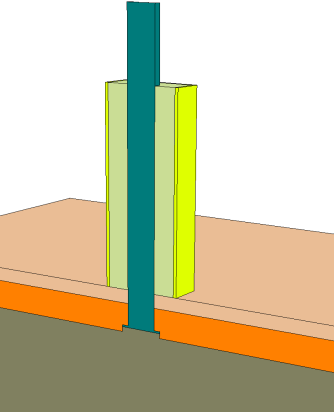


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## Determined values

TekTherm™ AK-FR	Steel column (HEB 260)	Reference flank-insulation
	Heat transfer coefficient floor slab	
	<b>0.246 W/(m²K)</b>	
	Thermal bridge coefficient X (5 cm)	
	<b>0.4601 W/K</b>	
	Thermal bridge coefficient $X_{Max}$ reference flank-insulation	
	<b>0.5727 W/K</b>	
	Thermal bridge coefficient without thermal separation	
	<b>0.8535 W/K</b>	
TekTherm™ AK-FR	Steel column (IPE 140)	Reference flank-insulation
	Heat transfer coefficient floor slab	
	<b>0.246 W/(m²K)</b>	
	Thermal bridge coefficient X (5 cm)	
	<b>0.1205 W/K</b>	
	Thermal bridge coefficient $X_{Max}$ reference flank-insulation	
	<b>0.1594 W/K</b>	
	Thermal bridge coefficient without thermal separation	
	<b>0.2046 W/K</b>	

### Application and explanatory notes

The TekTherm™ AK-FR structural thermal break element reduces the thermal bridge of steel columns penetrating the insulation layer above a floor slab. The values have been determined for a HEB 260 steel column and an IPE 140 steel column with a base plate and four anchoring bolts. The thermal separation element has a thermal conductivity of 0.22 W/(mK). The component is A2-s1-d0 fire rated.

### Note

The maximum point thermal bridge loss coefficient ( $X_{Max}$ ) for column connection situations corresponds to the point thermal bridge loss coefficient of the same construction with flank insulation (1.00 m length, 10 cm insulation thickness all round, thermal conductivity 0.035 W/(mK) without thermal separation element.

Calculations and boundary conditions according to the criteria and algorithms "Certified Passive House Components - Column and wall connection, Version 1.1"