



Substrate Preparation and Product Application Information

For RSA Coating Systems Over Expanded Polystyrene (EPS)

RSA strongly recommend the use of our 'full' render, texture paint systems over polystyrene substrates. We DO NOT recommend mixing and matching different products from different manufacturers as part of a coating system - as they have not been tested for adhesion or cohesion with RSA products.

SEVEN STEPS TO A SUCCESSFUL COATING SYSTEM OVER EPS SHEETING

1. Undertake masking and preparation as detailed on page two.
2. Check that the substrate installation is correct, paying particular attention to fixing patterns, ensuring sheets are installed as per sheet manufacturer's instructions, and that control/movement/expansion joints are correctly placed. **Note:** These joints must be carried through the coating system. For detailed information refer to the sheet manufacturer's instructions.
3. Install RSA approved, UV resistant PVC corner beads and trims. 'Bed on' 3.5, 4.5 or 6mm (triangle pattern) corner beads and trims using RSA *Set and Prep* and suitable straight edges, shimmy's or levels in accordance with *Set and Prep* instructions. Allow a minimum four hours drying time or leave until firm, prior to the application of subsequent coats. For full details refer *Substrate Preparation and Application Information Sheet for Bead, Mesh, Trim and Skim Application using Set and Prep*.
4. Above and below all window, door and other openings lightly 'bed in' 300mm X 500mm strips of RSA approved 160gsm alkali resistant fibreglass reinforcing mesh on a 45 degree angle into the top surface of a 1.5-2mm application of RSA *Set and Prep*. Please refer to the detailed 'bedding' information on page four. Alternatively, bed in 45 degree angle strips into wet render at step 5, prior to embedding broad wall mesh.
5. Apply EP *Render* at a minimum thickness of 4mm and to a maximum thickness of 6mm as either a one or two coat application (both coats must be applied on the same day with mesh being placed at least 4mm from surface of the EP board). Allow to dry for a minimum of 24 hours. Please refer to the detailed application information on page four.
6. Apply selected RSA acrylic render or trowel-on texture ensuring that a minimum 1mm dry film thickness (DFT) of trowel-on acrylic is applied. Please refer to the detailed application information on page four and five.
7. Apply two coats of RSA *955 Impact Paint*. Prior to the application of RSA *955 Impact Paint*, ensure the substrate and previous coatings contain less than 15% Wood Moisture Equivalent (WME). Please refer to detailed application information on pages four and five.

Notes:- Control/expansion/movement joints in all substrates must be carried through the trowel-on coating system to a minimum width of 10mm.

Detailed application information follows.



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PREPARATION

Cleaning:- Ensure all surfaces to be coated are sound, clean, dry, free from dirt, dust, loose material and/or other contaminants. Brush down the polystyrene surface with a stiff broom prior to the application of any products.

Masking:- For all surfaces not to be coated (windows, doors, roofs, finished floors etc) we recommend masking, covering or otherwise protecting the surface prior to any application.

Note: For masking, we recommend only the use of high quality long life masking products.

Cleaning During Application:- Should any RSA product get onto surfaces that are not to be coated, clean the surface immediately with clean water. It is the applicators responsibility to use the correct cleaning technique and product/s for each surface and to ensure the product is removed without damaging the surface.

Note: The clean-up process must be carried out during each stage of the application of product/s.

SUBSTRATE CHECK

Ensure the substrate has been installed in accordance with the manufacturer's instructions and in accordance with correct building practices, paying particular attention to the positioning of control joints. The success and integrity of the coating system is dependant on the quality and installation of the substrate.

CORNER BEADS AND TRIMS

For detailed installation information refer to the RSA document - *Substrate Preparation and Application for Bead, Mesh, Trim and Skim Applications Using Set and Prep.*

3.5, 4.5 or 6mm corner beads and trims must be installed as part of the RSA substrate coating specification. *RSA Set and Prep must be used to install* high quality, RSA approved, UV resistant PVC corner beads and trims

Note: 2.5mm beads and trims must not be used on polystyrene substrates. 2.5mm beads and trims are only suitable for use on fibre cement (FC) sheeting. FC sheeting will be rendered with pure acrylic renders or textures. The pure acrylic renders and textures have the ability to perform at 1-1.5mm thickness-the actual applied coating thickness over the wings of 2.5mm beads and trims. No commonly used cement based render is designed to be applied at this minimal thickness.



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MIXING EP RENDER

Note:- If the mixing process is not followed the render may:-

- Set up fast and be difficult to apply.
- 'Go off' too quickly on the wall.
- Be difficult to float and finish.

1. For pump use, mix the render according to the pump manufacturer's recommendations. If the machine requires you to add dry mix please do so. For wet mix machines, refer to point two below.
2. Slowly add *EP Render* to 3.7 to 4.0 Litres of clean potable water whilst vigorously stirring with a suitable mechanical mixer (drill and paddle).
3. **Mix the render for at least three minutes to activate additives.**
4. **Allow *EP Render* to stand for a minimum of five minutes to ensure the chemical reaction of additives occurs.**
5. Remix the render for one minute whilst adjusting the consistency via addition of water or render as required.

Pot life:- The pot life of mixed *EP Render* when left in the shade at 25°C and 55% relative humidity is 2-2.5 hours.

APPLICATION INFORMATION

EP Render can be applied in one or multiple coats depending on substrate requirements. For single coat applications, it is important to note that if floating is done too early:-

- shrinkage may occur - highlighting substrate imperfections and promoting 'plastic shrinkage cracks' in the finish.
- the bond of the render to the substrate may also be reduced or can be eliminated completely, resulting in unsound 'drummy'/delaminating sections of render.

Hand Trowel

EP Render is ideal for all hand trowel applications and is designed to be easy to apply, straighten, screed and float finish.

Render Pump

EP Render is ideal for all machine (render pump) applications and is designed to pump consistently, respond well to 'darbying' and 'screeding', and is easy to float.



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Note:- Due to the extended pot life/'hang time' of the product, the plastering crew can mix more bags at a time, apply and finish more area and enjoy increased productivity, render strength and integrity.

Application Over Correctly Prepared RSA Approved Expanded Polystyrene Building Substrates

EP Render can be applied in one or two coats. For single coat applications, it is important to note that if floating is done too early, shrinkage may occur - highlighting substrate imperfections and promoting the possibility of 'plastic shrinkage cracks' in the finish. Where a two coat application is preferred both coats must be applied on the same day-ensuring the first coat is firm prior to the commencement of the second coat.

1. 'Bed in' and straighten 3.5, 4.5 or 6mm RSA approved corner beads and trims using RSA's cement based adhesive *Set and Prep*. Overnight drying is preferred. However, where this is not possible allow the adhesive to dry for at least four hours or until beads and trims are firm, prior to commencement of subsequent coats. For full details refer to the *Substrate Preparation and Application Information Sheet for Bead, Mesh, Trim and Skim Application using Set and Prep*.
2. Lightly bed/trowel in 300mm X 500mm strips of RSA approved 160gsm alkali resistant fibreglass reinforcing mesh on a 45 degree angle over and under (where applicable) all openings and stress points into approximately 1.5mm thickness of RSA *Set and Prep* and feather out (see Diagram A below). Allow to dry for at least four hours (or until firm), prior to over-coating. Alternatively bed 45 degree angle strips into wet render at step 4.



Diagram A - Place reinforcing mesh on a 45 degree angle.

3. As a one coat application, apply 4-6mm of *EP Render* by trowel or pump. Flatten the render using darbies, screeds or long trowels as preferred, or as outlined in project specifications, to required 'straightness/trueness'. *EP Render* coating thickness must not exceed 6mm over polystyrene substrates. As per standard solid plastering practice, it is important to **apply render in even coats** e.g. 4-6 mm. **Do not apply from 2-6mm in a single coat**, to try and remedy poor substrate straightness. When render is applied at varying thicknesses on the same surface, the render will dry out at different rates increasing the chances of 'plastic shrinkage' where cracks may be visible in the render finish.
4. If the 300 X 500 strips were not embedded above and below openings at step 2, do so now into wet render. Also into wet render embed and 'gently iron in' with a long trowel, RSA approved, 160 gsm alkali resistant fibreglass reinforcing mesh to entire surface area (aiming to conceal 80-95% of the mesh with render). Care must be taken to overlap wings of corner beads and trims by a least 25mm, and overlapping strips of 'mesh to mesh' by a minimum of 100mm. **Note:** Care must be taken to avoid crinkles and air pockets when 'bedding' the mesh.



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5. When firm, float finish the *EP Render* (concealing 100% of the mesh with render). **Note:** Should a second coat of *EP Render* be necessary to help conceal mesh, a 'tight 1-2mm coat' may be applied the same day (when first coat is firm but still 'green') this can be over isolated areas or entire surface as required, and then float finish. Allow *EP Render* to harden for a minimum of 24 hours prior to the application of selected trowel-on acrylic.
- 5a. Curing: Due to the limited porosity of the substrate and extended 'hang time' of the *EP Render* curing is only necessary when it is applied in hot, dry (low humidity) and/or windy conditions and where high early/overnight hardness of the finish has not been achieved. In these instances, it is necessary to assist the curing process by soaking the render once or twice a day for the first two days.
6. Apply selected RSA acrylic render or trowel-on texture ensuring a minimum 1mm dry film thickness (DFT) of trowel-on acrylic is applied. Control/expansion/movement joints in all substrates must be carried through the *EP Render* and trowel-on coating system to a minimum width of 10mm.
7. Apply two coats of selected RSA *955 Impact Paint*. Prior to the application of *955 Impact Paint* the substrate must contain less than 15% Wood Moisture Equivalent (WME).

Notes: *RSA 955 Impact Paint* is suitable for application by brush and roller. It is imperative to ensure that rolling and brushing is carried out simultaneously. If this is not done, a picture framing effect may be seen on finished work. Picture framing is a phenomenon created by more paint being applied at the cross over points of brush and roller application such as the soffit/eave. If these areas are not blended while the paint is wet the paint film thickness will build, creating higher sheen levels at these points. To speed up application of *Impact 955* (which in turn will assist with 'wet on wet' application), ensure all surfaces abutting the wall that are not to be coated, are well masked or protected.

FIRST COAT:- Whilst one or more crew members are 'cutting/brushing in', one or more (if building is two storey or higher) crew members should be rolling up to the 'cutting in'. It is imperative to roll and brush wet-on-wet only during each coat. Allow the first coat to dry for 4-6 hours before applying the second coat.

SECOND COAT:- Second and subsequent coats to be applied as per the first coat instructions.

PLANNING AND TIMING ARE THE KEYS TO HIGH QUALITY, SEAMLESS FINISHES.

- When applying *RSA Renders, Trowel On Textures* and *955 Impact Paint*, it is important to know your limitations, including the amount of square metres you can apply and finish without unsightly joint or lap marks. This will be dependent on many factors such as substrate porosity, climate, accessibility, crew size, application experience and so on.
- We therefore recommend that the working time of product/s be assessed for each project prior to application. This can be done by timing workability on a sample of the EPS board or on small, less visible areas of the project. In the warmer months, work in the shade and/or work during cooler times of the day if possible. This will increase working time, allow easier application and assist in achieving a seamless finish.



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- It is imperative to maintain a 'wet edge' whilst applying RSA *Renderers*, *Trowel On Textures* and *955 Impact Paint*. Finish complete surface areas without stopping. Application can be stopped at corners, moldings, expansion joints, or if necessary, advise the client of the need to form 'dummy' joints to work to (rather than risking unsightly join or lap marks). When recommencing application from 'stop points', care must be taken to avoid the product overlapping previously completed work.
- Application spread rates and dry film thickness as detailed below and on product data sheets must be adhered too, to achieve technical integrity and longevity of products and coating system.

DRYING

Drying of acrylic products is affected by air temperature, wind, exposure to direct sunlight, humidity and substrate porosity. Therefore, when exposed to direct sunlight (at 34°C, 30% humidity in medium to strong winds) a 1mm trowel-on product could be expected to dry (and be shower proof) in as little as two hours. When applying the same 1mm trowel-on (at 6 C, 60% humidity during still, overcast conditions), the product could take up to 24 hours to become shower proof.

For thorough drying of trowel on acrylic products over freshly applied (1 day old) EP Render, allow approximately 48 hours (at 25°C and 55% relative humidity) per millimetre of applied acrylic finish. Prior to the application of 955 Impact Paint the substrate must contain less than 15% Wood Moisture Equivalent (WME). Refer to the relevant product data sheets for more information.

***Estimated dry times/ready for over-coating times (based on 25°C and 55% relative humidity) when products are applied according to the previously detailed EPS system:-**

Product	Drying Time*	Approx Spread Rates M2 per 15 Litre Pail*
EP Render	24-72 hours	1.25-2M2 per 20Kg Bag
Acrylic Render/Textures 1mm+:	24-72 hours	12-13 M2
Trowel-ons:	24-72 hours	2mm 7-9M ² ; 2.5mm 5-7; 3mm 3-5M ²
955 Impact Paint.	4-6 hours	For 2 coats Over 1mm 30-33 M ² ; 2mm 28-30; 2.5mm 26-28; 3mm 24-26

*Subject to substrate porosity, climatic conditions and applied thickness of product & application techniques.

OVER-COATING

When over-coating with RSA trowel-on acrylic renders or textures, application may commence 24 hours after completion of *EP Render*. Prior to the application of RSA *955 Impact Paint*, the substrate must contain less than 15% Wood Moisture Equivalent (WME).



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CLEAN UP

Clean all equipment immediately with water.

LIMITATIONS

- When applied, the product cannot be expected to hide poorly aligned substrates. *EP Render* will not remedy poor quality substrate installations and like all RSA cement based renders, it is not a substitute for good solid plastering trade practices. It is the plasterer's responsibility to assess each project to determine 'best practice'. If in doubt, phone **07 3287 6444**.
- EP render coating thickness must not exceed 6mm over expanded polystyrene substrates.

PRECAUTIONS

- RSA products should only be applied when weather conditions allow.
- Protect freshly applied products from high winds, freezing and temperatures below 5°C for 48 hours after application. The products should also be protected from rain for up to 48hrs after application.
- RSA products should only be applied within a temperature range of 5-35°C.
- All components of the coating system including beads, trims and mesh must be purchased from an RSA outlet or approved distributor.
- Control/expansion/movement joints in all substrates must be carried through the trowel-on coating system to a minimum width of 10mm.