BrianIvor Roofing Ltd.
Flat Roofing & Rooflight Solutions

Thermal Break FAQ

What is a thermal break and how does it work in Metal Windows and Doors?

A thermal break (or thermal barrier) is a material of low thermal conductivity placed in an assembly to reduce or prevent the flow of thermal energy between conductive materials. More simply, a thermal break is basically a piece of material that is placed in the frame of a rooflight to minimise heat loss.

Why is a Thermal Break Important?

Thermal Break technology is important when it comes to metal framing systems as it separates the frame into two separate interior and exterior pieces joined with a less conductive material. This 'break' in the metal reduces temperature transfer across the framing system and ensures the system achieves modern thermal performance values.

What is the Relationship Between a Thermal Break and Thermal Performance?

If a metal frame does not have a thermal break in it you will experience high levels of heat loss through the framing. This will reduce the Uf value of the system (the thermal performance of the frame) and subsequently reduce the overall thermal performance of the window/door (the Uw value).

Where Should Thermally Broken Systems be Used?

For useable, warm environments a thermally broken system to all external framing is a must. Aside from the relevant Uw values required by modern building regulations, using a non-thermally broken framework to an internal space can lead to freezing on the internal framing in colder months and condensation build-up internally on the cold metal surfaces. This is particularly relevant when a rooflight is located over a room with high humidity, like a kitchen or bathroom, there is a chance that condensation will form on its frame if it doesn't have a thermal break installed. That's because the lack of thermal break leads to the aluminium frame being much colder than the humid air inside your home. As soon as the warmer air makes contact with the colder frame, condensation appears – it's something often referred to as 'cold bridging'.

Thermal Break and Performance- BI Rooflight Technology.

Our rooflight use a thermal break to ensure our rooflights retain maximum thermal performance. The upstand construct includes an insulated slab and insulation. In addition, we use silicone rubber between the conductive aluminium components of the frames and upstand and glass. The glazing unit further consists of thermal breakers such as spacers and argon gas between the triple glazing.

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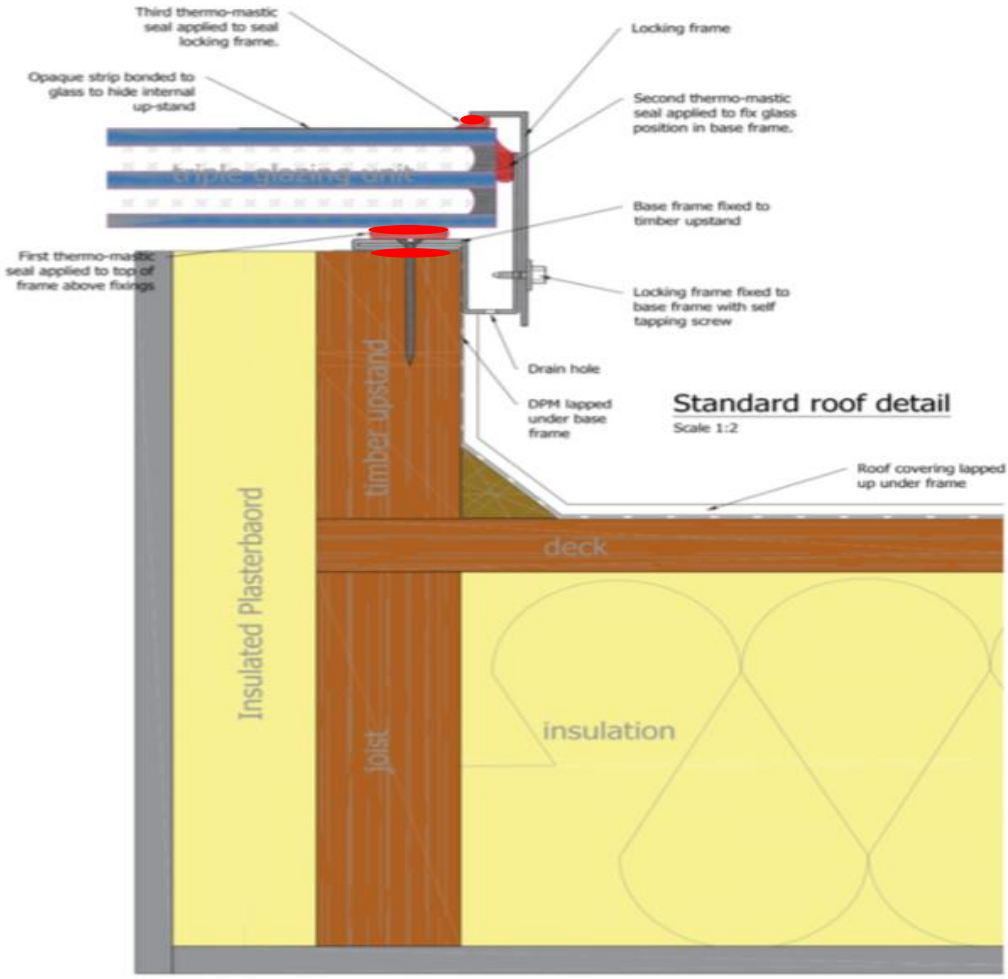
Third thermo-mastic seal applied to seal locking frame.
Opaque strip bonded to glass to hide internal up-stand
Locking frame
Second thermo-mastic seal applied to fix glass position in base frame.
Base frame fixed to timber upstand
First thermo-mastic seal applied to top of frame above fixings
Locking frame fixed to base frame with self tapping screw
Drain hole
DPM lapped under base frame
Standard roof detail
Scale 1:2
Roof covering lapped up under frame
timber upstand
deck
Insulated Plasterboard
joist
insulation