How do I model foil backed insulation blanket in BERS Pro?

Roofing blanket consists of a glasswool blanket adhered to a reinforced laminated foil facing. It is commonly used under metal roof sheeting with the reflective foil facing downwards for optimum thermal performance.

The blanket is available in a range of thicknesses and R-Values. The following table is an extract from "Bradford Insulation's Datasheet - Anticon Faced GW Blanket - 08/11" demonstrates the range of R-Values available.

Product ™	Material R-value See Note	Thickness (mm)
Anticon™ 55	R1.3	60
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Anticon™ 75	R1.8	80
Anticon™ 95	R2.3	100
Anticon™ 110	R2.5	110
Anticon™ 100 HP	R2.5	100
Anticon™ 120	R2.6	120
Anticon™ 125	R2.8	125
Anticon™ 130	R3.0	130
Anitcon™ 140	R3.3	140
Anticon™ 145	R3.6	145

The performance of the blanket is dependent on maintaining its thickness. For systems employing blanket with thicknesses greater than 100mm thick, proprietary spacer systems must be used.

In the example below, the foil backed blanket is installed over the roof battens/purlins and directly under the metal roof sheeting. There is no air gap between the foil backed blanket and the metal roof sheeting.
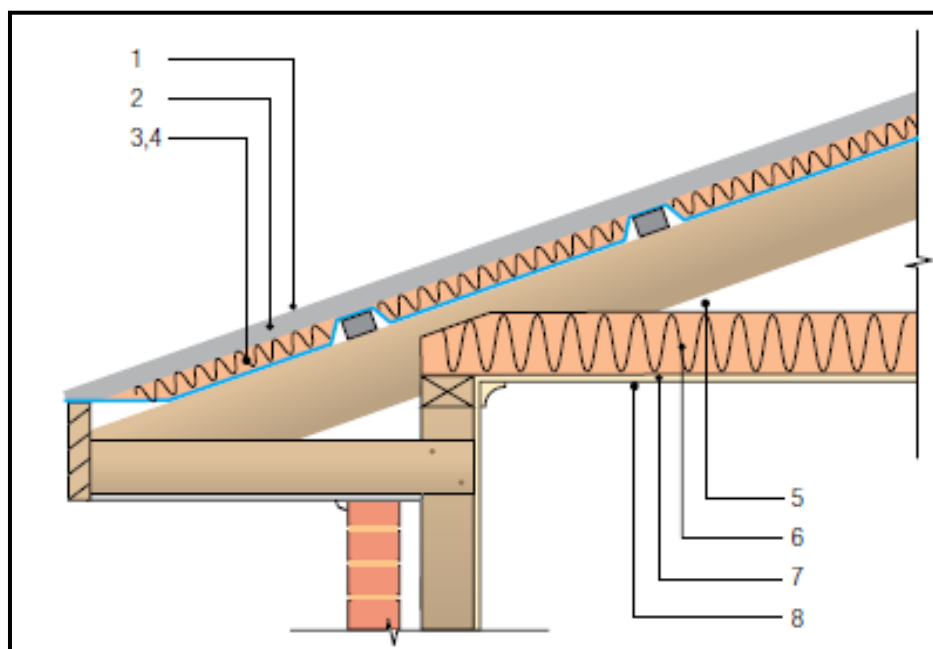
Source : ICANZ Insulation Handbook - Part 1: Thermal Performance - November 2010 - Page 15

The following example demonstrates how to best model metal roof sheeting with R1.3 blanket (60mm thick) under in BERS Pro V4.2 110811.

Step 1

Determine the total R-Value of the roof element only. NB. This does not include the ceiling element as it is modelled separately in BERS Pro.

Metal Roof Sheeting	*R0.00*
60mm foil backed blanket	*R1.30*
Total	***R1.30***

NB. The external and internal air film resistance values are added by BERS Pro in the background when simulating & reduction of the R-Value of the insulation due to the compression of the blanket over roof purlins/rafters is ignored at this time.

Step 2

Replicate the roof element including R1.3 foil faced blanket in BERS Pro.

- Press "DEF" button - sets default settings for building elements.
- Press "Roof" button - sets roof properties.
- Press "Type" - selects roof type.
- Select "Corrugated Iron".
- Press "Insulation" - selects added roof insulation
- Select "Bulk, Reflective Side Down Antiglare Up".
- Adiust slide bar for insulation to R1.0.
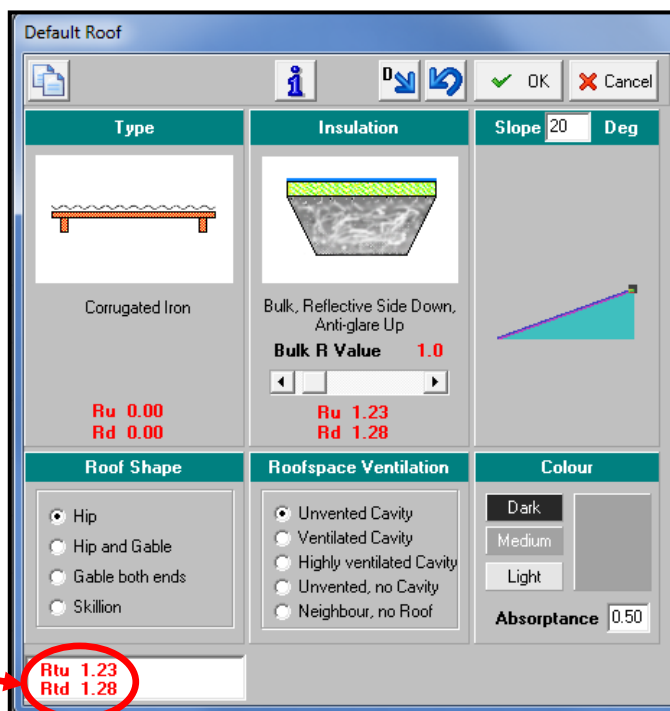
Total R-Value in BERS Pro must equal or be a close as possible to the Total R-Value calculated in Step 1

NB. The R-Value up and down is due to the inbuilt air gap assumed to exist between the upper surface of the blanket (antiglare foil) and the underside of the metal roof sheeting.