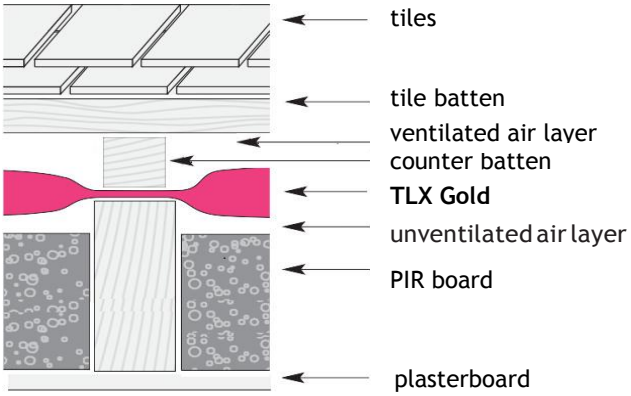
date
client
project
TLX ref

The 0.18 TLX Gold solution:
150mm rafters + 110mm PIR at 600 mm centres



- Fit 110mm PIR rigid board closely between the rafters ensuring that there is a minimum of 30mm space at the top of the rafters
- Fit TLX Gold taut across the rafters, creating an unventilated air gap between the underside and the PIR
- Secure 38mm x 38mm counterbattens vertically down the roof
- Fit tile battens, then tiles or slates

U = **0.18 W/m² K**

Building Regulation compliance

Approved Document L1A requires that a SAP rating be carried out for a new build. Depending on the energy performance of the various parts of the construction, the U value requirement for the roof insulation will be determined.

An extension will require a SAP calculation to be carried out if there is glazing that is more than 25% of the floor area. If not, then the required U value is 0.18 W/m² K. (0.15 W/m² K in Wales).

Condensation Risk see page 3 for detail

As shown, there is no risk of interstitial condensation with this detail and it complies with the standards set out on BS5250.

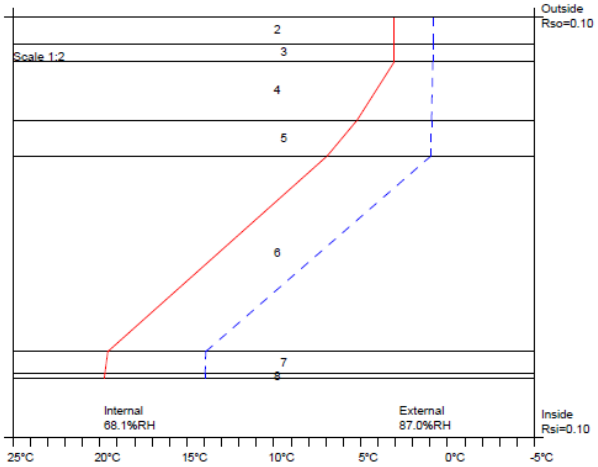
Guarantee

TLX Gold, when correctly installed, is guaranteed for 25 years and is backed by comprehensive product liability insurance.

Condensation risk analysis

		Interface Temp.	Dewpoint Temp.	Vapour Pressure (kPa)	Saturated V.P. (kPa)	Worst Cond. (g/m²)	Peak Buildup (g/m²)	Conden-sation
1	Outside surface resistance							
		3.1	0.9	0.65	0.76			No
2	Clay tiles (BS5250)							
		3.1	0.9	0.65	0.76			No
3	Ventilated air gap							
		3.1	0.9	0.65	0.76			No
4	TLX Gold							
		5.2	0.9	0.65	0.88			No
5	Unventilated air gap							
		6.9	0.9	0.65	1.00			No
6	PIR							
		19.5	13.9	1.59	2.27			No
7	Plasterboard							
		19.7	13.9	1.59	2.30			No
8	Plaster skim							
		19.7	14.0	1.59	2.30			No
8	Inside surface resistance							

Worst case internal / external conditions for graph : 20.0°C @ 68.1%RH / 2.8°C @ 87.0%RH



Well sealed ceiling

The condensation risk analysis given above shows that the temperature through the roof structure remains above the dew point, and there is no risk of interstitial condensation.

The calculation is based on the provision of a well-sealed ceiling, which prevents movement of warm moist air into the roof structure. It is essential when fitting TLX Gold to the outside of a roof structure, that action is also taken to improve the airtightness of the ceiling. A well-sealed ceiling requires the following:

- There should be no gaps in the internal lining of the ceiling, such as holes, cracks or gaps where services such as pipes or wires penetrate into the ceiling. Any gaps must be permanently sealed.
- The top of any cavity in a wall must be sealed.
- Loft hatches must have a compressed seal or draught excluder strip
- Recessed light fittings or down-lighters must incorporate a sealed box
- Edges of roof-lights should be permanently sealed.

U-value calculation

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	d (mm)	λ layer	λ bridge	fraction	R layer	R bridge
Rse					0.100 #	
Tiles (clay)	15	1.000				
Air layer ventilated	25	R-value				
TLX Gold taut +C/B	33	R-value	0.130	0.0630	0.850	0.254
Air layer unventilated	20	R-value	0.130	0.0780	0.680	0.154
PIR	110	0.022	0.130	0.0780	5.000	0.846
Plasterboard	12.5	0.190			0.066	
Rsi					0.100	
total	**216 mm** (total roof thickness)				**6.796**	

this resistance substitutes for Rse and the resistance of layers 5-6 because of the ventilated air layer (layer 5)

Total resistance: Upper limit: 5.738 Lower limit: 5.159 Average: 5.448 m²K/W

U-value (uncorrected): 0.184

U-value corrections

No fixings in layer 2

Air gaps in layer 2 ΔU = 0.000 (level 0)

Total ΔU	0.000
U-value (corrected)	0.184
U-value (rounded)	**0.18 W/m²K**

Contact

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