SCOTT BADER

CRYSTIC® ROOF

Keeps the weather outside… *outside*

CrysticROOF is the leading GRP system of choice for experienced contractors

CrysticROOF is an "insitu" cold applied Glass Reinforced Polyester roofing system

- ✔ CrysticROOF is a cold lay liquid applied roofing membrane system
- ✔ CrysticROOF is a durable replacement for traditional roofing materials such as bitumen, felt and lead
- ✔ Suitable for roof structures, walkways and balconies
- ✔ Remains watertight and maintenance free for many years and can add significant value to a property
- ✔ Very easy to apply
- ✔ Eliminates the need to use heating equipment
- ✔ Manufactured in the UK by Scott Bader Company Ltd with over 60 years experience in polyester chemistry
- ✔ Sag-resistant pre-pigmented topcoats to ensure an optimum surface finish

Typical Applications

- Garages
- Sheds
- Dormer Windows
- Extensions
- Balconies

CrysticROOF System

Components of a CrysticROOF

CrysticROOF RESIN

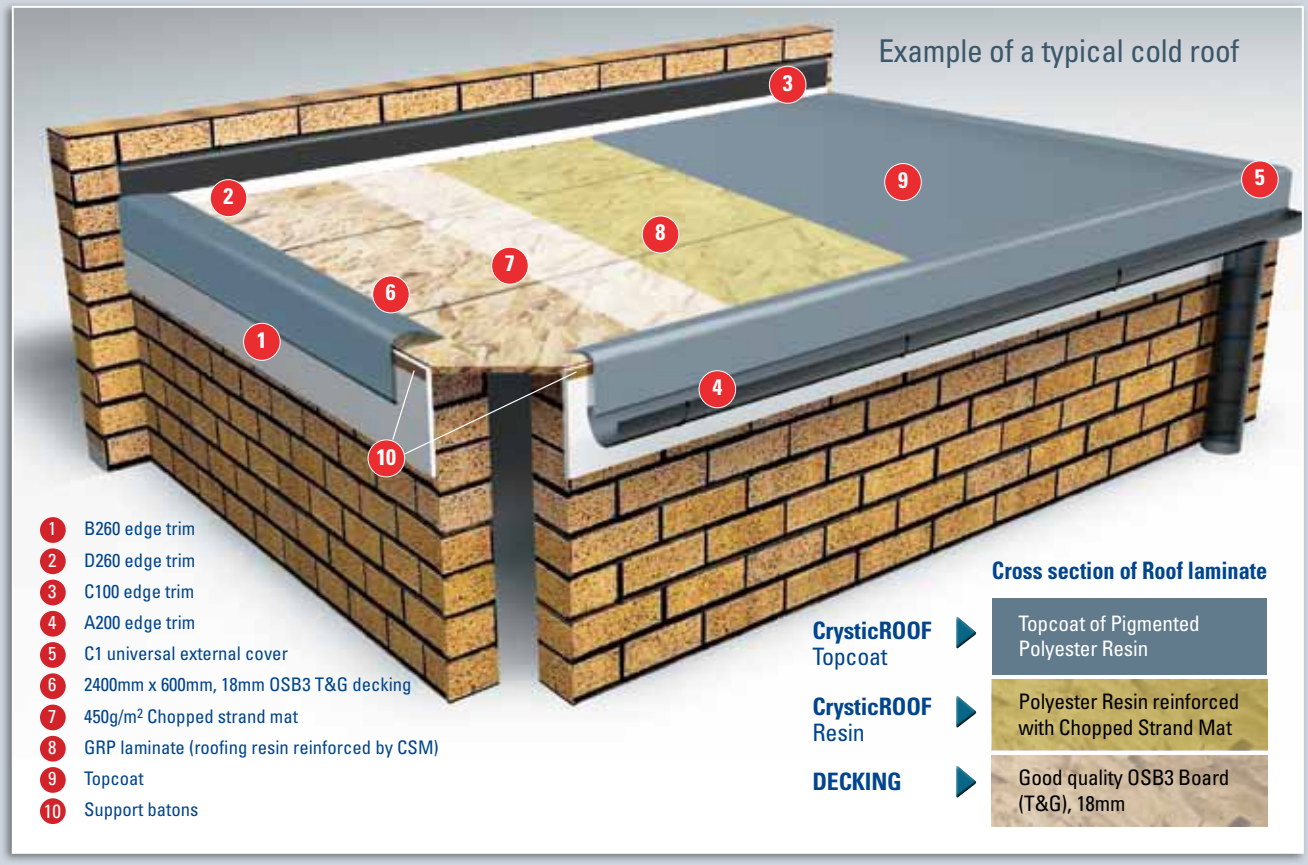
CrysticROOF Resin has been specially formulated for ease of application and to leave a tack free finish suitable for adhesion with the topcoat. It also boasts a colour change system to show that catalyst addition has taken place. Features Low Styrene Emission technology (LSE) - minimising odours.

CrysticROOF TOPCOAT

CrysticROOF Topcoat is made from an Isophthalic base resin which means it gives superior performance in finish and long term weathering. Formulated to be easy to apply by both roller and brush and to provide a tack free finish when cured. The topcoats come pre-pigmented for your convenience.

Available in 2 colours:	Light Grey (6162) and Dark Grey (6927)
Pack Sizes:	5kg, 10kg and 20kg in Dark Grey, 20kg in Light Grey
Non-slip topcoat also available	49PA EXCEL

Chopped Strand Mat & Woven Tape	A single layer of 450g is used in most applications. For a heavier laminate, a 600g CSM can be used. Woven tape is used to bind together trim edges and OSB3 board edges
Catalyst	The activator used to start the curing process in the resin and topcoat
Roof Trims	Edge and corner trims to give excellent finish and appearance all around the roof
OSB3 Board	Used to deck the roof
Tools	Brushes, fabric application rollers, metal consolidation rollers – to apply resin and topcoat



CrysticROOF WARRANTY

CrysticROOF will be leak-free for a minimum of 10 years if installed under the right conditions following the recommended procedures by an experienced contractor. These details are contained within this guide and in the materials datasheets. Like any materials exposed to the elements, UV light degradation may cause the topcoat colour to change. This will not cause the roof to leak or affect the integrity of the roof. Please ask for details if there is a requirement for a GRP roof system with longer warranty period.

Installation Guide

Step 1

Before installation

Ensure that all work is carried out in the correct conditions. Care should be taken to mask off windows and make sure that cars etc below the working area are moved – wind can carry air born particles which will be difficult to remove later on! Before starting any GRP work the outside temperature must be above 7.5°C, and it must be unlikely to rain within 2 hours of completing the job. This is important as the resin and topcoat need to properly catalyse and cure.

During winter months do not start to topcoat after 2pm, as there will not be sufficient sun/daylight to aid the curing process. It's unlikely that the topcoat will cure overnight in winter months. Resins and topcoats are temperature sensitive, so we recommend that they are stored inside before starting a roof to bring them up to temperature (15ºC). You can purchase keg or drum heaters that wrap around the containers if required.

Step 2

Preparing the roof deck

Strip the old roof covering from the timber substrate. If the existing timber deck is unfit, this must be replaced with OSB3 board. We recommend SmartPly® OSB 18mm boards with tongue and grooved edges - these measure 2400 x 600mm. Ensure joists or rafters are straight and level, free from debris, and pre-treated with water-based preservatives before commencing.

Step 3

Fixing the OSB3 Boards

The new roof boards should be laid with their long edges across the supporting joists or rafters and in a straight line. Direction arrows should be visible on the boards to indicate the major axis laying direction. The short edges should be centred on the support joist or rafter. Boards should have a minimum bearing of 18mm on the joists or rafters - bridging and nogging supports should be used. Recommended fixings are 50mm screws or 65mm ring shank nails at 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 such a way to create a strong structure.

Start placing the boards from the furthest edge from the drip trim. An expansion gap of 10mm should be left between the edge of the board and any rigid upstand such as a wall.

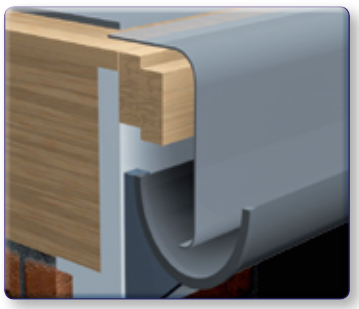
If possible allow a fall across the roof to aid natural water drainage, or if working conditions allow, it is recommended a drainage channel is incorporated in the roof surface to allow standing water to escape from the roof.

Step 4

Support & flashing preparation

Support batons should be fixed around the perimeter edged of the roof to allow a gap for the gutter to fit behind the trim. Its suggested that you use a 25 x 40mm baton, fixed to the top of the fascia boards flush to the top edge of the roof boards.

Ensure a suitable size chase has been made along any connecting walls, into which the simulated lead flashing will be inserted as a final step (see trim guide.



Step 5

Attaching the roof trims

NB. Timber absorbs moisture so before you start the laminating process ensure that the deck boards are totally dry to avoid future movement that may cause joint failures

The roof trims can now be attached and the up-stands secured to any adjoining walls ready to take the GRP flashings. Details on all trims can be found within this guide, allowing you to select the trims needed for the specific roof to be worked on.

Nail or staple the trims to the roof deck. Flat flashing (F range) and angle fillets (D260) need to be bonded using a PU adhesive or Crystic Crestabond from Scott Bader. Non-structural adhesives such as silicone or mastic must not be used as the bond strength will not be sufficient to prevent leaks. Use PU adhesive (30mm bead) along the support batons to hold the trims in place vertically. Join lengths of trims together using PU 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-situ, all the board and trim joints must be "taped "to the roof to prevent stress cracking at the joints. This is done by applying a 3" wide glass tape to each joint. The procedure for taping is the same, but on a smaller scale as that used for the main laminate. Decant about 1kg of CrysticROOF resin into a small bucket and mix with catalyst (see catalyst addition chart). Mix well. Apply the catalysed resin to the joints with 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 the detail 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 before or after the bandage has cured. Remember when measuring resin that on hotter days the resin will cure faster – refer to the catalyst addition chart and start with a smaller quantity.
Pre-cut the glass to the length of the roof and roll it back up for easier handling. Mix sufficient resin and catalyst to complete the first "run" – you'll notice that the CrysticROOF resin is a blue/green colour before adding the catalyst, this will change to a darker brown colour once catalyst is mixed in. If the resin becomes too dark and thick stop immediately as this means it has started to cure and your working time (usually 20-30 mins) is over – re-catalyse some fresh resin if this happens and continue to work. Firstly prime the boards using a 6-10" fabric roller – dip the roller into the resin in the bucket and roll the resin onto the deck and over the flat surface of the edge trims. You can 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 line once completely unrolled. Apply further resin to the top of the glass using a fabric roller or stipple with a brush in awkward areas. You should ensure there are no dry white patches once the glass is wet, nor should you 'flood' the glass. Use a consolidating metal roller (see ancils page), rollering 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 the 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 using slight finger pressure. The laminate is about 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 topcoating.

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, and add the same amount of catalyst as used in the resin and thoroughly mix. The topcoat needs to be applied quickly after adding catalyst as the curing process will have started and you have limited working time. Apply quickly using a brush or roller and ensure there is an even thickness across the surface of 0.5mm.
A Topcoat Thickness Gauge can be used to measure the thickness as if the topcoat is applied too generously, it may crack and 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 first to gain a good bond surface.

Step 10

Simulated 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 PU adhesive on the back of the C trims. Apply a bead of clear silicone sealant into the chase length to seal.

Step 11

Cleaning tools

Acetone can be used to clean uncured resin/topcoat from tools etc if you wish to reuse them. 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 maybe cleaned occasionally with soap and warm water. DO NOT USE BLEACH or any strong alkali on the roof. The roof will withstand 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 solvent. Sand back an area around the damage approx 10cm, and wipe down with acetone. Prepare a patch of glass if required, prime the area with catalysed resin, apply the glass & wet out with further resin. Consolidate for air release.

Once cured, catalyse the topcoat and apply with a brush or small roller. 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

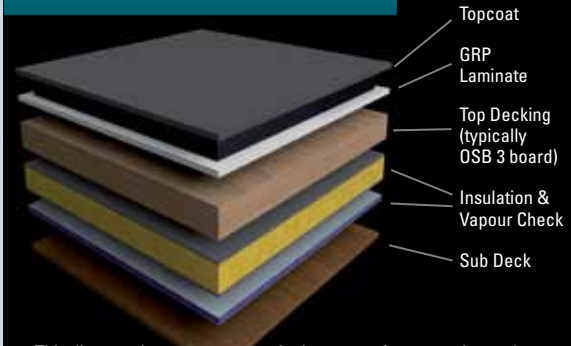
Roofing Trims

Our GRP Roofing trims are manufactured in the UK using high quality resin and glass 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.

- **Standard 3 metres length**
- **Manufactured with 600g/m² mat with 30% filler – premium strength**
- **Consistent weight and thickness**
- **Market leading finish and appearance**
- **Easy jointing – simply overlap by 50mm, and use PU adhesive**
- **Easy fixing – nail or staple to the roofing deck**

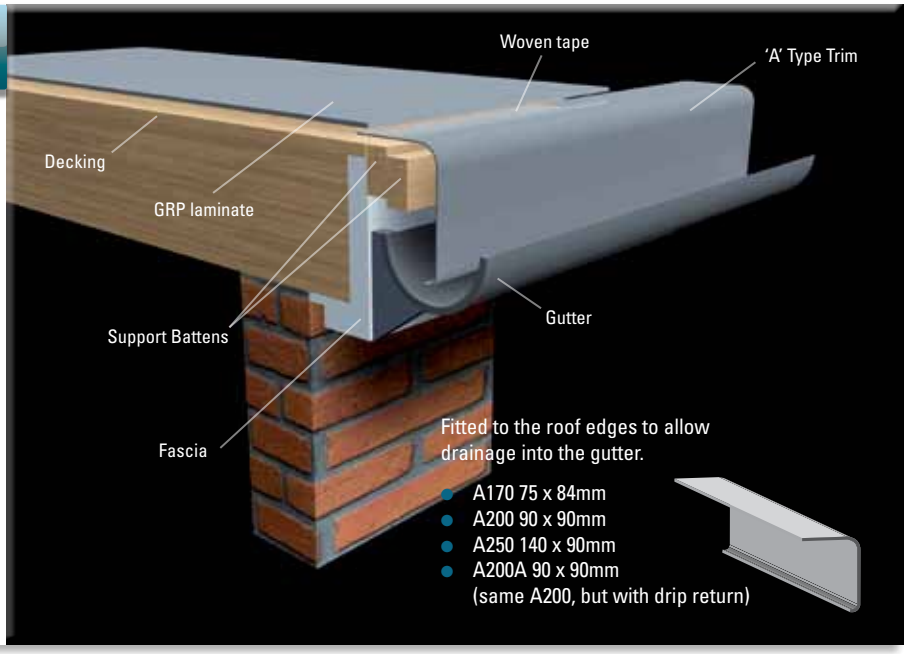
Warm Roof Construction



This diagram demonstrates a typical warm roof construction and can be used as a guide, however we do 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.

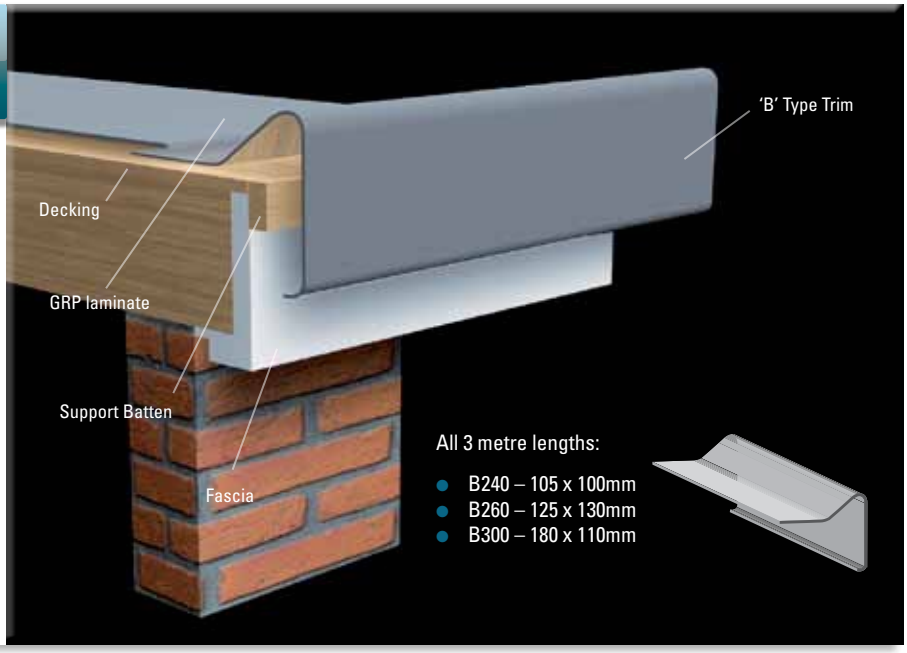
A170/A200/A250 Drip Trims

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. PU 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. Don't 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 PU adhesive to bond together, then tape and resin over the joint with woven tape.



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. PU 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. Don't 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 PU adhesive to bond together, then tape and resin over the joint with woven tape.

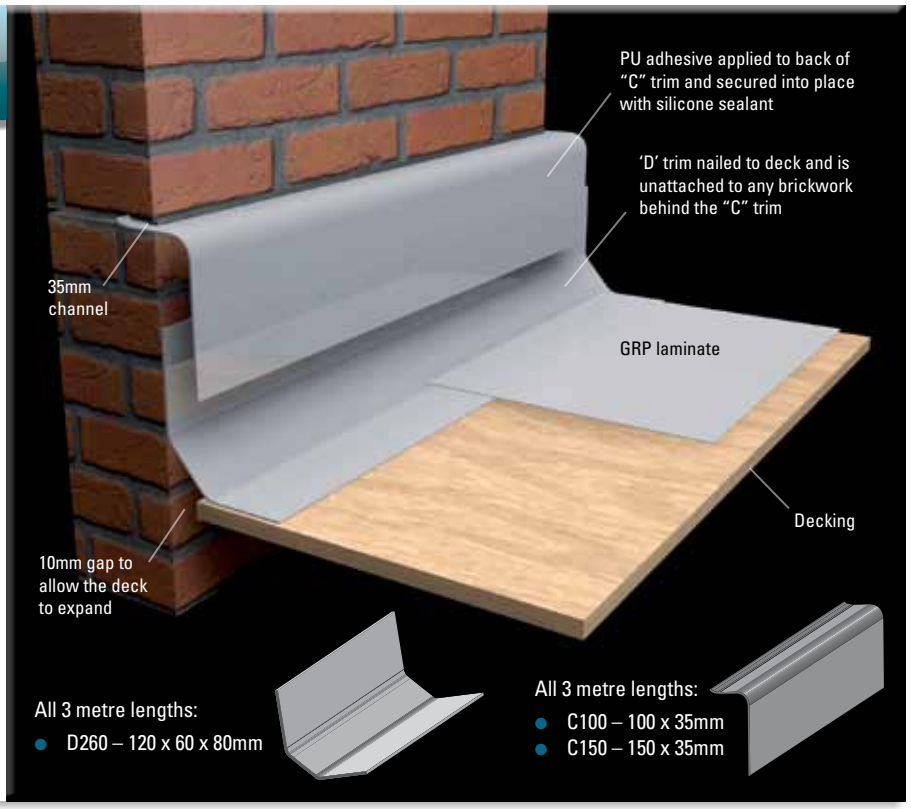


Roofing Trims

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 PU adhesive to bond together, then tape and resin over the joint with woven tape. Nail the D trim to the horizontal deck.

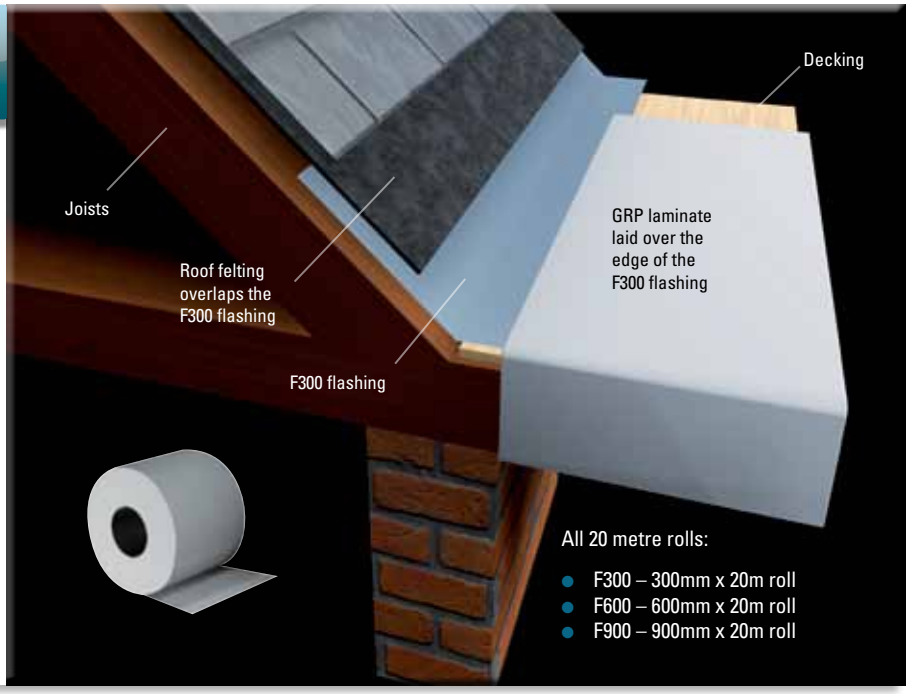
The C trims are lengths of simulated lead flashing with different depths of face. These trims should not be covered with topcoat, as they have a finished face already to simulated lead. The C trims should be slotted into a pre-chased mortar joint in the brickwork (approx 35-45mm deep), and sealed in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



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

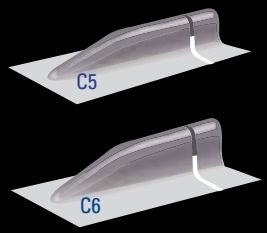


C5 & C6 Closure Trims

Fitted by using PU 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.

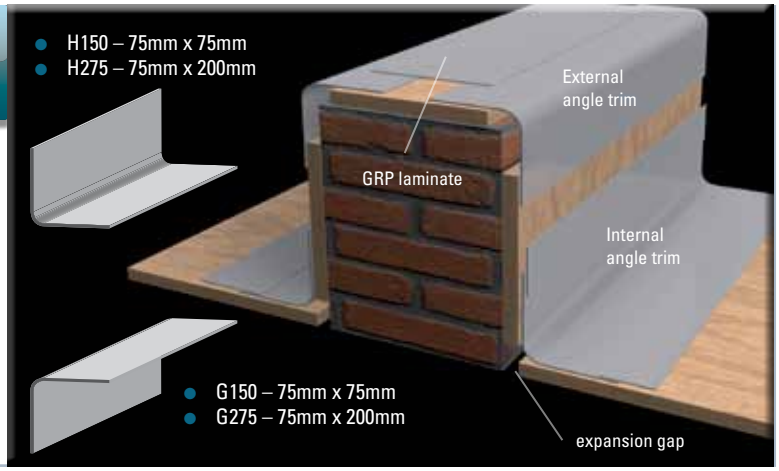


Roofing Trims (continued)

G150/G275 external 90º 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.

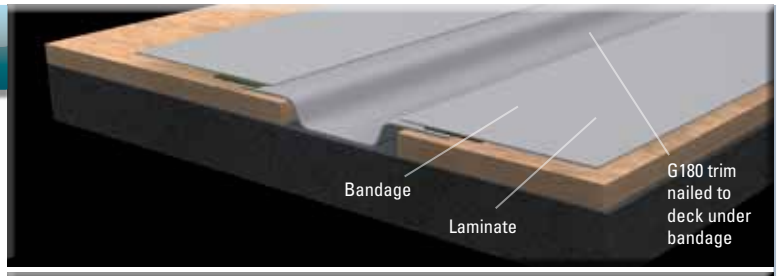
The G range of external trims have the finished face on the outer face, with the H range being the opposite – the finish is on the inner angle. The trims should be nailed, any joints/nail heads taped and resin covered as per usual.

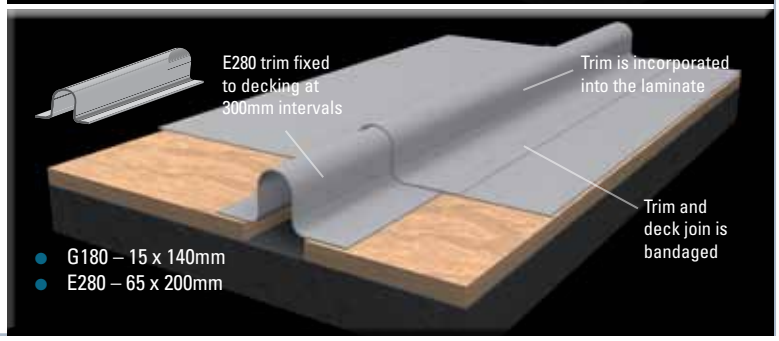


G180 & E280 Expansion Joint / Ridge Roll

Use the G180 to allow for expansion on large roofs over 50m². 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.

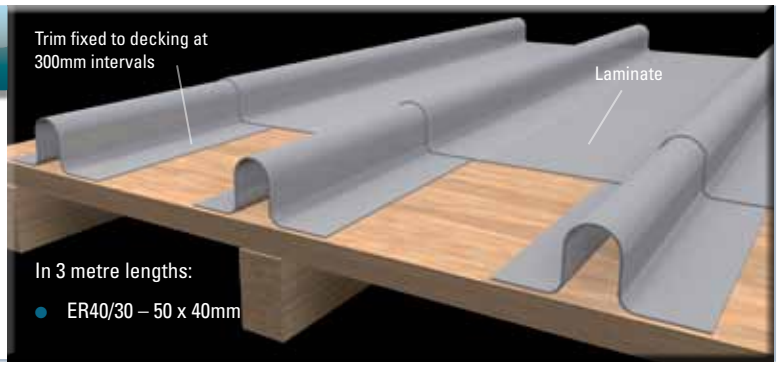
The E280 is used to create expansion gaps on large roofs over 50m², but it will also create a ridge roll detail. A C5 closure should be used to cap the open ends. A gap should be under the trim with the flanges sitting flush on the roof deck each side. Nail the trim down, then tape and laminate the trim following the usual process. Apply PU adhesive and overlap to join trims together, and when joining the C5 closure to the E280.





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 PU adhesive to secure to the ER40/30 trim.



C1, C2, C3 & C4 Corner Trims

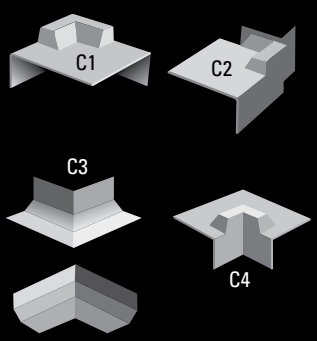
Corner trims should be fixed to the deck with nails, and joined to the edge trims using PU adhesive. Any joints and nail heads should be taped over, resin applied and consolidated before laying the main laminate.
Corner trims may need to be trimmed to size if using the shorter height profile edge trims – they are designed to fit all depths, so will need to be cut back to match the exact trims you are using.

C1 Universal External Corner Trim – Forms a left or right hand corner. Use with A and B range trims.

C2 Fillet to Corner Trim – Use where a flat roof meets an abutting wall. Use with A, B and D260 trims.

C3 External or Internal Fillet Corner trims – Used as a preformed external or internal corner. Avoids mitring in situ. Use with a D260.

C4 Universal Internal Corner Trim – Forms a left or right hand corner. Use with A and B range trims.



CrysticROOF System - Ancillaries

Fibreglass (Chopped Strand Mat)

With consistent quality, thickness and stiffness, allowing rapid wet out and air release.

- Available in 450g/m^2 and 600g/m^2 Standard roll dimension 95cm width x approx 33kg

Woven Tape (Bandages)

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 500g, 5kg and 30kg pack sizes

Catalyst Measuring

Accurately measure catalyst using a dosimeter

- Dosimeter with 500ml body and 15ml measuring capacity
- Dosimeter with 1000ml body and 80ml measuring capacity

Brushes

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

- Wooden handled brushes used to apply resin to wet out the glass fibre. Low cost option.

Fabric rollers

Used to wet out the fibre glass and to evenly spread topcoat across larger areas. Simply push fit the roller head onto the roller frame. Both the roller heads and frames can be cleaned in acetone and reused. Several sizes available:

- 4" – perfect for smaller areas and tight corners
- 6", 7", & 10" – for wetting our larger areas.
- Telescopic extension handles also available, giving 80-135cm extra reach

Consolidating rollers

Can be cleaned with acetone, which should be allowed to 'flash off' before reuse:
A variety of widths available depending on the size of work area:

- Paddle rollers with horizontal grooves used to evenly disperse resin into the glass fibre, and facilitate air release from the laminate.
- Fin rollers with vertical grooves for best air release, and less resin splashing than paddle rollers.

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 litre or 25 litre packs.

Personal Protection Equipment

Protect both yourself and your clothes from the products you're using.
Gloves –
Industrial Marigold gloves (reusable), or disposable latex gloves

Kleen-all paste –
For hand cleaning, 1 litre

Buckets

Use to mix and carry resins and topcoats.
Available in 3, 5, 10 and 25 Litre capacity.

Infrared Thermometer

Infrared thermometer with laser alignment to accurately measure the surface temperature of the roof. Allows calculation of correct level of catalyst addition needed for your working conditions. Simply aim the device at the roof, press the read button and the surface temperature is instantly displayed. Supplied with batteries and a 1 year guarantee.

For your own personal protection, you must ensure you understand the safe handling of all products within the CrysticROOF system, especially acetone and catalysts. Ask your supplier for copies of MSDS's and technical data sheets.

CrysticROOF System - 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 recommend that you allow for expansion joints (see trim guide) every 50m^2. 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. Glass 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 M50. 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 stay 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.

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^2) to cover the roof before you start and apply evenly. Thin spots will be evident as the glass pattern will be visible and you may see a difference in colour.

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 a warranty?

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

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

A. No. Scott Bader recommend 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 recommend that you keep the resin and the Top Coat indoors over night before using to keep it as warm as possible.

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. What if it rains whilst 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 recommend that all joints are taped using 75mm width woven tape. Scott Bader also recommend 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 recommend 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 PU adhesive (never a silicone) then screw the trims in place, Scott Bader recommend that you pre-drill the trim to avoid cracking.

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

A. Scott Bader recommend 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 49PA Excel which is supplied pre-mixed with Polypropylene 'chips' (please ask for availability before placing your order).

Advice for summer months/ 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 that if 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

CATALYST ADDITION CHART

% of Catalyst to Resin	4% Catalyst	3% Catalyst	2% Catalyst	1% Catalyst
Temperature	7.5-13° C	13-20° C	21-28° C	29-35° C
Season	Winter / Cold weather	Winter / Cold weather	Spring / Autumn / Ambient	Summer / Warm weather

RESIN	CATALYST	CATALYST	CATALYST	CATALYST
500g	20ml	15ml	10ml	5ml
1kg	40ml	30ml	20ml	10ml
2kg	80ml	60ml	40ml	20ml
3kg	120ml	90ml	60ml	30ml
4kg	160ml	120ml	80ml	40ml
5kg	200ml	150ml	100ml	50ml
6kg	240ml	180ml	120ml	60ml
7kg	280ml	210ml	140ml	70ml
8kg	320ml	240ml	160ml	80ml
9kg	360ml	270ml	180ml	90ml
10kg	400ml	300ml	200ml	100ml

Catalyst 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 a 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^{o}C. Please note resins and topcoat will cure a lot quicker in warmer conditions.
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%.
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 supress the heat gain, (do not use this once the water has been added).

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	Conditions are too hot to lay resin Too much catalyst has been added
Topcoat cures too fast	Conditions are too hot to lay Topcoat Too much catalyst has been added
Resin cures too slowly or not at all	Catalyst has not been added Temperature below 5^{0}C
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	Too little resin Insufficient consolidation of resin into glass mat Topcoat too thin

Materials Estimating

Roof Size (m^2)	Using 450g/m^2 Chopped Strand Mat*				Using 600g/m^2 Chopped Strand Mat*			
	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 Additon Chart for more information

Man-hour Estimating

An experienced contractor may estimate to complete an area of 15m² per person per day – including all stages of the process from boarding to completely finishing.

About Scott Bader

Established in 1920, Scott Bader is the UK industry leader in the production of Polyester Resins, Gelcoats, Topcoats and Adhesives. Working to recognised quality standards such as ISO 9001 and ISO 14001. Scott Bader is renowned for manufacturing high quality materials for the fibreglass industry backed by unrivalled technical expertise & support to customers. Scott Bader is a multinational company with head quarters based in the UK and global manufacturing sites. Crystic products are sold by an extensive network of global distributors.

E&OE
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.

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CrysticROOF Premier
FAC approved (BS476 Part 3) fire retardant topcoat

Crystic 49PA Excel
Non-slip topcoat

Crystic Fireguard 75PA Excel
Intumescent fire retardant topcoat for outstanding fire protection (BS476 Part 7 Class 1)

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