



# **CRYSTIC<sup>®</sup>** **ROOF**

**THE LEADING GRP SYSTEM**

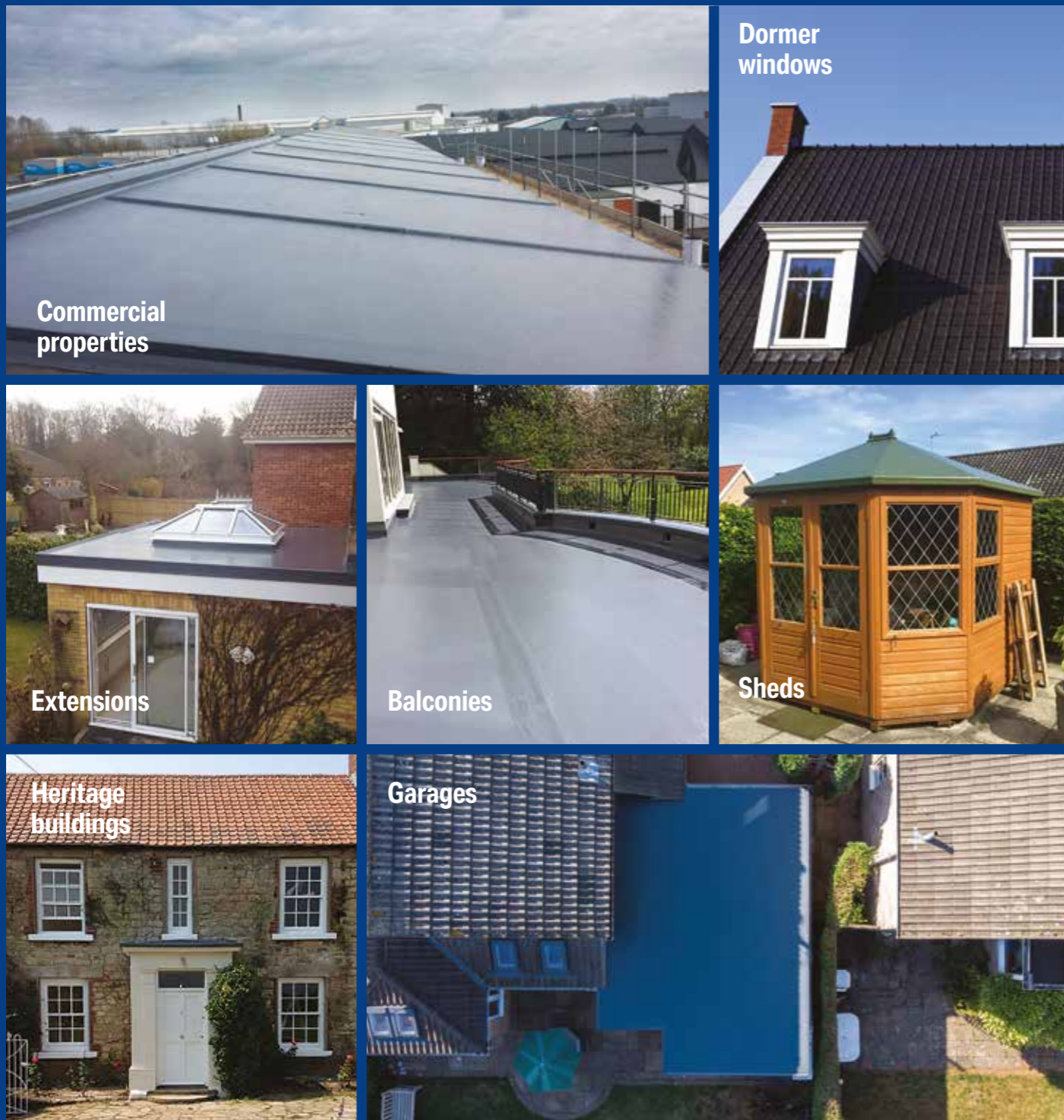




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## TYPICAL APPLICATIONS



# CrysticROOF® THE LEADING GRP SYSTEM

The CrysticROOF® System is an accredited range of high quality roofing products designed to provide a durable watertight seal on roofing structures, walkways and balconies.



CrysticROOF® is a cold lay liquid applied roofing membrane system which is very easy to apply. It is a durable replacement for traditional roofing materials such as bitumen, felt and lead.

Your roof will remain watertight and maintenance free for many years and can add significant value to a property.

Both CrysticROOF® Premier and CrysticROOF® FR are fully fire tested systems conforming to the latest British and European fire standards.

Use the information below to determine which CrysticROOF® system is suitable for you.

### SYSTEM



**Compatible resins:**  
CrysticROOF® Premier Resin

**Fire rated?**  
Yes - refer to page 4

**Warranty\***  
20-25 years

**Colour options**  
Dark and light grey

**Compatible surface finishes**  
Smooth, anti-slip and coated aggregate

**Packaging containers**  
20kg

### SYSTEM



**Compatible resins:**  
CrysticROOF® Standard Resin

**Fire rated?**  
Yes - refer to page 6

**Warranty\***  
10-15 years

**Colour options**  
Dark grey only

**Compatible surface finishes**  
Smooth, anti-slip and coated aggregate

**Packaging containers**  
20kg

### SYSTEM



**Compatible resins:**  
CrysticROOF® Standard Resin  
CrysticROOF® Topcoat Resin

**Fire rated?**  
No

**Warranty\***  
10-15 years

**Colour options**  
Dark and light grey

**Compatible surface finishes**  
Smooth, anti-slip and coated aggregate

**Packaging containers**  
20kg



# CRYSTICROOF® PREMIER SYSTEM



## Introducing the 20 and 25 year guaranteed roofing system from Scott Bader - CrysticROOF® Premier.

CrysticROOF® Premier is an accredited roofing system that offers up to 25 years lifespan\*. Only approved installers are qualified to work with and install this system and issue the guarantee on completion of work. To qualify as an approved installer, you must attend a one day training course at one of our centres. For more information about the course, and where to apply, see the back of this brochure.

\*Subject to completion and submission of CrysticROOF® Premier guarantee materials forms. For our 25 year guarantee installers must use 600g CSM chopped strand mat.

Only approved installers are qualified to work with and install this system and issue the guarantee on completion of work.



## Components of a CrysticROOF®

### CrysticROOF® PREMIER RESIN

Specially formulated for ease of application and to leave a tack free finish suitable for adhesion with the topcoat.

Features a colour change system to indicate the catalyst has been added. Features Low Styrene Emission technology (LSE) - minimising odours.

Pack sizes:  
20kg

### CrysticROOF® PREMIER TOPCOAT

Made from an Isophthalic base resin which means it gives superior performance in finish and long-term weathering.

Easy to apply by either roller or brush to provide a tack free finish when cured. The topcoats come pre-pigmented for your convenience.

Available in two colours:  
Light grey and dark grey

<b>Chopped Strand Mat &amp; Woven Tape</b>	Using a single layer of 450g of CSM will give a 20 year guarantee, but for a stronger laminate and a 25 year guarantee always use a 600g single layer or two layers of 450g of CSM. Woven glass tape is used to bind together trim edges and OSB3 board edges.
<b>Catalyst</b>	The activator used to start the curing process in the resin and topcoat. Using winter catalyst in colder conditions will ensure correct cure.
<b>Roof Trims</b>	Heavy duty edge and corner trims give excellent finish and appearance all around the roof.
<b>OSB3 Board</b>	Used to deck the roof. (Please note: tongue and grooved or cut board can be used).
<b>Tools</b>	Brushes, fabric application rollers, metal consolidation rollers – to apply resin and topcoat.

## KEY BENEFITS

- 20 and 25 year material guarantee\*
- Isophthalic topcoat for superior performance and long-term weathering
- CrysticROOF® Premier topcoat available in dark and light grey. Other colours are available subject to minimum order quantity
- All packed in 20kg easy pour containers
- Fire certified system to BS476: Part 3 to EXT.F.A.B. and EN13501-5 to Broof(T4)
- Approved contractors given free listing on CrysticROOF® website
- Approved contractors can link to the CrysticROOF® website and use the CrysticROOF® Premier logo and other marketing material
- Leads generated from customer enquiries given for your area
- No requirement to hold separate ancillary stocks
- Option to enhance with a fully insurance backed warranty using independent insurance scheme with competent roofer
- Manufactured from virgin raw materials
- Manufactured in the UK by Scott Bader to ISO 9001, ISO 14001 and OHSAS 18001 standards





# CRYSTICROOF® FR SYSTEM



## KEY BENEFITS

- Fire certified system to BS476: Part 3 to EXT.F.A.B. and EN13501-5 to Broof(T4)
- 10 and 15 year material guarantee\*
- CrysticROOF® FR is an Isophthalic topcoat designed for superior UV resistance
- Suitable for roof structures, walkways and balconies
- Remains watertight and maintenance free for many years
- Very easy to apply
- Available in dark grey only



CrysticROOF® FR is specifically designed to meet British and European fire standards. The system includes CrysticROOF® FR topcoat and Standard resin that combine to meet BS476: Part 3 to EXT.F.A.B. and EN13501-5 to Broof(T4).

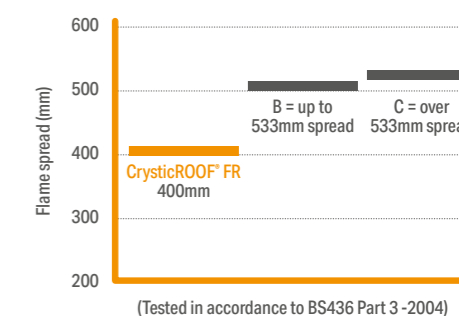
CrysticROOF® FR has been specially designed for FR roofing applications. It is designed for hand laminating and would normally be used with chopped strand mat. It is available in 20kg containers and is compatible with CrysticROOF® Standard resin.

Additionally the CrysticROOF® Standard resin boasts a colour change system which indicates when the catalyst has been added to the mixture.

Fire performance will also be dependent on content and profile thickness. Please contact a member of the Scott Bader team for further advice and certification.



## SPEED OF FLAME TEST LIMITS





# CRYSTICROOF® STANDARD SYSTEM



CrysticROOF® Standard resin is a low styrene emission, pre-accelerated, orthophthalic polyester resin, which rapidly wets out reinforcements.

It has been specifically designed for roofing applications, is designed for hand laminating and would normally be used with chopped strand mat. It is available in 20kg containers.

Additionally, the CrysticROOF® resin boasts a colour change system which indicates when the catalyst addition has been added to the mixture.

## KEY BENEFITS

- An in situ, cold-applied, glass-reinforced polyester roofing system which provides a powerful, leak-free, long-lasting alternative to traditional roofing materials, such as bitumen, felt and lead
- A high performance solution for all roof structures, including flat, valley and pitched - and for all shapes, including walkways, roof-lights and balconies
- Eliminates the need for heating equipment
- When applied correctly, CrysticROOF® remains watertight and maintenance free for many years<sup>1</sup>

# CATALYST ADDITION TIPS

- 1 Use an infrared thermometer to accurately measure the surface temperature of the roof.
- 2 Always use a minimum of 1% catalyst even in summer to ensure a thorough cure. On a hot day, this may mean mixing less at any one time.
- 3 The maximum catalyst level to use is 4% - the cure time will not reduce with higher catalyst levels.
- 4 Never underestimate the effect of temperature. Resins and topcoats will not cure at or below freezing and we recommend they should be used above 7.5°C.
- 5 When applying topcoat late in the day, add more catalyst to allow for the lack of sunlight (but not above an addition level of 4%.) Do not use if temperature is set to drop rapidly at night.
- 6 Summer grade catalysts are available to help slow the resin or topcoat down on hotter days.
- 7 Remember any catalysed resin left in the bucket will exotherm. Heat is generated as it cures and it should be left well away from other stored materials. If you are finished with the resin in the container, water may be poured over it to suppress the heat gain (do not use this once the water has been added).




## PLEASE NOTE

Resins and topcoats will cure a lot quicker in warmer conditions.



# CATALYST ADDITION CHART

All CrysticROOF products use **Catalyst M**.

% of Catalyst to Resin and Topcoat / Temperature	4% CATALYST	3% CATALYST	2% CATALYST	1% CATALYST
  	7.5-13°C Winter / Cold Weather	13-20°C Winter / Cold Weather	21-28°C Spring / Autumn / Ambient	29-35°C Summer / Warm Weather
RESIN / TOPCOAT	CATALYST	CATALYST	CATALYST	CATALYST
1kg	40ml	30ml	20ml	10ml
5kg	200ml	150ml	100ml	50ml
10kg	400ml	300ml	200ml	100ml

Please contact your CrysticROOF distributor for technical advice on catalyst information

# FREQUENTLY ASKED QUESTIONS

## Q. Will technical data and msds's be supplied at point of sale?

A. Yes. You should always make sure that your distributor passes you this important documentation before using these materials.

## Q. Can I get installation advice?

A. Yes. See the installation guide in our brochure available from Scott Bader and all of our distributors.

## Q. Do I need to allow for expansion joints when fixing?

A. Scott Bader recommends that you allow for expansion joints (see trim guide on page 15) every 50m<sup>2</sup>. If your roof is smaller than this then you do not need to worry.

## Q. Can a GRP roof be repaired?

A. Repairs should be made by cutting out the damaged section and grinding the surrounding area to a roughened, feathered surface, extending 100mm in each direction from the damaged area. The area to be covered should be thoroughly cleaned with a stiff brush. CSM mat and resin should be used to make good the repair, left to harden and subsequently the topcoat re-applied. Care should be taken not to coat existing areas of topcoat.

## Q. Can I catalyse resin or topcoat with acetone?

A. No. Do not ever try to catalyse any resin or topcoat using anything other than Catalyst M. Always follow the recommended guidelines in the installation guide depending on the weather conditions. If you do not do this the resin and topcoat will not set and will become wet and tacky.

## Q. Can I lay a roof in the wet?

A. No. Always lay GRP roofs in dry conditions. If it has rained after laying the resin or the deck always make sure that the surface is fully dried before top-coating.

## Q. Can I lay a roof below 7.5°C?

A. It is not advisable as the laminate will not cure correctly at lower temperatures and this could have a detrimental effect on the quality and surface finish of the roof. **CrysticROOF** COOLCure and HBO catalyst are now available for colder conditions.

## Q. How do I make sure that I have put the topcoat down at the right thickness?

A. Make sure you weigh out the correct quantity of topcoat (600g per m<sup>2</sup>) to cover the roof before you start and apply evenly. Thin spots will be evident as the CSM pattern will be visible and you may see a difference in colour. The correct thickness is 0.6mm.

## Q. Which A trims will match up with B trims to give a flush flat finish along the bottom edge of the vertical face?

A. The A170 and B240. The A200 and B260. The A250 and B300.

## Q. Is the material covered by warranty?

A. Yes. Speak to your distributor who will inform you of the material warranty guidelines.

## Q. Can I reapply a topcoat at a later stage?

A. Yes. As long as you sand the existing topcoat to remove the waxy top surface and provide a suitable key before over coating.

## Q. Can I add more than 4% catalyst for quicker curing?

A. No. Scott Bader recommends that you add between 1-4% depending on the ambient temperature. If you add more than 4% you will actually start to slow down the cure speed. Do not use these products below 7.5°C. Scott Bader always recommends that you keep the resin and the topcoat indoors over night before using to keep it as warm as possible.

## Q. What if it rains while installing?

A. If it starts to rain, stop immediately and cover the roof with a tarpaulin or visqueen sheet. Keep the roof as sheltered as possible. The decking or the resin will need to be completely dry before continuing. If you are unable to laminate over a prepared deck before it will rain, then coat the decking with catalysed resin and cover any exposed edges. This will seal the deck and prevent moisture ingress into the deck until the laminate can be applied. After rain stops, use cloths to soak up water, and speed up the drying process by wiping with acetone.

## Q. Do I have to tape the joints of the OSB 18mm?

A. Yes. Scott Bader recommends that all joints are taped using 75mm width woven tape. Scott Bader also recommends using 50mm width tape to cover the joins in the trims and where they meet the board edge, this ensures a better appearance to the finished job.

## Q. How do I fix the trims to the OSB?

A. Scott Bader always recommends that trims are fixed using the 'glue and screw' method, first apply 1 or 2 beads of an adhesive such as an MS-Polymer or Fix ALL adhesive (never a silicone) then screw the trims in place, Scott Bader recommends that you pre-drill the trim to avoid cracking.

## Q. How can I make an anti-slip surface?

A. Scott Bader recommends the use of Iron Silicate grade 3. Either add the Iron Silicate to the topcoat prior to use or tape off the area where the non-slip surface is required and sprinkle the Iron Silicate into the wet topcoat. For a superior lasting finish, you should use Crystic<sup>®</sup> 49PA Excel which is supplied pre-mixed with Polypropylene 'chips' (please ask for availability before placing your order).

## Q. Does the roof make banging and cracking noises after installation?

A. Yes this is normal however it does not interfere with the waterproofing of the roof. These noises will settle down when the roof is fully cured which can take up to a number of years. PLEASE NOTE it is important that the roof structure is correctly completed (see guidelines on installation).

## COMMON PROBLEMS IF NOT INSTALLED CORRECTLY

PROBLEM	REASON
Laminate does not adhere to the boards	Moisture in the deck when laminating
Topcoat is flaking/cracking	Topcoat was applied onto a wet laminate or topcoat has been applied > 0.5mm
Resin cures too fast	<ul style="list-style-type: none"> <li>• Conditions are too hot to lay resin</li> <li>• Too much catalyst has been added</li> </ul>
Topcoat cures too fast	<ul style="list-style-type: none"> <li>• Conditions are too hot to lay topcoat</li> <li>• Too much catalyst has been added</li> </ul>
Resin cures too slowly or not at all	<ul style="list-style-type: none"> <li>• Catalyst has not been added</li> <li>• Temperature below 50°C</li> </ul>
Patchy cure of resin or top coat	Insufficient catalyst and inadequate mixing
Resin appears milky white and does not cure	Water contamination
Excessive fibre pattern	<ul style="list-style-type: none"> <li>• Too little resin</li> <li>• Insufficient consolidation of resin into glass mat</li> <li>• Topcoat too thin</li> </ul>

### ADVICE FOR HOT WEATHER



- Do not use resin or topcoat in temperatures above 35°C
- Always mix smaller volumes, rather than full roof coverage – you need to be able to apply the material before it starts to cure
- Always lay the laminate across the shortest possible run – allows time to apply the resin before it cures
- Check the temperature of the laminate prior to applying the topcoat. The topcoat contains a wax which if it gets too hot on application will not cure properly, leaving a tacky topcoat
- We advise that you lay the topcoat late in the day to avoid the above problem on a hot day



# INSTALLATION GUIDE



## STEP 1 BEFORE INSTALLATION

Ensure all working and weather conditions are correct before commencing installation. Remove any vehicles etc. and take care to mask off any windows below the working area, as drips and airborne particles may be difficult to remove later on. The outside temperature must be above 7.5°C before beginning GRP work. Also, be sure to avoid chances of rain within the installation time as this will affect how the resins or topcoats catalyse and cure.

During winter months, do not apply the topcoat past 2pm, as there will not be sufficient UV daylight necessary to cure the resin and topcoat. Overnight curing is unlikely. Resin and topcoats are temperature sensitive and so we recommend that they are stored inside before use in order to bring them up to the correct temperature (15°C). You can purchase keg or drum heaters if required.



## STEP 2 PREPARING THE ROOF DECK

Strip the old roof covering from the timber substrate and replace with the recommended SmartPly® OSB 18mm boards with tongue and grooved edges - 2400 x 600mm. Before you begin, ensure joists or rafters are level, free from debris, and pre-treated with water based preservatives.

**RECOMMENDED:**  
SmartPly® OSB 18mm  
boards with tongue  
and grooved edges -  
2400 x 600mm



## STEP 3 FIXING THE OSB3 BOARDS

Lay the roof boarders length ways across the supporting joists or rafters, making sure they are in a straight line. The direction arrows indicate the major axis laying direction. Place the shorter edges in the centre of the support rafters using bridging or noggin supports with a minimum bearing of 18mm on the joists or rafters. Recommended fixings are 50mm screws or 65mm ring shank nails maximum, 150mm centres on all joists, rafters and battens.

If using nails, a powered nail gun is preferable to avoid internal ceiling damage. As with any wooden floor or deck, stagger the joints in order to create a stronger structure.

Start placing the boards from the furthest edge from the drip trim, leaving an expansion gap of 10mm between the edge of the board and any rigid upstand e.g. a wall. A 3-5mm gap should be left between cut boards. If possible allow a fall across the roof to allow for natural water drainage. It is also recommended that a drainage channel is incorporated into the roof surface to allow standing water to escape if the construction allows.



## STEP 4 SUPPORT AND FLASHING PREPARATION

Support batons should be fixed around the perimeter edges of the roof, creating a gap for the gutter to fit behind the trim. A 25mm x 40mm baton is recommended. This should be fixed to the top of the fascia boards flush on the top edge of the roof boards. Ensure a suitable sized chase has been made along any connecting walls. The simulated lead flashing will be inserted as a final step (see trim guide on page 15).



## STEP 5 ATTACHING THE ROOF TRIMS

NB. Timber absorbs moisture, so ensure that the deck boards are totally dry before starting the lamination process to avoid future movement that may result in joint failures.

Attach the roof trims and secure the upstands to any adjoining walls ready to take the GRP flashings. Details on all trims can be found within this guide to allow for the selection of the specific trims needed for the roof being installed.

Screw or nail the trims to the roof deck. Flat flashing (F range) and wall fillets (D260) need to be bonded using Fix ALL or similar adhesive. Non-structural adhesives such as silicone or mastic must not be used as the bond strength will not be sufficient to prevent leaks. Use Fix ALL adhesive (8mm bead) along the support batons to hold the trims in place vertically. Join lengths of trims together using Fix ALL adhesive in a 50mm overlap, and slot one trim over the top of the over. Press together firmly.



## STEP 6 TAPING THE JOINTS

Once all trims are in position, tape all the board and trim joints in order to prevent stress cracking at the joints. This is done by applying a 3" wide woven tape to each joint. Mirror the taping procedure on a smaller scale to that used for the main laminate. Decant about 1kg of CrysticROOF® resin into a small bucket and mix well with catalyst (see Catalyst Addition Chart on page 10). Apply the catalysed resin to the joints using either a small brush or roller. Roll out the pre-cut tape over the resin and apply a further amount of resin to the glass tape, consolidating with a small metal consolidation roller. All detailed work may also be completed at this stage. Tape all drain outfalls, channels, pipes and roof fittings using this procedure. You may find a brush easier to use than a roller on complex shapes.





## STEP 7 LAYING THE MAIN LAMINATE

The main laminate may be applied either before or after the bandage has cured. The resin will cure faster in warmer weather conditions – refer to the catalyst addition chart, starting with a smaller quantity.

Pre-cut the glass to the same length of the roof and roll it back up for easier handling. Mix sufficient resin and catalyst to complete the first “run” – the catalyst should change the resin from a blue/ green colour to a darker brown. However, do not allow the resin to become too dark and thick as this means it has started to cure and your working time (usually 20-30 mins) is over. If this happens catalyse some fresh resin and continue to work.

Firstly, prime the boards using a 6-10” fabric roller. Dip the roller into the resin and roll the resin onto the deck and flat surface of the edge trims. Then start to apply the chopped strand mat without waiting – unroll 1m of glass along the lowest part of the roof and align it so that it will not run off once completely unrolled. Apply further resin to the top of the glass using a fabric roller. Use a brush to stipple in awkward areas.

You should ensure that there are no dry white patches once the glass is wet, nor should you ‘flood’ the glass. Use a consolidating metal roller (see ancillaries on page 26), rolling over the glass several times to ensure the resin is spread evenly and any trapped air is released. When correctly wetted out, the glass will appear transparent. Continue this process moving along the roof, priming the board, rolling out more glass, wetting the glass and consolidating, until the far edge of the roof is reached. Continue with the next run of glass overlapping the first by 50mm taking note to overlap using the feathered edge of the glass to ensure a flat surface aspect. Do not step on the wet glass and resin.

## STEP 8 ALLOW CRYSTICROOF® RESIN TO CURE

The CrysticROOF® resin needs to be left to cure for between 1 and 4 hours depending on application conditions. Test the laminate for cure by applying slight pressure with your finger. The laminate is approximately half cured when it is impossible to move the glass fibres within the resin matrix. At this point it will withstand light foot traffic so that you may stand on the laminate to complete the top coating. Try not to leave the laminate overnight before top coating.

## STEP 9 APPLY THE TOPCOAT

The CrysticROOF® topcoat can now be applied. Lightly sand the resin surface before applying the topcoat. Stir the topcoat before use, add the catalyst and thoroughly mix (use same amount as in the resin). After adding catalyst, quickly apply the topcoat, as the curing process will have started and you have limited working time. Apply using a brush or roller, ensuring there is an even thickness across the surface of 0.5mm. A topcoat thickness gauge can be used to measure the thickness. If the topcoat is applied too generously it may crack, if it is too thin it will not cure thoroughly. Topcoat across the whole roof including up and over the face of the roofing trims. If it hasn't been possible to apply the topcoat within 24 hours of laying the laminate, then wipe down the laminate with acetone to gain a good bond surface.

## STEP 10 SIMULATING LEAD FLASHING

Slot the flashing into the pre-chased slots in the wall, with the vertical face sitting on top of the D trims. Secure with Fix ALL adhesive on the back of the C trims. Apply a bead of Fix ALL adhesive into the chase length to seal.

## STEP 11 CLEANING TOOLS

Acetone can be used to clean uncured resin/ topcoat from tools so that they can be reused. Waste product can also be ‘knocked out’ of buckets once cured, so that the bucket can be reused.

## STEP 12 THE FINISHED ROOF

The finished laminate needs to be left to cure which will take several days and should not be walked on during this time. It will not deteriorate and may be cleaned occasionally with soap and warm water. DO NOT USE BLEACH or any strong alkali on the roof. The roof will withstand light foot traffic and may have planters or tiles or other decorative finishes applied to it with no detrimental effects.

## REPAIRING A GRP ROOF

Clean around the damaged area with brush cleaner (acetone). Sand back an area around the damage approx. 10cm, and wipe down with acetone. Prepare a patch of CSM if required, prime the area with catalysed resin, apply the CSM and wet out with further resin. Consolidate for air release.

Once cured, catalyse the topcoat and apply with a brush or small roller and allow to cure. Excessive foot traffic may wear through the topcoat eventually. If this happens then a further coat can be applied to the affected area. Abrade and wipe down the area with acetone first.

## FOR ANTI-SLIP OPTION

A domestic anti slip surface can be achieved by using crushed iron stone silicate, maximum 30% addition by weight into topcoat prior to application or sprinkled directly onto pre-applied wet topcoat.





# ROOFING TRIMS

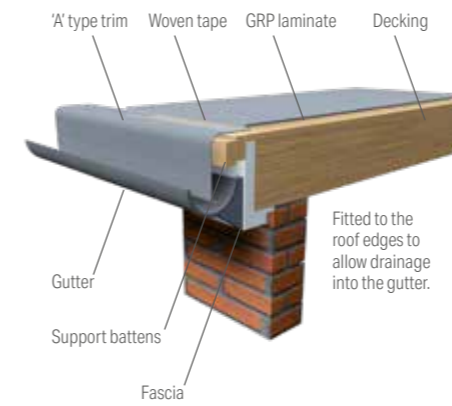
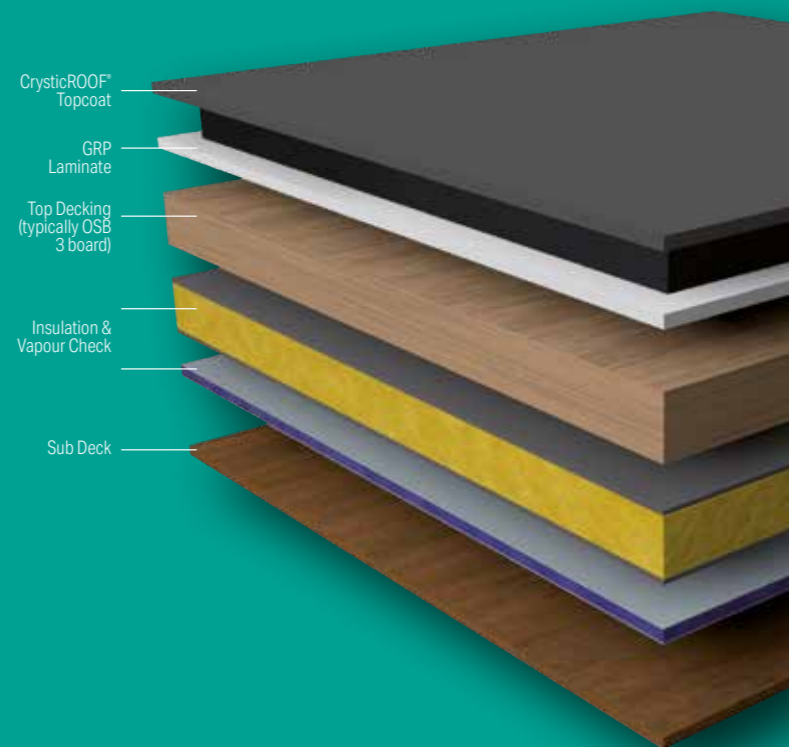


Our GRP roofing trims are manufactured in the UK using high quality resin and CSM fibre. They have been tried and tested to result in the best combination of strength and flexibility. All trim joints and nail/ staple marks should be taped over, resin wetted and consolidated before laying the main laminate.

This diagram demonstrates a typical warm roof construction and can be used as a guide; however, we recommend that you check current building regulations before commencing work. Warm roof constructions generally require edge trims with a greater drop, such as the A250 and B300, due to the additional thickness of the roof.

All measurements are depth x height (drop)

- Standard 3 metres length
- Manufactured with 600g/m<sup>2</sup> mat with 30% filler – premium strength
- Consistent weight and thickness
- Market leading finish and appearance
- Easy jointing – simply overlap by 50mm, and use Fix ALL adhesive
- Easy fixing – nail or staple to the roofing deck

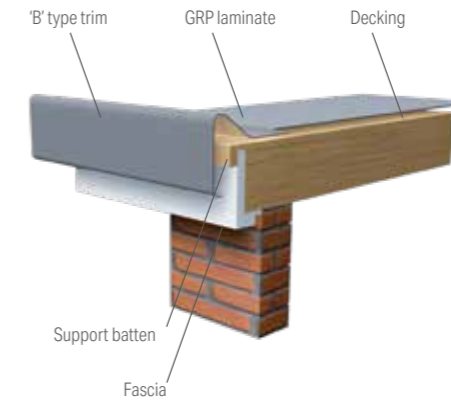
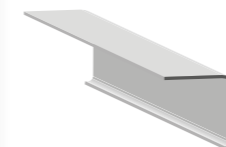


## A170/A200/A250 DRIP TRIMS

Drip trims are fitted to the lowest edge of the roof where water will flow into the gutter. Two support battens should be fitted to the fascia to sit under the trim to allow a space for the gutter to fit behind the trim. Fix ALL adhesive should be used to bond the trim to the batten on the vertical face, and nails used to fix the horizontal face onto the roof decking. Do not nail through the face of the trim – this will show through the final topcoat finish on the front face. To join two lengths together simply overlap (by 50mm) and slot two pieces together using Fix ALL adhesive to bond together, then tape and resin over the joint with woven tape.

### Fitted to the roof edge to slow drainage into gutter

- A170 75 x 84mm
- A200 95 x 90mm
- A250 95 x 140mm
- A200A 95 x 90mm (same A200, but with drip return)

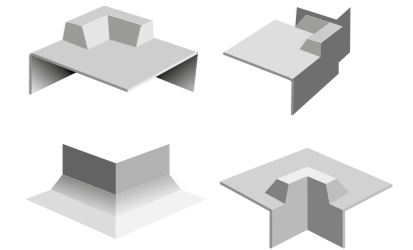
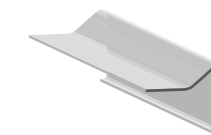


## B240/B260/B300 RAISED EDGE TRIMS

Raised edge trims do not allow the water over the edge into gutters. They should be fitted on top of single battens that have been fixed to the fascia, as there doesn't need to be a gap for a gutter to sit in. Fix ALL adhesive should be used to bond the trim to the batten on the vertical face, and nails used to fix the horizontal face onto the roof decking. Do not nail through the face of the trim – this will show through the final topcoat finish on the front face. To join two lengths together simply overlap (by 50mm) and slot two pieces together using Fix ALL adhesive to bond together, then tape and resin over the joint with woven tape.

### All 3 metre lengths:

- B240 – 100 x 105mm
- B260 – 130 x 125mm
- B300 – 110 x 175mm



## C1, C2, C3 & C4 CORNER TRIMS

Corner trims should be fixed to the deck with nails, and joined to the edge trims using Fix ALL adhesive. Any joints and nail heads should be taped over, resin applied and consolidated before laying the main laminate.

Corner trims may need to be trimmed to size if using the shorter height profile edge trims, they are designed to fit all depths, so will need to be cut back to match the exact trims you are using.





**C5 & C6**  
CLOSURE TRIMS

Fitted using Fix ALL adhesive to bond/seal the closure to the end of the rolled trim (overlap by 50mm), and by nailing the trim to the roofing deck. Tape and resin cover as per the corner trims.

**C5**  
ROOF RIDGE CLOSURE

Preformed closure for application to the end of a roof ridge section. Use with E280.

**C6**  
ROLLED RIB CLOSURE

Preformed closure for application to the end of ER40/30 details.



**D260 FILLET TRIM & C100/C150**  
SIMULATED LEAD FLASHING

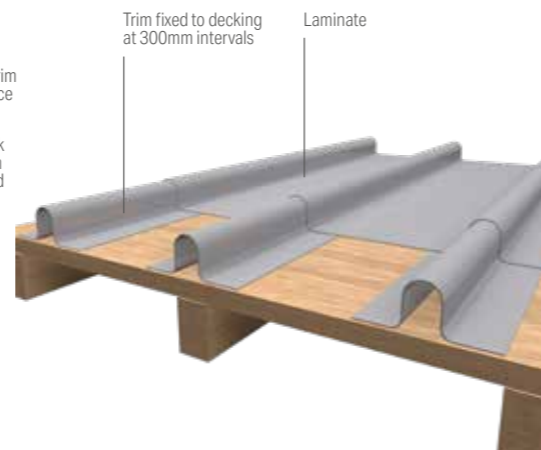
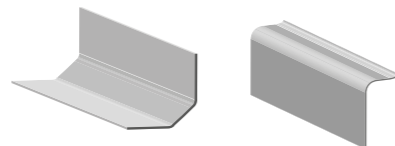
The D260 is a fillet trim used to butt up against walls. It also provides an expansion gap around the edge of the roof. Sit the trim with the vertical against the wall, and the horizontal face on the deck.

To join two lengths together simply overlap (by 50mm) using Fix ALL adhesive to bond together, then tape and resin over the joint with woven tape. Nail the D-trim to the horizontal deck.

The C-trims are lengths of simulated lead flashing with different depths of face. These trims should not be covered with topcoat, as they have a finished face already to simulated lead. The C-trims should be slotted into a pre-chased mortar joint in the brickwork (approx. 35-45mm deep), and sealed in with clear silicone. Fix ALL adhesive should also be used on the back of the C-trims to bond to the D-trim that they sit on top of.

**All 3 metre lengths:**

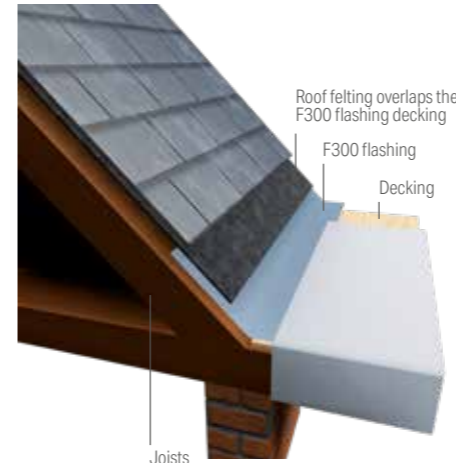
- D260 – 120 x 60 x 80mm
- C100 – 35 x 100mm
- C150 – 35 x 150mm



**ER40/30 PRE-FORMED**  
RIB DETAIL

Used to simulate the appearance of raised rolled lead joints.

The trims should be nailed to the roof deck, any nail heads or joints bandaged and the whole trim laminated over. Use the C6 closures to cap the ends – nail to the deck and use Fix ALL adhesive to secure to the ER40/30 trim.



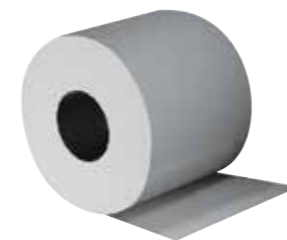
**F300/F600/F900**  
FLAT FLASHING

The F-trim range consists of flat flashing with three different widths. These trims are supplied as 20 metre rolls, and are mainly used where a pitched roof meets a flat roof. It should be nailed onto the roof deck and bent up the pitched roof slope being placed under the existing roof felt and tiles. If only fixed at the base in this manner, the trims will also act as an expansion trim.

The F-trims can also be used around vertical details. Any nails and joints should be taped and resin covered, the remainder of the trim can simply be topcoated during that stage of installation.

**All 20 metre rolls:**

- F300 – 300mm x 20m roll
- F600 – 600mm x 20m roll
- F900 – 900mm x 20m roll

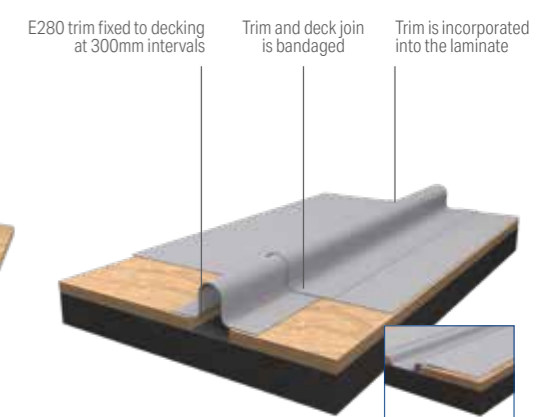
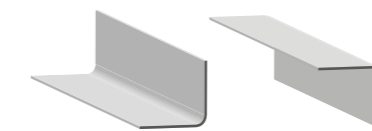


**G150/G275 EXTERNAL 90°**  
ANGLE TRIMS &  
**H150/G275 INTERNAL**  
90° ANGLE TRIMS

These angled trims are used to cover any features that sit perpendicular to the main roof or any other laminated surface.

The G range of external trims have the finished face on the outer face, with the H range being the opposite – the finish is on the inner angle. The trims should be nailed, any joints/nail heads taped and resin covered as per usual.

- H150 – 75mm x 75mm
- H275 – 200mm x 75mm
- G150 – 75mm x 75mm
- G275 – 200mm x 75mm



**G180 & E280**  
EXPANSION JOINT/  
RIDGE ROLL

Use the G180 to allow for expansion on large roofs over 50m<sup>2</sup>. It will also act as an integral gutter to aid drainage. The roof deck will need to be cut to allow the trim to sit in the gap with the flanges of the trim sitting flush to the deck. Nail the trim down, then tape and laminate the trim following the usual process.

The E280 is used to create expansion gaps on large roofs over 50m<sup>2</sup>, but it will also create a ridge roll detail. A C5 closure should be used to cap the open ends. A gap should be under the trim with the flanges sitting flush on the roof deck each side. Nail the trim down, then tape and laminate the trim following the usual process. Apply Fix ALL adhesive and overlap to join trims together, and when joining the C5 closure to the E280.

- G180 – 15 x 140mm
- E280 – 65 x 200mm





# ADDITIONAL INSTALLER'S NOTES

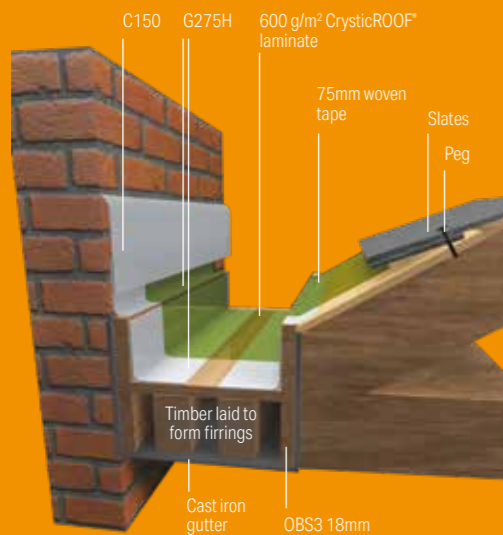
## PITCHED ROOF TO CAST IRON BOX GUTTER AND WALL

In order to kick the stone slates up, a full board will need to be laid along the pitched roof with the batten nailed in place.

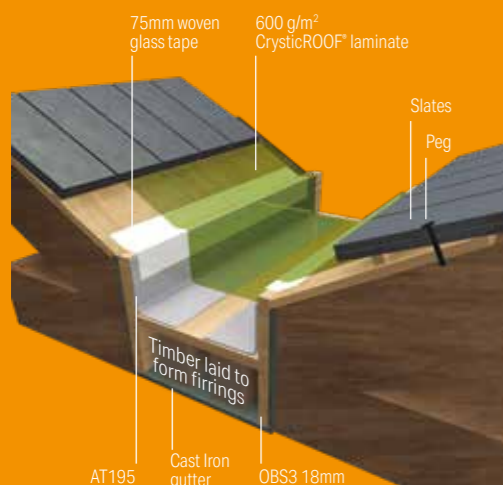
For installation, ensure that G275H Int trims are installed at the bottom of the gutter against the wall. The next stage will involve taking the laminate from the flashing point into the box and up the roof slope fixing the batten in place.

CrysticROOF® standard or CrysticROOF® Premier topcoat should then be applied over the top to finish.

### Pitched roof to cast iron box gutter and wall



### Gutter between pitched roofs



## E280 BRIDGE TO ADJOINING FELT ROOF

Not only is the E280 compatible with C5 closures, but it can be used for creating rolls on any ridge details, expansion joints on large roofs (50m<sup>2</sup> or over) or to bridge GRP to felt roofs.

Where necessary, a sufficient gap in the deck should be cut and the trim then needs to be fixed to each end of the decking at 300mm centres. Ensure the join and fixing points are reinforced with Scott Bader's woven glass tape (which is significantly stronger than chopped strand mat). The laminate can then be applied in the normal manner.

C5 caps can be fixed by applying a 6-8mm bead of Fix ALL adhesive to the inside edge of the overlapping trim and bedded in. The trims can also be bonded together for longer lengths.

The E280 trim is very useful when needing to bridge the GRP to a neighbouring felt roof. Where possible the adjoining felt should be lifted to slide the E280 underneath. Apply two 6-8mm beads of Fix ALL adhesive on the base of the trim edge and on the top where the felt will sit. Use clout or ring nails to hold in place, while adhesive cures. Any exposed edges should have a further bead applied to avoid water/ moisture ingress. The other side of the trim can be fixed and laminated in the normal manner.

**PLEASE NOTE:** E280 is also referred to as expansion joint and ridge roll for pitched roofs.



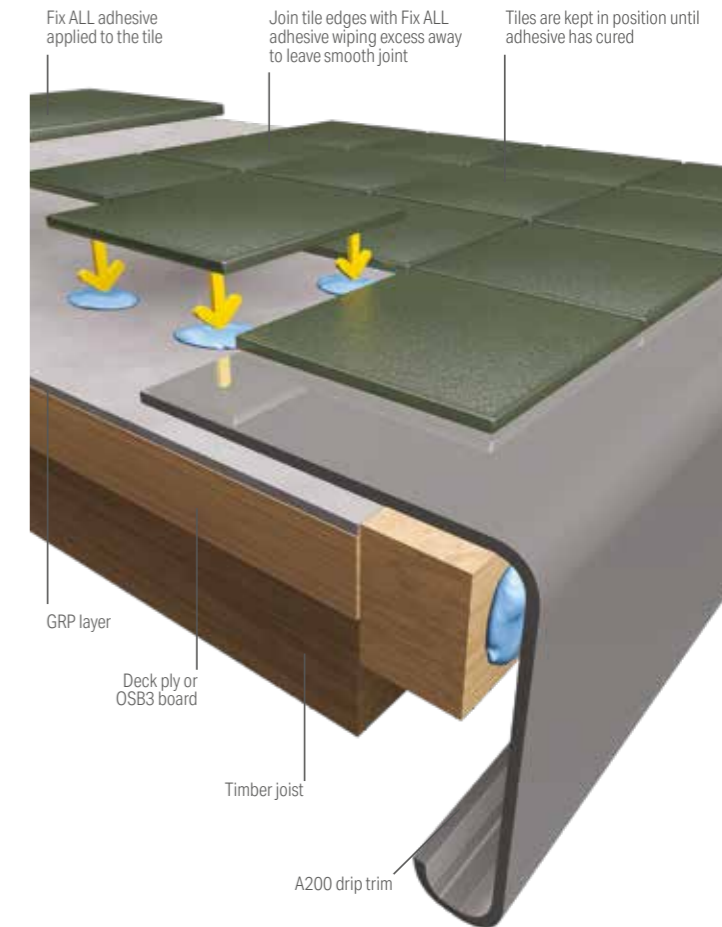
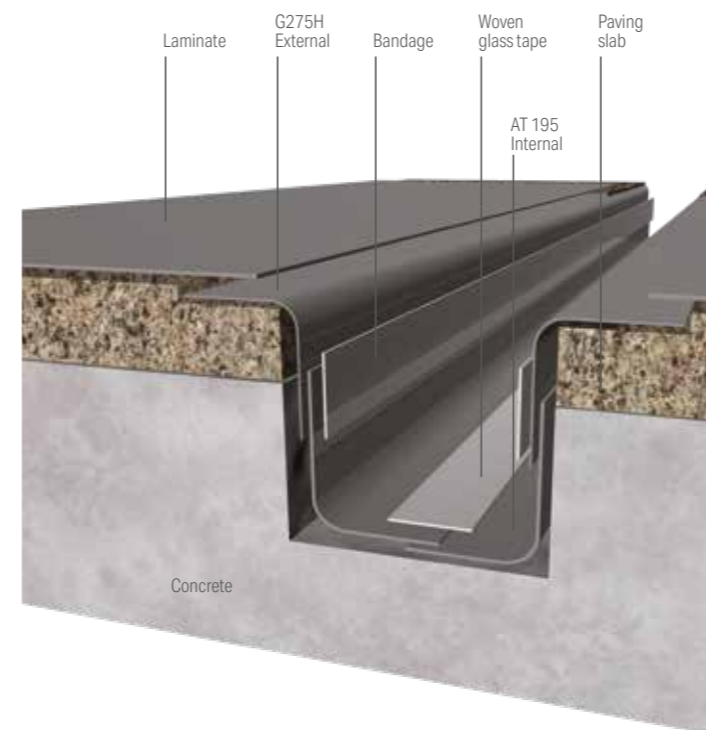
## G275H INTERNAL AND EXTERNAL GULLEY DETAIL

Wherever laminate is used to cover an area which runs parallel to another laminate surface, AT195 internal and external trim is recommended.

For capping and guttering the A195 External trim should be used as the outer surface gives superior adhesion. The A195 internal should be used to form internal corners for the same reason.

The trim should be fixed with either ring nails or staple fixings on both edges where possible. The joint and fixings should then be reinforced with Scott Bader's woven glass tape (which is significantly stronger than chopped strand mat). The laminate can then be applied in the normal manner.

**PLEASE NOTE:** Standard trims are supplied in 3m lengths; G275H Ext (external angle trim), G275H Int (internal angle trim).



## APPLYING RUBBER CRUMB TILES TO A GRP ROOF

Once the GRP roof has fully cured, tiles can be applied.

Preferably tiles should be laid as soon as the roof has cured with any dirt and debris being removed from the roof. If the roof has been left for any length of time and surface dirt and debris have accumulated, it will be necessary to thoroughly clean the surface. It is strongly recommended that a light sanding and surface wipe with acetone be used to ensure the best possible adherence.

Tiles can be applied directly to the roof using a suitable adhesive such as a PU/Fix ALL or a polyester bonding paste. It is not recommended that tile cement or any other cementitious product is used. By finishing the laminate with a non-slip finish, the adhesion can automatically be improved. Always ensure you test for suitable finish/adhesion prior to carrying out the main area of work.

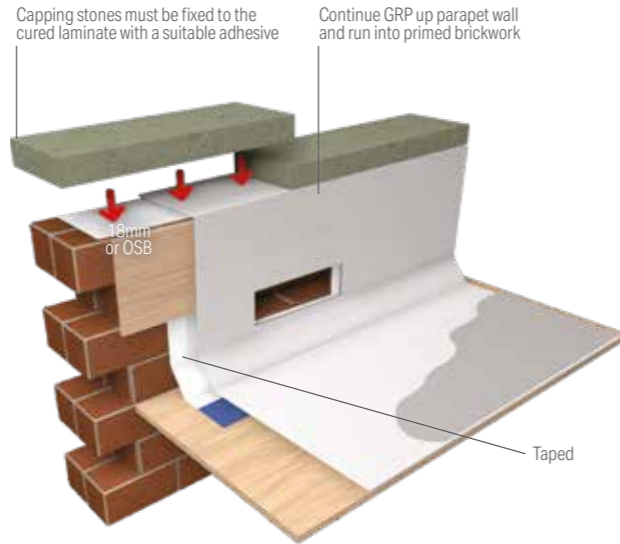
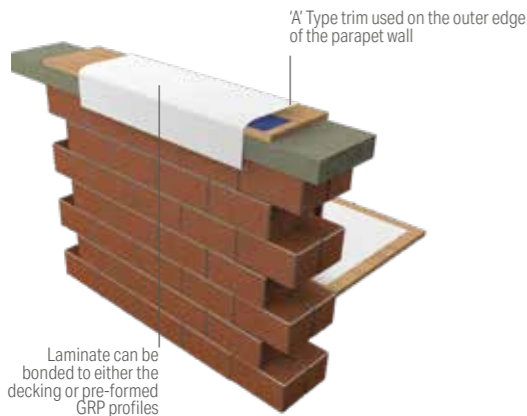
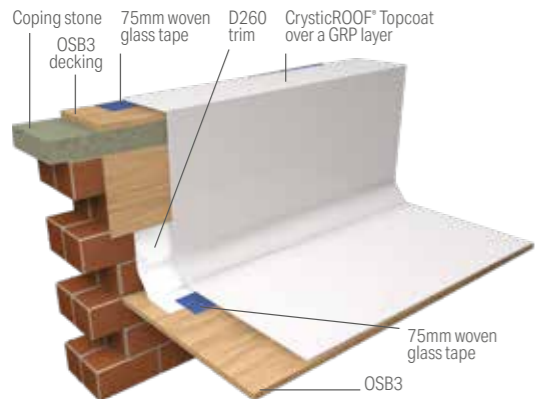


**PARAPET WALL  
(LAID OVER COPING STONE)**

To avoid any ingress of moisture from a failing wall, a parapet wall should be incorporated into the roof.

The wall can be completely covered or alternatively it can be dressed into the wall with the coping stones fixed on after the roof has cured. This example shows the roof laid over the coping stone, with the F300 which should be mechanically fixed to the wall and sealed around the edges with Fix ALL adhesive. Use an A195 External trim to form around the coping stone the finish with a suitable drip trim on the opposite side, then apply the CrysticROOF® system in the normal manner, ensuring all edges are reinforced with woven glass tape.

If a coping stone is required to go on top of the finished parapet, then a non-cementitious adhesive should be used. Please ensure you are satisfied with the bond prior to commencing the main work.



**OUTLET  
THROUGH PARAPET WALL**

It is recommended that the pre-formed GRP outlet lining is constructed at the same time as the trims are fixed to the roof. It is possible for two D260s to be joined together using the woven glass tape in order to seal the joint after the trims have been securely fixed to the decking using clout nails.



**OUTLET  
COMPLETED**

To allow water to flow into the gutter an 'A' type drip trim should be used. In order to allow the drip trims to sit level with the roof and to prevent water from ponding in the outlet, the board forming the outlet should be rebated by 3mm.

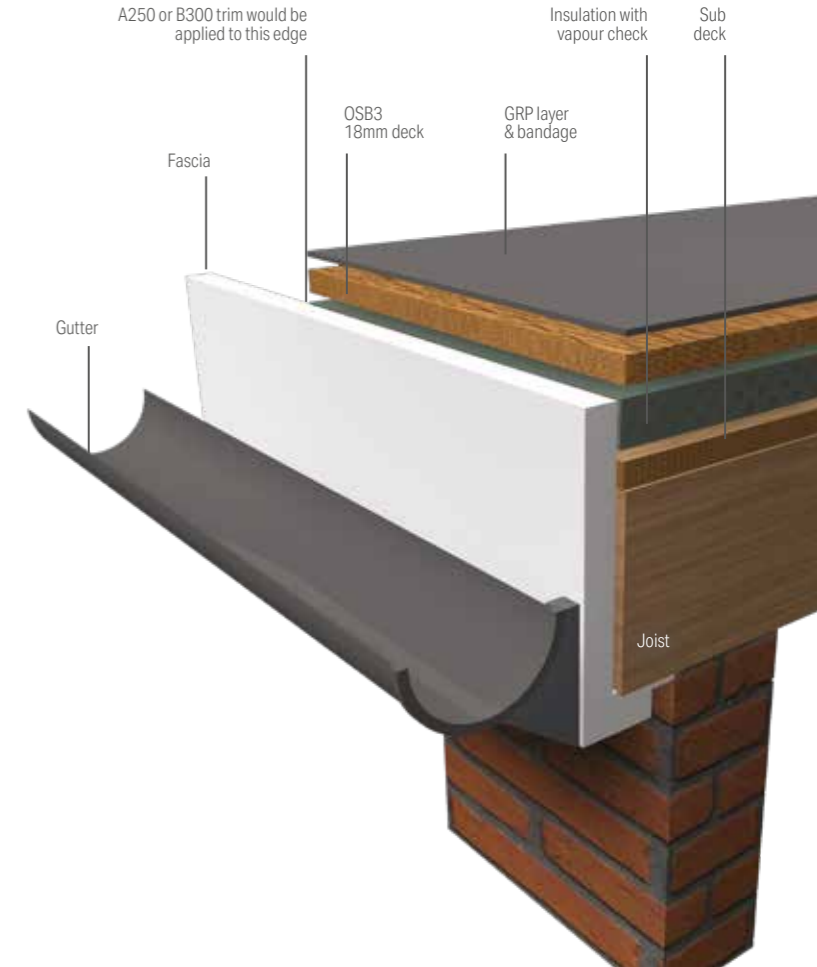
**WARM ROOF  
APPLICATION**

GRP roofs can be used easily to meet either a cold or a warm roof specification.

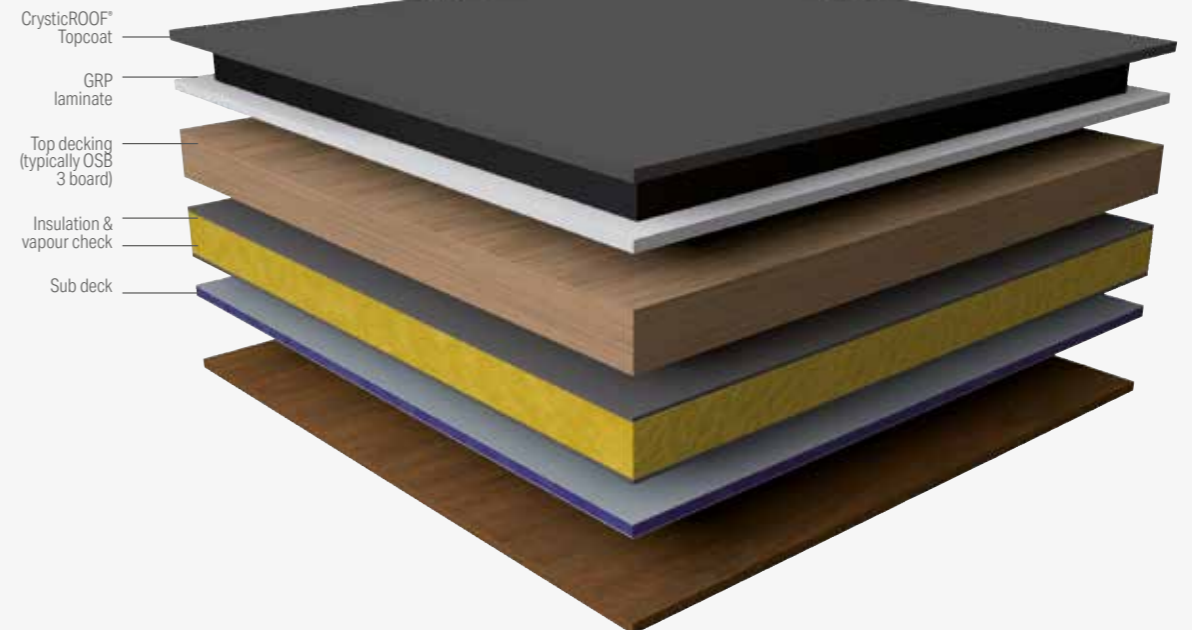
When working with a warm roof, the first step will be to apply a sub-deck to the joists at 300mm centres, followed by a vapour check and laying an insulation sheet over the top. You can also buy insulation sheets with a vapour check in situ.

The next stage involves fixing the decking on top, with screws being used to fix the boards to the joists. These should in turn penetrate to the same depth through the insulation and into the joists as standard fixings do. It is essential that all roof layers are pressed firmly together with no gaps between any of the layers. Once this has been done, GRP will then need to be laminated over the top of the roof as per standard practice.

These roofs typically require larger A250 and B300 edge trim sizes. In order to comply with the Part L regulations of April 2006. The following specification will be necessary to obtain a 'U' value of 0.20 installed; 12mm ply sub deck, 100mm of Kingspan, TR26 or equivalent, 18mm T&G OSB3 board and GRP laminate.



**WARM ROOF  
CONSTRUCTION**





## PRE-FORMED UPVC PIPE OUTLET

To form around, into an inlet or outlet the following steps should be taken.

Abrade the UPVC base/inlet up to 100mm to improve adhesion. It is recommended that Scott Bader Prime-fix is used to ensure the best bond then apply a bead of Fix ALL adhesive around the pipe edges to form a seal around the base. Next the laminate can be formed around/ into the outside or inside of the pipe, using a brush to form the fibreglass by dabbing (not brushing). For a more defined finish, wrap the woven glass tape around the pipe to form a collar. Sand any loose fibres when resin layer has cured, then finish with CrysticROOF® or CrysticROOF® Premier topcoat.

Laminate should be formed around the base and wrapped with 75mm woven tape

UPVC pipe

A continuous bead of Fix ALL adhesive should be used to seal the join once the GRP has cured



CrysticROOF® Topcoat over GRP resin layer



## HARDROCK® MULTI-FIX RECOVERY BOARD

The new HARDROCK® Multi-Fix Recovery Board has been specifically developed for use on flat roof refurbishment projects.

It is manufactured with an integral mineral coated glass fibre fleece which, for adhered membranes, secures a strong bond between membrane and insulation whilst limiting the amount of adhesive required.

The HARDROCK® Multi-Fix Recovery Board is compatible with all commonly used flat roof membranes including:

- Single-ply & EPDM
- Bitumen membranes
- Liquid membrane systems and GRP systems

### ADVANTAGES

- Can be installed directly over the in-situ roof membrane
- Will accommodate minor imperfections on the existing external finish
- Can be adhesively applied or mechanically fixed
- Excellent heat resistance, ideal for torch applied bitumen systems
- A single solution that is compatible with most roof coverings
- Reduces external noise ingress CE Marked
- CE Marked

### PREPARATION



#### PERSONAL PROTECTION EQUIPMENT

Gloves – Industrial Marigold gloves (reusable), or disposable latex gloves. Overalls and goggles to keep your work wear clean and protected.



#### BONDING PRIMER

Damp Seal is a bonding primer to be used on materials such as wood, metal and concrete before laminating. Simply brushed onto clean base substrate, then laminate over once tacky.

### CLEANING



#### ACETONE

Pure acetone used to clean uncured resin and topcoat from brushes, rollers and other equipment. PLEASE NOTE this material is highly flammable. Available in 5 or 25 litre packs.

### COMPONENTS



#### CSM AND WOVEN TAPE

With consistent quality, thickness and stiffness, allowing rapid wet out and air release. Available in 450g/m<sup>2</sup> and 600g/m<sup>2</sup>. Woven tape is used to bandage small gaps, and join trim edges and corners together. Simply cut the required length and wet out with resin onto the surface. Available in widths ranging from 50mm to 100mm.



#### CATALYST

A catalyst is the activator used to start the curing process of the resin or topcoat. A catalyst MUST be added to the resin or topcoat to activate the hardening process. Available in 1kg, 5kg and 30kg pack sizes. 500ml bottles of 'Winter' Catalyst is available for use with our resins and topcoats in colder conditions.



#### FIX ALL

A high quality, single component joint sealant with high adhesive strength. Also weatherproof and waterproof, which makes this product ideal for our roofing system.



#### EASY ONE

Easy sanding body filler.

### TOOLS



#### BUCKETS

Use to mix and carry resins and topcoats. Available in 3, 5, 10 and 25 litre capacities.



#### BRUSHES

Designed for use with fibreglass production, these brushes can be cleaned with acetone, which should be allowed to 'flash off' before reuse.



#### ROLLERS

Fabric Rollers are used to wet out the fibre glass and to evenly spread topcoat across larger areas. Consolidation/ Paddle Rollers evenly disperse resin into the glass fibre, and facilitate air release from the laminate. All rollers can be cleaned with acetone and reused.



#### DOSIMETER

Accurately measure catalyst using a dosimeter. Available in 500ml body with 15ml measuring capacity or 1000ml body with 80ml measuring capacity.



# MATERIALS

## MAN-HOUR ESTIMATING

An experienced contractor may estimate to complete an area of 15m<sup>2</sup> per person per day, including all stages of the process from boarding to completely finishing.

## MATERIALS ESTIMATING

USING 450G/M<sup>2</sup> CHOPPED STRAND MAT\*

USING 600G/M<sup>2</sup> CHOPPED STRAND MAT\*

ROOF SIZE (M <sup>2</sup> )	CHOPPED STRAND MAT (KG)	RESIN (KG)	TOPCOAT (KG)	CATALYST** (GRAMS/ML)	CHOPPED STRAND MAT (KG)	RESIN (KG)	TOPCOAT (KG)	CATALYST** (GRAMS/ML)
5	2.5	6.0	3.6	192	3.3	7.5	3.6	222
10	5.0	12.0	7.2	383	6.6	15.0	7.2	443
15	7.4	18.0	10.7	575	9.9	22.5	10.7	665
20	9.9	24.0	14.3	766	13.2	30.0	14.3	886
25	12.4	30.0	17.9	958	16.5	37.5	17.9	1108
30	14.9	36.0	21.5	1149	19.8	45.0	21.5	1329
35	17.3	42.0	25.0	1341	23.1	52.5	25.0	1551
40	19.8	48.0	28.6	1532	26.4	60.0	28.6	1772
45	22.3	54.0	32.2	1724	29.7	67.5	32.2	1994
50	24.8	60.0	35.8	1915	33.0	75.0	35.8	2215
100	49.5	120.0	71.5	3830	66.0	150.0	71.5	4430

\*These figures allow for a 10% wastage \*\*Catalyst based on 2% usage. Refer to catalyst addition chart for more information.



WORKING IN PARTNERSHIP WITH



YOUR LOCAL SUPPLIER OF CRYSTICROOF® SYSTEMS:



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The information contained within this brochure was correct at time of print, but could be subject to change at any time. The installation guide and materials estimators are 'guides' and should be used in such a manner. If further details are required, please ask for advice prior to installation. Other products in the range – please ask for information before use.