

# FIBREGLASS ROOF CONSTRUCTION

## Part 2/5: Timber Decking & Insulation Installation



### User Guide and Manual

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## 2.2. Background

This section details the steps involved in creating the laminate on a fibreglass roof.

Its part 2 of a 5-part series where we cover health and safety, as well as the installation of edge trims, laminating and eventually topcoat application.



You can purchase Resin Library fibreglass roofing kits in a range of sizes, simply click the link in the description below.

**WARNING!** Read the Safety Data Sheets (SDSs) available for download on the product page. Wear appropriate protective eyewear, clothing, and gloves and other PPE. Safety Data Sheets (SDSs) are available from [www.resinlibrary.com/product/600g-fibreglass-grp-flat-roofing-kit/](http://www.resinlibrary.com/product/600g-fibreglass-grp-flat-roofing-kit/). Perform a full risk assessment, method statement and COSHH form in advance.

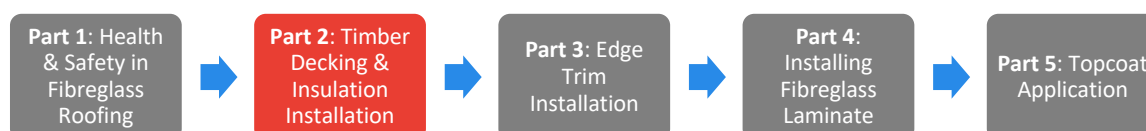
**Table 1. Fibreglass Roofing Kit**

| Product                    | Size (m <sup>2</sup> ) | Note                                           | Ordering                          |
|----------------------------|------------------------|------------------------------------------------|-----------------------------------|
| Fibreglass (GRP) Roof Kits | 1                      | Materials and tools included based on kit size | > <a href="#">Find out more</a> < |
|                            | 2                      |                                                |                                   |
|                            | 3                      |                                                |                                   |
|                            | 5                      |                                                |                                   |
|                            | 10                     |                                                |                                   |
|                            | 15                     |                                                |                                   |
|                            | 20                     |                                                |                                   |
|                            | 25                     |                                                |                                   |
|                            | 30                     |                                                |                                   |
|                            | 35                     |                                                |                                   |
|                            | 40                     |                                                |                                   |
|                            | 45                     |                                                |                                   |
|                            | 50                     |                                                |                                   |

## 2.3. Introduction

In the construction of a Warm Flat Roof design, timber decking and insulation are intended to provide structural support for the roof and to insulate the property itself. It also provides the basis for the fibreglass waterproofing membrane.

Following on from Part 1, this section covers laminating of the timber decking and edge trims.



**Table 2. Fibreglass Roof Construction Topics in Series**

| Part | Topic                                    | Description                                                          | Video Link                              |
|------|------------------------------------------|----------------------------------------------------------------------|-----------------------------------------|
| 1/5  | Health & Safety in Fibreglass Roofing    | Covers health and safety topics involved in fibreglass roofing       | <a href="#">&gt; Find out more &lt;</a> |
| 2/5  | Timber Decking & Insulation Installation | Process of installing timber decking and insulation                  | <a href="#">&gt; Find out more &lt;</a> |
| 3/5  | Edge Trim Installation                   | Installation of GRP edge trims around the perimeter of the flat roof | <a href="#">&gt; Find out more &lt;</a> |
| 4/5  | Installing Fibreglass Laminate           | How to install fibreglass laminate onto timber decking               | <a href="#">&gt; Find out more &lt;</a> |
| 5/5  | Topcoat Application                      | Application of topcoat (flowcoat) to the fibreglass laminate         | <a href="#">&gt; Find out more &lt;</a> |

**Note:** if you are laminating a large or awkwardly positioned area of flat roof, you should plan which areas to target first in advance. One of the best strategies is to focus on opposite ends of the roof first – and then move inwards. This gives you room to manoeuvre between both sides and avoids trapping you at one end or at the edge where you end up needing a ladder. Furthermore, you do not want to walk or place any weight on fresh laminate.

**Note:** it is advisable that beginners practice over small areas in advance – this will help validate the quality of the intended laminate.

**Note:** fibreglassing is an art as much as it is a science. We recommend that you practice in small areas using small quantities in advance if you are new or an inexperienced laminator. Resin Library is not liable for any outcome.

**Note:** Use of material in applications not specified or not described in this manual, may result in improper function, personal injury, or damage of the product or material.

### 2.4. Planning & Preparation

#### 2.4.1. Health, Safety & Technical Advice

Please familiarise yourself with the Material Safety Data Sheets (MSDS) before starting.

Personal protective equipment (PPE) should be always worn. Recommended PPE includes safety goggles, gloves and overalls. A suitable mask is advised if work is being performed indoors.

For product or technical support, please email ([www.resinlibrary.com/contact-us/](http://www.resinlibrary.com/contact-us/)) or telephone us on **029 21900 282**.

Use of the products in applications not specified or not described in this manual, may result in improper function, personal injury, or damage of the product or material.

**Disclaimer:** this guide is for general informational purposes only. It does not constitute fibreglass roofing advice. Resin Library is not liable for any outcomes. The use of information linked to this content is at the user's own risk. The content in this guide is not intended to be a substitute for professional advice. Users should not disregard in obtaining professional advice.

## 2.5. Materials & Tools

The materials and tools recommended for laminating are detailed below.

**Table 3. Materials & Tools**

| Tools                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Materials                                                                                                                              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• <i>Wooden Firrings</i></li> <li>• <i>PU adhesive</i></li> <li>• <i>Fascias: boards and Polytop nails</i></li> <li>• <i>BBA®-certified PIR Insulation</i></li> <li>• <i>BBA®-certified T&amp;G OSB3 Timber Decking</i> <ul style="list-style-type: none"> <li>○ Size: 8 x 2 (2.4 x 0.6 m)</li> <li>○ Thickness: 18 mm</li> <li>○ Decking Fixings: <ul style="list-style-type: none"> <li>▪ Base layer = 50 mm ring shank nails (21 per board)</li> <li>▪ Top layer = 7.5 mm Torqx Concrete Screws (15 – 21 per board)</li> </ul> </li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <i>Nailgun or equivalent</i></li> <li>• <i>Timber saw</i></li> <li>• <i>Hammer</i></li> </ul> |

## 2.6. Method

The procedures recommended for installing timber decking and insulation are detailed below.

### 2.6.1. Firrings

A slope is always added to a flat roof by default. This is to ensure that rainwater does not pool on the roof and instead drains away towards a gutter system. Current building regulations state a minimum fall of 1:60.

A slope can be achieved by including firrings onto the joists to aid run-off.

A furring is a thin strip of timber (or 'batten') that has been cut along its length diagonally so that it tapers, with one end deeper than the other. Firrings are used in the construction of flat roofs to create a fall, ensuring that water runs to the lower side.

1. Wooden firrings should be positioned onto the wooden joists to create a gentle slope in the flat roof.



Wooden firrings should be sloped away from the building towards the guttering system.

2. Secure firrings with screws or nails that penetrate approximately 40 mm into the joists.



Firrings are secured with screws or an equivalent.

**Note:** the flat roof must have a slope, known as a fall, to drain rainwater. This can prevent premature lifetime, leakage, debris accumulation and insect infestation.

**Note:** the fall should never be less than 1:80 (0.72 degrees) and preferably about 1:40 (1.44 degrees).

### 2.6.2. Fascias

Once the battens have been installed, the next step is to install the fascias around the roofing structure.

Boards are 5 metres in length and the board thickness used here is 18mm.

*Note: fascia boards come in increments of 25mm. They can vary in width from 100 mm to around 400 mm. Make sure the boards are correctly measured or consult a professional if you are uncertain. Fascia boards are 5 metres in length and the board thickness used here is 18mm.*

*Note: where the board is laid along a wall, an expansion gap of 25mm between board and wall should be allowed.*

1. Position each fascia in place and use polytope nails to secure.



Fascias should be positioned along the edges of the roof perimeter and secured with polytope nails or an equivalent.

*Note: if necessary, cut the fascias to length.*

*Note: there are two layers of OSB3 timber decking that will be in the next section installed, with the insulation being sandwiched in between both.*

### 2.6.3. Decking Layer 1 (Base Layer)

The timber decking should be OSB3 grade and BBA-certified. This is easier to manoeuvre, since it is:

- 2400 x 600 x 18 mm and therefore lighter than full size boards
  - engineered to minimise the effects of expansion and contraction.
  - T&G (tongue and groove) joints so boards are easier to connect and do not require bandaging
  - a promoter of laminate adhesion (unlike plywood, which requires surface roughening and a primer)
  - BBA® certified for quality purposes
1. When installing the timber decking, orientate according to the instructions on the board. In this instance the decking should be placed according to the instructions on the surface.



Orient the timber according to the instructions on the surface. This may differ depending on the brand of timber used.

2. Create a 25 mm gap in between the decking and the wall; this is an expansion gap and will accommodate thermal expansion in response to temperature.
3. Clip the timber decking boards together via the grooves. A timber saw is recommended for cutting timber decking.



The T&G (tongue and groove) type of timber decking allows boards to be clipped together and avoids the need for a gap.

**Note:** for T&G decking, boards will clip together so ensure they are orientated in a manner that will enable this. There is no gap required between boards.

**Note:** it may be necessary to cut the decking to size to ensure that each section fits.

4. Once in place, secure the decking with 50 mm ring shank nails (21 per board) and 200 mm spacing.



Mark the position of the joists during decking installation. Secure decking in place with nails that are long enough to penetrate them.

*Note:* it is a good idea to mark out where the joists are on the roof during the decking installation so that the ring shank nails can be accurately nailed into the timber decking.

### 2.6.4. Insulation

The insulation should be PIR – which stands for polyisocyanurate. It should be BBA-certified. The insulation used here is 18 mm thick.

*Note:* there are quite a lot of regulations around insulation, so it is always a good idea to check the latest planning permission laws.

1. Place the insulation on top of the timber decking and ensure there are no air gaps.



Insulation should be placed tightly onto the timber decking. It is not secured at this point; the second layer of timber decking is used to secure it.

2. If the insulation needs to be cut, consider using a track saw or equivalent.

*Note:* as with the first timber decking layer, mark the location of the joists again by copying the lines from the first layer of decking to the insulation.

### 2.6.5. Decking Layer 2 (Top Layer)

Once the insulation has been positioned, the next step is to install the second layer of timber decking.

1. Place the decking on top of the insulation in the same manner as the first layer.



Place the timber decking in place and orientate it such that the T&G edges line up

2. Again, this should clip together and boards should avoid air gaps.



Clip the boards together to eliminate any gaps between them

3. This time, use 7.5 mm torqx concrete screws and aim to use 15-21 per board (based upon the size of decking used in this example) with approximately 200 mm spacing.



Secure the second layer of timber decking in place with screws that can penetrate the joists by a minimum of 30 – 40 mm

**Note:** These screws should penetrate through the top layer of timber decking, through the insulation and base layer of decking and into the joists below.

The result should be two layers of timber decking sandwiching a layer of PIR insulation.

The roof is now ready for edge trim installation.

In the next guide we'll focus on the installation of edge trims around the perimeter of the roof.

## 2.7. Related Products

Resin Library also offers a range of fibreglass-related products.

**Table 4. Fibreglass (GRP) Roof Repair Kits**

| Product                           | Size (m <sup>2</sup> ) | Note                                                                           | Ordering                          |
|-----------------------------------|------------------------|--------------------------------------------------------------------------------|-----------------------------------|
| Fibreglass (GRP) Roof Repair Kits | 0.5                    | Materials and tools included based on kit size.<br>Includes topcoat (flowcoat) | > <a href="#">Find out more</a> < |
|                                   | 1                      |                                                                                |                                   |
|                                   | 2                      |                                                                                |                                   |
|                                   | 3                      |                                                                                |                                   |
|                                   | 5                      |                                                                                |                                   |
|                                   | 10                     |                                                                                |                                   |

Table 5. Fibreglass (GRP) Repair Kits (Without Topcoat)

| Product                      | Size (m <sup>2</sup> ) | Note                                                                                    | Ordering                          |
|------------------------------|------------------------|-----------------------------------------------------------------------------------------|-----------------------------------|
| Fibreglass (GRP) Repair Kits | 0.5                    | Materials and tools included based on kit size.<br>Does not include topcoat (flowcoat). | > <a href="#">Find out more</a> < |
|                              | 1                      |                                                                                         |                                   |
|                              | 2                      |                                                                                         |                                   |
|                              | 3                      |                                                                                         |                                   |
|                              | 5                      |                                                                                         |                                   |
|                              | 10                     |                                                                                         |                                   |

Table 6. Polyester Resin

| Product         | Size (L) | Note                                                                                                                                                      | Ordering                          |
|-----------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Polyester Resin | 1        | <ul style="list-style-type: none"> <li>Used for fibreglass laminating</li> <li>Includes MEKP</li> <li>Lloyd's Approved</li> <li>WRAS compliant</li> </ul> | > <a href="#">Find out more</a> < |
|                 | 2.5      |                                                                                                                                                           |                                   |
|                 | 5        |                                                                                                                                                           |                                   |
|                 | 10       |                                                                                                                                                           |                                   |
|                 | 20       |                                                                                                                                                           |                                   |

Table 7. Topcoat Resin

| Product       | Size (L) | Note                                                                                       | Ordering                          |
|---------------|----------|--------------------------------------------------------------------------------------------|-----------------------------------|
| Topcoat Resin | 1        | <ul style="list-style-type: none"> <li>Colour: Dark Grey</li> <li>Includes MEKP</li> </ul> | > <a href="#">Find out more</a> < |
|               | 2.5      |                                                                                            |                                   |
|               | 5        |                                                                                            |                                   |
|               | 10       |                                                                                            |                                   |
|               | 20       |                                                                                            |                                   |

Table 8. Glass Fibre (CSM)

| Product                   | Type     | Size (m <sup>2</sup> ) | Note                                                                                                          | Ordering                          |
|---------------------------|----------|------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Glass Fibre Matting (CSM) | 450-gram | 2 - 80                 | Multi-directional glass fibre reinforcement for fibreglass laminating. Designed for use with polyester resin. | > <a href="#">Find out more</a> < |
|                           | 600-gram | 2 - 55                 |                                                                                                               | > <a href="#">Find out more</a> < |