

## U-value calculator report

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**Project Reference:** IG-GRP

**Issued on Date:** 06/12/2012

**Project:**

**Type Ref:** Flat Bay Roof

Surveyor: Stephen Harpur, Tel: 028 8224 9693

Surveyor ID: B856-0001

Address: Drumlegagh Road South, Omagh, Tyrone, BT78 5PQ

Client: IG-GRP, 106

Software Version: Elmhurst Energy Systems SAP2009 Calculator (Design System) version 3.08r12

### Building Elements:

#### Roof Flat Bay Roof - 200mm Insulation

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness	Lambda	R	Fraction
<b>Ext surface</b>				0.040	
<b>Layer 1</b>	<b>GRP</b>				
	Main construction	3 mm	0.200	0.015	100.00 %
<b>Layer 2</b>	<b>Mineral wool quilt</b>				
	Main construction	200 mm	0.041	4.878	98.20 %
	Bridging - Timber	200 mm	0.130		1.80 %
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
<b>Layer 3</b>	<b>GRP</b>				
	Main construction	3 mm	0.200	0.015	100.00 %
<b>Layer 4</b>	<b>Plasterboard, standard</b>				
	Main construction	12 mm	0.210	0.057	100.00 %
<b>Int surface</b>				0.100	
<b>Total resistance:</b>		Upper limit = 4.937 m <sup>2</sup> K/W	Lower limit = 4.922 m <sup>2</sup> K/W	Average = 4.929 m <sup>2</sup> K/W	
U-value (unrounded) = 0.2 W/m <sup>2</sup> K					

Unheated space: None

**Total thickness: 218 mm**

**U-value: 0.20 W/m<sup>2</sup>K**

#### Roof Flat Bay Roof-2 - 300mm Insulation

Roof Type: Flat Roof standard (no precipitation)

Layer	Description	Thickness	Lambda	R	Fraction
<b>Ext surface</b>				0.040	
<b>Layer 1</b>	<b>GRP</b>				
	Main construction	3 mm	0.200	0.015	100.00 %
<b>Layer 2</b>	<b>Mineral wool quilt</b>				
	Main construction	300 mm	0.041	7.317	98.20 %
	Bridging - Timber	300 mm	0.130		1.80 %
	Corrections - Air Gap: Level 0, Fasteners: None or plastic				
<b>Layer 3</b>	<b>GRP</b>				
	Main construction	3 mm	0.200	0.015	100.00 %
<b>Layer 4</b>	<b>Plasterboard, standard</b>				
	Main construction	12 mm	0.210	0.057	100.00 %
<b>Int surface</b>				0.100	
<b>Total resistance:</b>		Upper limit = 7.285 m <sup>2</sup> K/W	Lower limit = 7.269 m <sup>2</sup> K/W	Average = 7.277 m <sup>2</sup> K/W	
U-value (unrounded) = 0.14 W/m <sup>2</sup> K					

Unheated space: None

**Total thickness: 318 mm**

**U-value: 0.14 W/m<sup>2</sup>K**