

## GRP Roof 1020 PRO Application Guide

### Features and Benefits

GRP Roof 1020 PRO is the new GRP system from Res-Tec that features enhanced performance compared to traditional fibreglass systems, including:

- Rain-resistant during application - if installation is halted due to rainfall, the system will still cure through without the need to strip off un-cured resins
- Flexibilised technology - much more resistant to cracks and splits than standard rigid GRP systems
- Easy repairs and alterations - no need to grind back top coat to reveal base coat should any repairs or alterations be required.
- Superior adhesion - excellent inter-coat and trim adhesion to greatly reduce the risk of flaking / delamination

### Components Check List

Before you start, check that you have all the items you need. If in doubt consult your GRP Roof 1020 PRO distributor.

#### Deck / Substrate and Fixings

- OSB3 TG4 deck
- Treated timber battens (for rigidity to edge trims)
- Fixings for OSB TG4 deck (ring shank nails, sheradised or plated woodscrews (min 75mm)
- Fixings for trims (18mm galvanised clout nails)

#### Main System Components

- GRP Roof 1020 PRO Base Coat
- GRP Roof 1020 PRO Top Coat
- GRP Roof 1020 PRO Powder Hardener
- ResTrims
- Res-Tec 450g/m<sup>2</sup> chopped strand fibreglass mat reinforcement
- Taping mat (for trim joints and other details)

#### Additional Components

- Res-Tec solvent resistant medium pile rollers
- Res-Tec paddle roller
- Stirrer
- Paddle roller
- Application brushes (for difficult to reach areas)
- Calibrated buckets (for measuring resin quantities and mixing in catalyst)
- Protective equipment (latex gloves, respiratory/dust mask and safety goggles)
- Medium grit sand paper
- Cloths / rags

#### Additional Components

- Acetone
- MS Polymer adhesive, such as Soudal Fix All (High Tack) adhesive or equivalent (for bonding trims).
- Anti-slip finish media (for balcony applications)

#### Suitable Application Conditions

GRP Roof 1020 PRO should be applied in dry conditions between 5°C\* and 30°C ambient air temperature. Do not begin if conditions could fall outside of the temperature range of if rain appears likely.

#### GRP Roof 1020 PRO Base Coat

#### Coverage Rates & Quantities

GRP Roof 1020 PRO Base Resin is applied at a coverage rate of 1.2 Kg/m<sup>2</sup> (1.0 Litre/m<sup>2</sup>) when using 450g/m<sup>2</sup> fibreglass mat reinforcement.

*NB: The coverage rate is 1.6 Kg/m<sup>2</sup> (1.33 Litre/m<sup>2</sup>) when using 600g/m<sup>2</sup> fibreglass mat.*

**IMPORTANT** – Using too much resin is detrimental to the system. Always make sure you use the right amount.

Table 1.1 overleaf shows the quantity of Base Coat resin required for typical roof area sizes.

Roof Area	Amount of Base Resin required for Main Laminate when using 450g/m <sup>2</sup> mat		Amount of Base Resin required for Main Laminate when using 600g/m <sup>2</sup> mat	
	Approx. Weight	Volume	Approx. Weight	Volume
5 m <sup>2</sup>	6.0 kg	5.0 ltrs	8.0 kg	6.6 ltrs
10 m <sup>2</sup>	12.0 kg	10.0 ltrs	16.0 kg	13.3 ltrs
15 m <sup>2</sup>	18.0 kg	15.0 ltrs	24.0 kg	20.0 ltrs
20 m <sup>2</sup>	24.0 kg	20.0 ltrs	32.0 kg	26.6 ltrs
25 m <sup>2</sup>	30.0 kg	25.0 ltrs	40.0 kg	33.3 ltrs
30 m <sup>2</sup>	36.0 kg	30.0 ltrs	48.0 kg	40.0 ltrs
40 m <sup>2</sup>	48.0 kg	40.0 ltrs	64.0 kg	53.2 ltrs
50 m <sup>2</sup>	60.0 kg	50.0 ltrs	80.0 kg	66.5 ltrs
70 m <sup>2</sup>	84.0 kg	70.0 ltrs	112.0 kg	93.0 ltrs
100 m <sup>2</sup>	120.0 kg	100.0 ltrs	160.0 kg	133.0 ltrs

NB - It is recommended that an additional 10% material is included in order to cover wastage during application.

### Powder Hardener Levels

GRP Roof 1020 PRO Base Resin requires powder hardener at a **minimum of 2%** and a **maximum of 4%** depending on temperature. To ensure that the curing process is not impeded:

- Never use less than 2% even in hot conditions. Res-Tec Summer Inhibitors are available to extend pot life and cure times in hot conditions.
- Never use more than 4% even in cold conditions. Res-Tec Winter Accelerators are available to decrease pot life and cure times in cold conditions.

The table below provides recommended powder hardener addition rates depending on GRP Roof 1020 PRO Base Resin quantities and temperature ranges. Powder hardener is added to GRP Roof 1020 PRO Resin in the form of scoops using the scoop provided.

**IMPORTANT** – The temperature ranges shown are to be used as a guide to the amount of powder hardener to use. Always test the pot life in the prevailing conditions by performing a test mix at the suggested powder hardener level before you start application. Adjust powder hardener levels up or down as required to gain the pot life you require. Remember it is always possible to use intermediate levels (e.g. 2.5%) to gain close control of the pot life.

It is not recommended to catalyse more than ~10 kg at a time. When working large areas decant the resin into manageable quantities and always be aware of your pot life.

Recommended Powder Hardener Addition Rate:		4%	3%	2%
		5 - 10°C	11 - 17°C	18 - 30°C
Temperature Range:				
Amount of GRP Roof 1020 PRO Base Resin		Number of Hardener Scoops	Number of Hardener Scoops	Number of Hardener Scoops
Volume	Weight			
1.0 ltr	1.2 kg	4	3	2
2.0 ltr	2.3 kg	8	6	4
3.0 ltr	3.5 kg	12	9	6
4.0 ltr	4.6 kg	16	12	8
5.0 ltr	5.8 kg	20	15	10
6.0 ltr	6.9 kg	24	18	12
7.0 ltr	8.1 kg	28	21	14
8.0 ltr	9.2 kg	32	24	16
9.0 ltr	10.4 kg	36	27	18
10.0 ltr	11.5 kg	40	30	20

### GRP Roof 1020 PRO Base Coat Application Instructions

1. GRP Roof 1020 PRO is always applied to an OSB3 deck. The application instructions that follow are based on applying to a fully trimmed-out roof, with trim jointing and other localised detailing work having been carried out. For instructions please refer to other Res-Tec Roofing System Application Manuals that cover these stages.

2. Brush all loose debris from roof substrate. Check roof is clean, dry and no fixings protrude.
3. Check all boards and trim joints have been taped and feathered where necessary.
4. Stir the Base Coat resin thoroughly in the original container – mixing from top to bottom until a uniform colour and haze is present.
5. Pour the calculated amount of resin into calibrated bucket / suitable container on weighing scales and replace lid on resin can to prevent contamination or unnecessary losses to atmosphere. Do not attempt to mix more than 10 Kg / 8.5 litres at one time, and during the hot summer months this should be considerably reduced (see Table 1.1 on page 15 for quantity guidance).
6. Scoop in the correct amount of powder hardener direct into the measured-out resin and mix thoroughly for a minimum of 2 minutes to ensure the hardener dissolves.  
and suitable rubber gloves). Read the full safety information before starting.
7. Apply GRP Roof 1020 Base Resin using a Res-Tec medium pile solvent-resistant roller, working the resin evenly over the substrate to be matted at this point. Ensure that the resin is also worked into all OSB3 TG4 joints. Do not pour from bucket (this will create resin rich areas), rather dip the roller and spread for the most even coverage. Take care to work methodically and avoid standing in wet resin.
8. Place the matting onto the resin wetted boards, allowing for 50mm overlaps onto the trims. Ensure the mat is correctly orientated so the straight cut edge is overlapped by the feathered edge of the next strip. All fixings must be covered with mat.
9. Apply a further light coat of resin (wet on wet) using the roller. Do not apply too much resin at this stage – it is unnecessary and may result in a weaker roof membrane if over-applied. Allow a little time for the resin to impregnate the mat before deciding whether more is needed (only where voids or prominent fibre can be seen or mat does not become transparent within a few minutes).
10. Work the resin into the mat using the metal paddle roller, allowing it to spread and soak thoroughly. Allow plenty of time for this operation. The mat will soak up the resin and turn from white to translucent. Consolidate well and roll out all air bubbles with metal paddle roller. Avoid rolling too vigorously as this will create unnecessary splashes with wasted material and risk of contaminating nearby areas.

Note: Pinholes, which are small “pock marks” on the surface of the finished roof, are not always caused by a lack of Top Coat resin, rather a lack of Base Resin or insufficient paddle rolling resulting in trapped air. More efficient use of the paddle roller will help to eliminate pinholes by highlighting bare and unsaturated areas.

11. Inspect thoroughly and if there appear to be any areas with insufficient resin (voids, prominent fibres or spots remaining white) apply a little extra and repeat 9.
12. Carry on with the next piece of the fibreglass mat repeating the steps above, using 50mm overlaps ensuring the feathered edge is correctly orientated, until the roof is completely covered. Check as you go for complete fibre wet-out and prominent fibres.  
Curing time is normally between 30 and 120 minutes, dependent upon temperature and catalyst levels. When properly cured it should be virtually tack-free it should not be easy to dislodge glass strands from the laminate surface.

Accurate measuring of the immediate working area, appropriate resin quantities and uniform application will ensure the correct resin to mat ratio. When adequately cured to progress to the next stage.

### Inspection of Base Coat

Footwear must be thoroughly clean and dry, or base coat will be contaminated and the top coat will not fully adhere. Look for imperfections and fibre prominent areas to which a further thin application of base should be applied.

Prominent strands can be touch-sanded using sand paper. For any defective Base Coat, where necessary cut out the faulty areas and relay the Base Coat and matting – overlapping by 50mm in all directions (repairs are easier at this stage than later). When making the repair, tear a patch from the fibreglass matting to create a feather edge on all sides (this will make the repair less visible). The patch will bond to the main mat to form a joint-free surface.

### What to do if Rain Stops Work

If the Base Resin has been laid and it rains on the roof during the curing process the following should be carried out within 7 days. After that it may be necessary to reapply the full base laminate (consult Res-Tec Technical Services for further details)

- Dry the area using a blower or cloths. **IMPORTANT** – Never use an open flame to dry the roof.
- Sand down any wicks or rough areas as normal
- Thoroughly wipe the roof with acetone and allow to flash off (this is important as it takes the last of the moisture off that may be in the mat fibres/texture of the roof)
- Apply the top coat as normal ( if the rain has pitted or textured the roof then a bit of extra working may be required with the top coat to get an even coverage)

## GRP Roof 1020 PRO Top Coat

### Ensuring the Base Coat is Cured

The Base Coat must be adequately cured before applying the Top Coat. Depending on application conditions and catalyst levels this should be between 30 and 120 minutes (but may be longer in very cold conditions).

To check if it is cured enough to apply the Top Coat, using a gloved finger apply light pressure to the base coat – if the fibres within the matting are set and not easily disturbed then preparation for top coating can begin. Important – The second coat should be applied as soon as possible, there is a maximum over coating time of up to 7 days. After this period cleaning with acetone will be required which will allow another 7 days over coating time. If left for longer than 14 days consult your distributor for advice.

### Coverage Rates & Quantities

GRP Roof 1020 PRO Top Coat is applied at a coverage rate of 0.66 Kg/m<sup>2</sup> (0.5 Litre/m<sup>2</sup>). Please refer to Table 2.1 below for quantity of Top Coat resin required for typical roof area sizes. **IMPORTANT** – Accuracy with coverage rates is essential. Do not apply the Top Coat too thickly or it may crack or too thinly as it may not cure and will not give full waterproof protection. **IMPORTANT** – Using too much resin is detrimental to the system. Always make sure you use the right amount. NB - It is recommended that an additional 10% material is included in order to cover wastage during application.

Roof Area	Amount of Top Coat Resin Required	
	Approx. Weight	Volume
5 m <sup>2</sup>	3.3 kg	2.5 ltrs
10 m <sup>2</sup>	6.6 kg	5.0 ltrs
15 m <sup>2</sup>	9.9 kg	7.5 ltrs
20 m <sup>2</sup>	13.2 kg	10.0 ltrs
25 m <sup>2</sup>	16.5 kg	12.5 ltrs
30 m <sup>2</sup>	19.8 kg	15.0 ltrs
40 m <sup>2</sup>	26.4 kg	20.0 ltrs
50 m <sup>2</sup>	33.0 kg	25.0 ltrs
70 m <sup>2</sup>	46.2 kg	35.0 ltrs
100 m <sup>2</sup>	66.0 kg	50.0 ltrs

### Powder Hardener Levels

GRP Roof 1020 PRO Top Coat requires powder hardener at a **minimum of 2%** and a **maximum of 4%** depending on temperature. To ensure that the curing process is not impeded:

- Never use less than 2% even in hot conditions. Res-Tec Summer Inhibitors are available to extend pot life and cure times in hot conditions.
- Never use more than 4% even in cold conditions. Res-Tec Winter Accelerators are available to decrease pot life and cure times in cold conditions.

The table below provides recommended powder hardener addition rates depending on GRP Roof 1020 PRO Top Coat quantities and temperature ranges. Powder hardener is added to GRP Roof 1020 PRO Resin in the form of scoops using the scoop provided.

**IMPORTANT** – The temperature ranges shown are to be used as a guide to the amount of powder hardener to use. Always test the pot life in the prevailing conditions by performing a test mix at the suggested powder hardener level before you start application. Adjust powder hardener levels up or down as required to gain the pot life you require. Remember it is always possible to use intermediate levels (e.g. 2.5%) to gain close control of the pot life.

It is not recommended to catalyse more than ~10 kg at a time. When working large areas decant the resin into manageable quantities and always be aware of your pot life.

Recommended Powder Hardener Addition Rate:		4%	3%	2%
		5 - 10°C	11 - 17°C	18 - 30°C
Amount of GRP Roof 1020 PRO Top Coat		Number of Hardener Scoops	Number of Hardener Scoops	Number of Hardener Scoops
Volume	Weight			
1.0 ltr	1.3 kg	4	3	2
2.0 ltr	2.6 kg	8	6	4
3.0 ltr	4.0 kg	12	9	6
4.0 ltr	5.3 kg	16	12	8
5.0 ltr	6.6 kg	20	15	10
6.0 ltr	7.9 kg	24	18	12
7.0 ltr	9.2 kg	28	21	14
8.0 ltr	10.6 kg	32	24	16
9.0 ltr	11.9 kg	36	27	18
10.0 ltr	13.2 kg	40	30	20



## GRP Roof 1020 PRO Top Coat Application Instructions

1. Mix the Top Coat thoroughly in the original container.
2. Pour correct amount of Top Coat resin into calibrated bucket / suitable container on weighing scales and replace lid on resin can. NB - Top Coat is applied over the whole roof area including edge trims and wall fillets so consider this when decanting.
3. Catalyse the Top Coat resin as per the Powder Hardener Addition Rate guidance. **IMPORTANT - Stir thoroughly for a minimum of 2 minutes until all the powder hardener has dissolved.**
4. The trims are coated first – when applying resin to trims use suitable protection to catch any drips and splashes, such as a trim off-cut.
5. Whilst the Top Coat on the trims is still wet, the flat area of the roof can then be seamlessly completed using the roller to transfer the coloured top coat from the mixing bucket.
6. A variety of different anti-slip finishes can be achieved if required. Slate granules can be spread over curing Top Coat to create the appearance of a mineral finish. Alternatively a small amount of bauxite grit or other suitable anti-slip media can be broadcast in to the top coat whilst wet at an appropriate rate, then lightly rolled over with finishing roller to create a coloured anti-slip effect.

It is recommended that trims should not be coated with anti-slip finish as this would mar the overall appearance and masking tape should be used to create a neat finish.

## Final Inspection

Thoroughly check roof surface for colour evenness and look for any signs of 'pin holing' or irregularity. Any substandard areas should be reworked (see repairs section for procedure). Ensure that no GRP Roof 1020 PRO resin has dripped from the fascia trims onto fascia boards.

Note: Pinholes are not always caused by a lack of Top Coat resin, rather a lack of Base Coat resin applied or insufficient paddle rolling during Base Coat application resulting in trapped air. More efficient use of the paddle roller will help to eliminate pinholes by highlighting bare and unsaturated areas.

### What to do if Rain Stops Work

If the Top Coat has been laid and it rains on the roof during the curing process the following should be carried out within 7 days. After that it may be necessary to reapply the full base laminate (consult Res-Tec Technical Services for further details)

1. Dry the area using a blower or cloths. **IMPORTANT** – Never use an open flame to dry the roof.
2. Check the cured roof area for any rain damage
3. If the rain effect has been minor (light drizzle for example) and any damage is just aesthetic then the roof may be ok to leave.
4. If the rain has pitted and damaged the finished & cured roof area then thoroughly acetone wipe the roof and allow the acetone to flash off.
5. Re-apply the Top coat over the affected area (if the rain has pitted or textured the roof then a bit of extra working may be required with the top coat to get an even coverage)