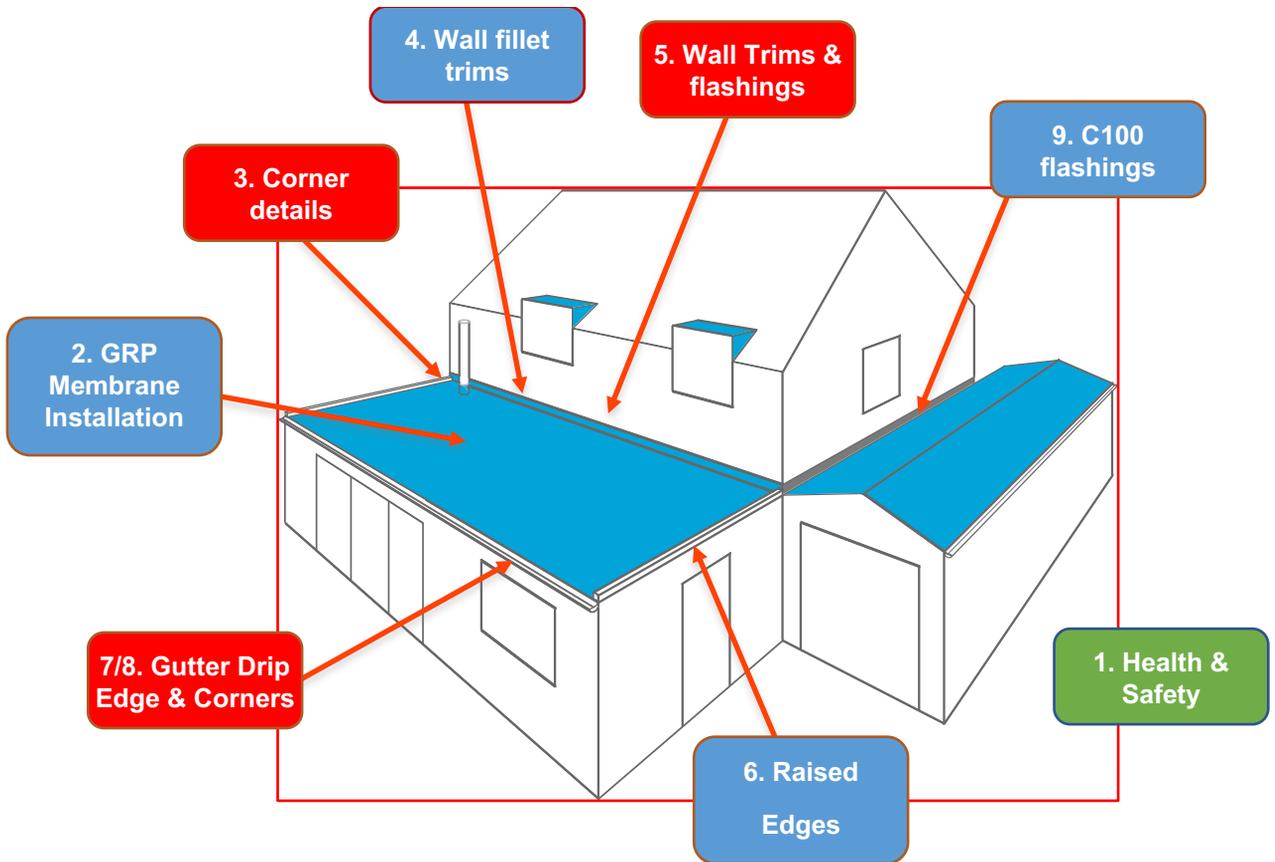




COMPOSITE ROOF SUPPLIES



Fibreglass Installation Guide at a Glance

This guide is designed as a quick reference for roof installations under 100 square metres. Refer to the full 24 page user manual for a complete installation guide.

Don't forget a full range of helpful installation

videos are available at:

www.compositeroofsupplies.co.uk

2. Mixing Up ratios

MIXING CATALYST Thorough mixing of catalyst into resins and gelcoat is very important. Also the correct additions should be observed to maintain good results. Dispensers are advised for accuracy. The table below gives the correct ratios of catalyst to resin and gelcoat by weight. 1% is considered a slow mix, 2% is ideal, 3% is a fast mix. Additions outside these bands in not advisable for proper curing, in fact adding more than 4% may result in a failure to cure. The pot life of these mixes is also determined by temperature. The higher the temperature the faster the cure. As a general guide 2% addition at 20°C gives 15-20 mins pot life. The resin will always cure quicker if left in a mass such as the mixing bucket in direct sunlight

Apply at temperatures of no less than 5°C and rising with no chance of freezing in 48 hr window, Avoid rain at all costs. Minimum 2 day window



29 degrees to 35 degrees celsius
If it's warm and sunny use 1%
Example 1kg @ 1% is 10ml

1. 1% per kg on a hot day



21 degrees to 28 degrees celsius
If it's dry warm and cloudy use 2%
Example 1kg @ 2% is 20ml

2. 2% per kg on a warm day



13 degrees to 20 degrees celsius
If it's dry & cool use 3%
Example 1kg @ 3% is 30ml

3. 3% per kg on a cooler day

1cc = 1mg = 1cc NB: 1KG IS APPROX 1 Litre

RESIN WEIGHT						
%	50G	100G	250G	500G	1KG	5KG
1.00%	0.5 (ml)	1 (ml)	2.5 (ml)	5 (ml)	10 (ml)	50 (ml)
2.00%	1 (ml)	2 (ml)	5 (ml)	10 (ml)	15 (ml)	100 (ml)
3.00%	2 (ml)	3 (ml)	7.5 (ml)	15 (ml)	20 (ml)	150 (ml)

WEIGHT

Gram (g) Kilogram (1 Kg = 1000g) Tonne (1T = 1000kg)

Metric 1oz = 28.35g 1 lb = 0.4536kg 1 ton = 1.016 tonne

Imperial Units 1g = 0.0353 oz 1kg = 2.2046 lbs 1 Tonne = 0.984 ton

Overview The GRP roofing Installation Manual contains practical guidance for installing a GRP roof. It is recommended for installers to attend a training course before attempting to lay a GRP roof. COSHH data for the GRP roofing system can be found [here](#). Product Description GRP roofing system.

Standards Compliance Part L Building Regulations Compliance (as of April 2006:) For refurbished flat roofs GRP can be specified with a calculated 'U' value of 0.25W/m² K for (Calculated in accordance with BS EN ISO 6946) For new build flat roofs GRP can be specified with a calculated 'U' value of 0.20W/m² K for (Calculated in accordance with BS EN ISO 6946)

MAKE SURE you consult your local council or building control officer prior to starting any work, we have DIY systems and Fire rated systems should you need to go down the building control route

[CLICK HERE FOR OUR METRODECK](#) Building control systems

2a. Fitting the trims to the OSB 18MM Tongue & groove boards

GRP TRIMS - Edge trims are manufactured in GRP. One side has a high adhesion finish (matt finish), the other side has a glossy finish, always bond to the matt finish. All trims must be fixed with nails or staples to the decking board. With the exception of the F300 Flat flashing and the D260 Angle fillet, the trims must be bonded in place using the Polyurethane Adhesive. Silicone sealant or general-purpose mastics are not suitable adhesives for the fixing of trims. Polyurethane Adhesive (PU) PU adhesive is applied with a skeleton gun to the batten around the perimeter of the roof. A 30mm bead at 300mm centres is sufficient to hold the trims in place. The trims should be 'rubbed' into place to ensure good bonding. Joining Trims Trims are either nailed to the decking boards using a 13mm galvanised clout nail or stapled in place with a gas powered or compressed air stapler. Hold the trim in place ensuring the face is vertical. Drive fixings in at each end, then the middle and then at 200mm centres thereafter.



Always ensure laps and joins are clean and dry. PU Adhesive is essential to ensure the face of the trim and the overlaps are firmly held in place

[FOR MORE DETAILED INFORMATION REFER TO OUR 24 PAGE USER MANUAL](#) PAGES 10-13

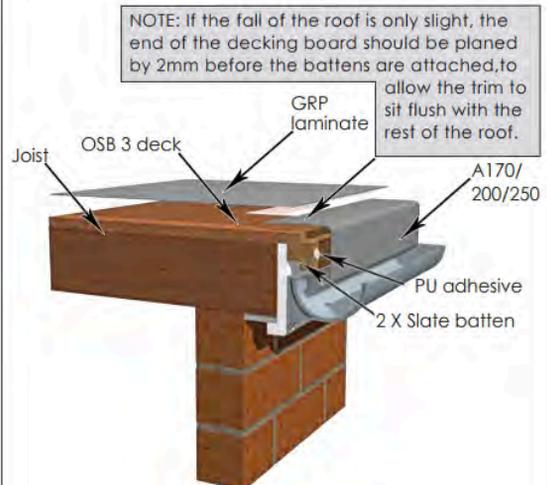
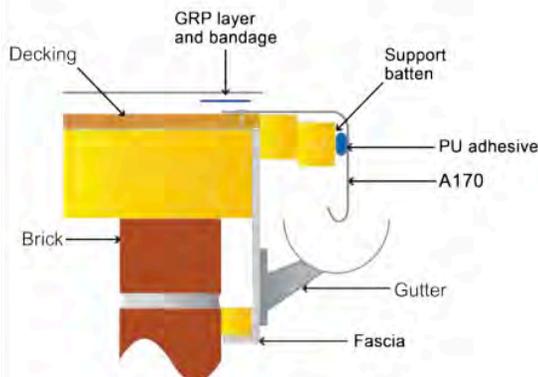
A170/A200/A250- Drip Trim

The A type trim is a drip trim, fitted to the lowest edge of the roof usually where the rainwater flows into the gutter. Two support battens should be fixed to the perimeter of the roof to provide space for the gutter to fit behind the trim, with the outer batten attached 10mm lower than the inner batten to allow the trim to sit flush with the roof. Apply PU adhesive to the batten in 30mm beads at 300mm centres, rub the trim into place and nail to the decking. Do not nail through the front of the trim. If the pitch of the roof is only minimal, rainwater is likely to hold behind the trim. A planing machine can be used to take 2mm off the deck to allow the trim to lay flush with the board.

TRIM DETAILS: A170: This is designed for applications where it is not possible to use the larger A200. A200: This is the standard size drip trim. A250: This drip trim is ideally suited for use on warm roofs.



A170/200/250 Application diagrams:



1. Health & Safety Guide

Extreme care must be exercised when working on ladders & roofs. Surfaces can be slippery when wet, damp, or frost covered. Do not expose product to temperatures in excess of 180 degrees.

Adhesives, primers, and sealants, as well as their fumes, contain distillates and are EXTREMELY FLAMMABLE, maintain proper ventilation. Store these products away from heat, flame or sparks. Do not smoke near these materials. Containers should be closed when not in use. Care must be taken not to place open containers near fresh air intake ventilators. Avoid contact with eyes, glasses or goggles are recommended. If contact is made with eyes, immediately flush with water for at least 15 minutes and contact a doctor or physician. Avoid contact with the skin, chemically resistant gloves should be worn. In case of skin contact wash the affected area with soap and water. [Find out more information](#)

Please review this guide, any material safety sheets & product packaging prior to storage, handling or use of these products.

3. GRP Membrane Installation

BONDING SURFACE - Whether laminating or casting you should work in an ambient temperature NO LESS than 5°C, as this ensures that the resin will cure correctly. Resin will not cure adequately below 5°C, and at temperatures above 30°C, they will cure too quickly! We suggest using 18mm OSB tongue and groove boards. Ply boards or any square edge will need additional bandage for the joints and resin at a ratio of 0.2kg per m² or linear metre approx. The surface MUST be clean and dry at all times

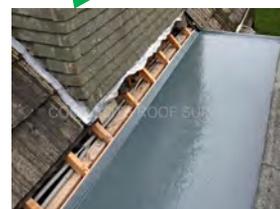
ROOF PITCH - Good roofing practice dictates that ponding water be prevented. The roof surface should have a positive slope of at least 1:80 to prevent ponding water conditions. Ponding water is defined as the presence of standing water within 24 hours of precipitation.

APPLYING THE LAMINATE- Until you have experience do not mix up too much resin at a time certainly no more than 2kgs, enough for between 1 and 1.5 m² of fibreglass. For large flat areas it is quicker and easier to apply the resin using a medium pile roller. Roll on a coat of [catalysed](#) resin to the surface and then lay on the first section of fibreglass, apply more resin to “wet out” (saturate) the fibreglass. As the binder holding the fibreglass dissolves it will become translucent. Then apply the next layer which should be cut slightly smaller to create a built in staggered overlap and again apply more resin. Once the fibreglass has been ‘wetted out’ it is necessary to consolidate the two layers of fibreglass and this is done using a metal roller. The roller can either be of the aluminium ridged variety, “paddle roller” or a metal “washer roller” but used vigorously it not only forces the two layers of fibreglass together but it removes any trapped air, this appears in a laminate as a white blister, and care must be taken to ensure that this is done. Having completed this section move on to the next and with the overlap built in Full widths. Unless the corners are a radius do not attempt to take the fibreglass around the corner since it is difficult to “persuade” fibreglass to lay into right angled bends, start again with a built in overlap. Since there will be a butt joint at the corner it is then recommended that a strip of fibreglass some 200mm is cut with the edges frayed out and then applied as a tape would into the corner. You will find that this is easier since the fibreglass can be bent into shape. Once the fibreglass has been “wetted out” it is easier to work into corners and around more complicated and compound shapes. For this purpose a brush is used with a stippling action and if required the fibreglass can be pre wetted out on a flat board before being stippled into position.

Ensure that you do not exceed the weight limitations of the roof structure when loading materials.

The Membrane has no top side or bottom side. It can be laid either way up!

The laminate cures fast it's a good idea to have some acetone ready to keep the tools clean, about a litre in a clean bucket is ideal



3. Membrane installation continued

Note: • Never attempt to lay a roof in wet weather or when wet weather is forecast. • If it starts to rain while you are laying a roof, the roof must be covered and must not get wet, always keep a large visqueen sheet on site to cover the roof. The visqueen will not bond to the curing laminate.

• If rain is forecast while laying boards, the boards can be temporarily sealed with a coating of catalyzed resin. Always ensure that as much of the roof is covered as possible, ensure that edges, or areas of possible water ingress are covered.

• If decking has become damp, do not attempt to lay laminate on top.

• Always ensure that the surface you are laying onto is completely dry and free from debris before you start. A wet surface can lead to delamination

WATERPROOFING A PIPE USING GRP CSM– Where a pipe enters the roof and it is not possible to waterproof the roof detail using a preformed pipe boot GRP matting and resin can be used. Follow the diagrams below.

Step 1 Ensure the PVC pipe is abraded with a 40 grit paper *wipe clean with acetone.

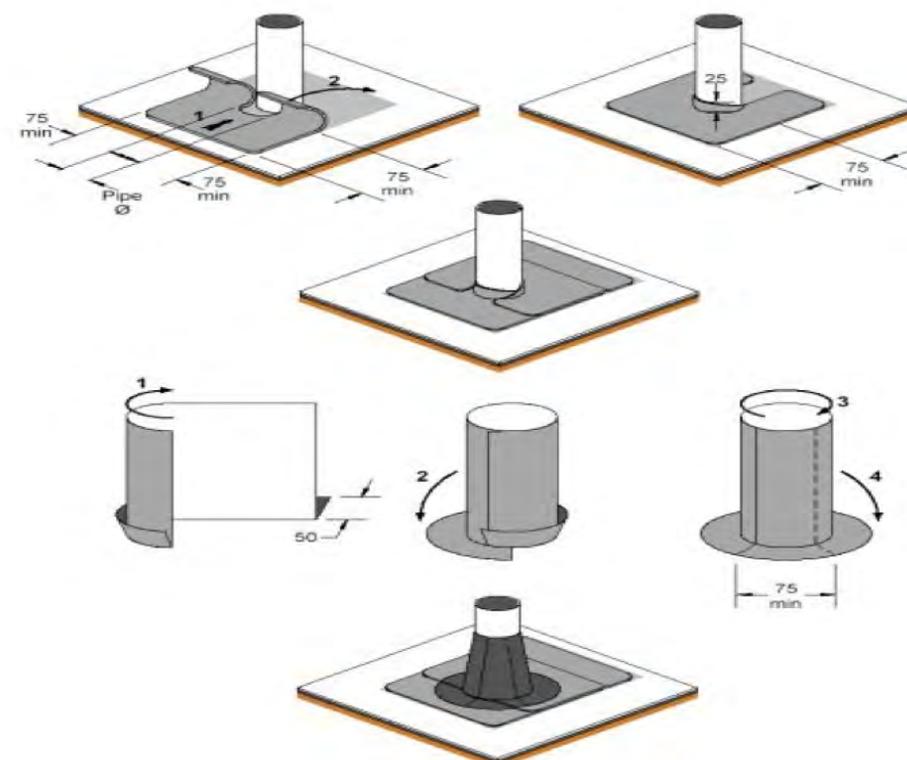
Step 2 Ensure you pre cut all the matting.

Step 3 Ensure the matting is wet out in place to avoid making a mess.

Step 4 Ensure to use the 75/21 Paddle roller to press the matting against the pipe and remove all the trapped air

Step 5 LEAVE TO CURE & TOPCOAT ON COMPLETION OF THE MAIN DECK

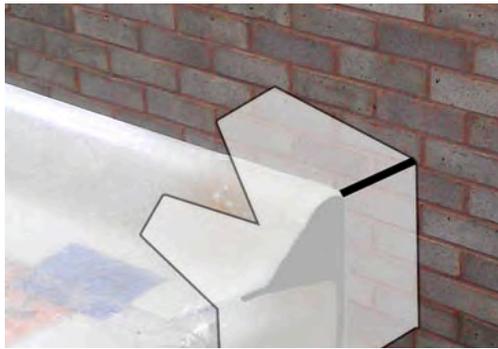
Step 6 [Fit a Rubber pipe boot for added waterproofing](#)



Note: Avoid spillages by masking off the roof properly, a fine spray is caused when using the consolidator roller, wind can carry this a considerable distance. It is important to ensure that this is considered before the resin is used on the roof. When resin has cured, there is no easy way of removing it from car paintwork without also removing the paint (see spillages in the troubleshooting section.)

4. LAMINATING JOINTS AND CORNERS

EXTERNAL CORNER DETAIL– Corner details are all waterproofed using CSM Patches & Resin



1) Cut the CSM approx. 150mm x 150mm double these up as 1 layer once stretched is to thin

2) Using a brush soak the matting with catalysed Resin, The paddle roller can now be used to work a nice finish

3) When cured sand and inspect for pin holes, seal if required prior to Topcoating



4) The kit will have a 75mm woven bandage or if you prefer cut strips of CSM and wet out with the resin allowing time to soak.

5) After a few minute the laminate will be ready to consolidate with the metal roller, remove all the air and draw the resin to the surface, ensure the strands are breaking down until the board is visible

6) Continue with step 4 working your way around using your brush or resin applicator ensure all the strips are wet, finalise with step 5

*YOU must see the boards around edge of glass tape.
No dry edges, or visible strands

Video instructions can be seen [here](#)



5. MAIN LAMINATE

MAIN LAMINATE— LAYING THE MATTING



1) Cut the membrane FROM END TO END ideally following the fall of the roof this ensures any overlaps are falling in the direction of the water run off



2) Mix approx. 2.5 to 5l of resin and start to wet the matting with the medium pile roller, This is easier with 2 people and the roller on a telescopic pole.



3) We suggest using 1kg on the deck and 0.2 or 0.5kg on the surface depending the matting type you have, after the resin has soaked you will start to see the boards . Proceed to step 4



4) At this stage use the metal roller and consolidate the matting, your aim here is to draw resin to the surface, push the matting to the deck and remove all trapped air bubbles, the overall finish should be opaque, smooth and a nice wet film of resin on the top layer

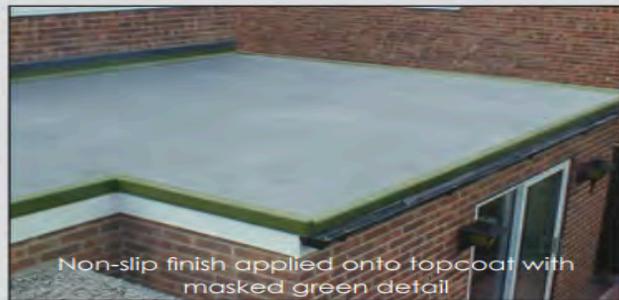
Consolidating Let the resin soak into the mat to break down the emulsion binder for 2 to 3 minutes. Using the paddle roller and applying a little pressure, roll back and forth along the 2 edges and the end of the wetted out mat, feathering them in as you go. Now roll the paddle roller over the whole of the wet out mat, ensuring the paddle roller makes at least 2 passes over the whole area. In colder weather the resin will be thicker and will take a little longer to wet out. When a laminate is correctly wetted out it should be transparent, there should be no white or opaque areas. Take care near the edge of the roof and in windy conditions as a fine spray will be emitted from the roller. Make regular close inspections of the laminate as it is consolidated, checking for 'pin holes' and areas short of resin. Pinholes in the laminate will lead to porosity and water penetration. On all overlaps of the mat, pay extra attention to the 'feathering in' as this will improve the overall appearance of the finished roof.

6. TOPCOATING PREP

Preparation for topcoating–

Taking care and paying attention at this stage will produce a roof of superb appearance. Using a sanding pad with a 40 grit sand paper, lightly sand the corners and trim bandages. Sand off any unsightly fibres, taking care not to sand too heavily on the corner itself as this may lead to holes appearing. Cut any excess cured mat protruding beyond the trim with a sharp Stanley knife.

Techniques: • A number of different finishes can be achieved using slate granules. they can either be sprinkled over the top of curing topcoat for the appearance of mineral felt. Alternatively, a fine sprinkling of granules can be rolled into the top coated roof for a coloured non-slip finish. *DO NOT USE IN DIRECT SUN



TOPCOAT– Top coating the roof The Topcoat is a resin and should be treated in the same way as the base resin. It requires the addition of catalyst for it to cure. Always try to apply the topcoat immediately after the laminate is semi-cured (can be walked on, no stickiness) If this is not possible then ensure top coating is carried out within 24 hours to gain good bonding with the laminate. If the top coating is left longer than 24 hours then wash down the laminate with acetone to gain a good cross-polymerisation of the topcoat to the laminate. Remove the lid and stir the topcoat well before use. Ensure the styrene and wax at the bottom of the tin is fully mixed in. Pour out into the mixing buckets enough topcoat to cover the perimeter of the roof (including the edge trims.) Use a 2½ Polyester roller to coat the trims. A roller will get a better and more even finish than a paintbrush. Roll the topcoat along the face of the trim. Hold the roller at an angle to the bottom of the trim to cover half of the radius return on the front of the trim. To protect the fascia from topcoat, hold a piece of flashing trim against it as you topcoat the radius on the underside of the trim. Calculate how much topcoat you will need to use to cover the main body of the roof. (See material estimator in the Commercial Manual.) Add the required amount of catalyst and stir well. Using the 7” polyester roller, cover the remaining laminate with just enough topcoat for the fibre pattern to be visible. Do not coat the roof too thickly or the topcoat will crack. If a coloured topcoat is needed rather than the standard cool grey or dark admiralty grey, a colour pigment will need to be added to a clear topcoat. A 20 kg tin of topcoat requires 2 kg of colour pigment. It is essential to mix the pigment thoroughly into the topcoat to avoid patchiness and uneven colour.

Cleaning Tools and Equipment Buckets can be re-used for many jobs. When each mix is finished with, coat the inside of the bucket. When the resin has cured after approximately 30 minutes it can be peeled out, leaving the bucket like new and ready for the next job. Paintbrushes can be dropped into a re-sealable container of acetone and left for the next job. Use only paintbrushes that have unpainted or uncoated handles, as the coatings will come off and contaminate the resin. Polyester rollers have sleeves that are removable. It is too time consuming to clean the roller sleeves. Unscrew the nut with pliers and drop the used sleeve into the bucket of used resin. Either use disposable latex gloves when handling catalysts or resins or clean hands with hand cleaner. Do not clean hands with acetone. Wipes are also a useful addition to your toolkit. As well as cleaning hands they are good for removing resin from windows and fascias.

8. GENERAL ADVICE

General Advice When Laying a GRP Roof

Repairing a GRP roof If the roof surface becomes damaged by impact or has to be cut for any reason it can be easily repaired using the following procedure:

1. Clean off the damaged area with solvent and abrade the GRP surface with a hand grinder for a distance of 100mm from the damaged area or edge to be joined.
 2. Cut the 450/600gm² glass to the correct size to cover the affected area and mix sufficient resin with catalyst as previously described.
 3. Brush resin onto the area to be laminated at the rate of 1 kilo per square metre. Place the glass over the area, wet out the glass with resin at the rate of 0.5 kilos per square metre. Stipple well with the brush or use a paddle wheel roller for larger areas.
 4. Ensure that the laminate is free from air and completely consolidated and allow to cure.
 5. Mix the Topcoat with catalyst as previously described and apply with a brush at the rate of 0.5 kilos per square metre.
 6. Allow to cure. This procedure will ensure that the patch or joining piece applied will bond to the original laminate and form a weatherproof patch over the damaged or cut laminate.
- 7. Advice when using GRP during Winter months**
8. • Always check the local weather forecast (See Commercial Manual for details on how to obtain an accurate forecast.)
 9. • During the Winter, avoid topcoating a roof after 2-3pm unless it is a clear bright day and not too cold. The heat from the sun contributes a great deal towards the curing of the laminate during colder months. After the sun has set, it is unlikely that the topcoat will cure over night. If left uncured, the topcoat may cure with debris and leaves stuck to the surface, or with an undesirable finish if it rains.
 10. • Ensure that the surface temperature of the boards is checked before laying the resin or topcoat. • Ensure that the resin is warmed before use if the ambient temperature is below 10°C. • Always ensure that the resin remains indoors the night before it is used.
 11. • Do not use resin or topcoat in temperatures below 5°C.
 12. • If it begins to rain, cover the roof with a visqueen sheet.
 13. • If you are unable to laminate over a prepared deck, then coat the decking with catalysed resin and cover any exposed edges. This will seal the deck and prevent moisture uptake until the laminate can be applied. Always cover the edges of the roof and uncoated boards with a polyethylene sheet.
 14. • Always ensure the deck or substrate to be laid onto is completely dry before laying the laminate. Sweep off any excess water and mop up the excess with dry cloths before allowing the roof to dry naturally. Wiping the surface with acetone can speed up this process.
 15. • Do not start to lay a roof if a period of rain is forecast. Advice when using GRP during Summer months • Always check the local weather forecast (See Commercial Manual for details on how to get an accurate forecast online and useful telephone numbers.)
 16. • Do not use roofing resin or topcoat in temperatures above 35o C.
 17. • Always mix smaller batches of resin than you normally would to give adequate time to apply it before it starts to catalyse.
 18. • Always use LPT catalyst in hotter weather if the resin starts to cure too quickly.
 19. • Always apply the laminate in the shortest runs possible across a roof. The shorter the length of laminate, the less likely it is that the resin will catalyse before it can be consolidated into the laminate.
 20. • Use a temperature sensore to measure the surface temperature of the laminate before applying the topcoat. If topcoat is applied to surfaces above 50o C, the wax component of the topcoat will melt and the topcoat will remain tacky to the touch, this will usually mean that any loose debris will stick to the roof and the colour of the topcoat will also be impaired.
 21. • If possible, topcoat the roof out of direct sunlight or wait until later in the day before applying it, it may mean that the roof will take you longer but it will save you time spent returning to the roof to re-topcoat it at a later date. Safe working practices It is always the installer's responsibility to ensure safe working practices for themselves and their employees and always pay attention to the risks for other members of the public that may be nearby at the time. The following notes are designed to help you ensure a safe working environment, but they are by no means comprehensive and any installers should always assess any potential risks when working on a contract and make sufficient means to address them. In addition to these notes, the installer should also be aware of the health and safety information that applies to most materials