PRB TECHNICAL GUIDANCE

PRB BAGGED RENDER FINISHES INFORMATION & GUIDANCE

Rev 6 – 05 09 24

The information given below applies to the PRB through coloured renders SUPERBRUT, OZE, ALG, FINICHAUX, 6000R, ECO range MONOCOUCHE SEMI – ALLEGE R&D, grey renders SC GRIS, CLASSIC TAL and Eco Range SOUS ENDUIT R&D, together with the PRB through coloured heritage lime renders BELLE EPOQUE FINITION and grey basecoat BELLE EPOQUE SOUS ENDUIT

The PRB range of through coloured façade renders are single bag products that are suitable for both hand and machine applications to a range of masonry substrates subject to specification requirements to meet specific design criteria. Several finishes can be achieved using different application techniques. For more information on finishes refer to our Guide to Finishes.

PRB façade renders are totally weatherproof and fully breathable products. Due to the special manufacturing processes, the product when applied in accordance with our application procedures will resist the penetration of water, creating a fully weatherproof coating but will allow the building to fully breathe.

To maintain colour consistency, walls should be completed in sequence around the building. Wherever possible, elevations should be coated in a single operation to avoid joint marks in the finish. If this is not achievable, apply the material to points where a change in colour is required or where there is a change in the building line or where different features are required.

Advice prior to applying render to walls - All substrates including EWI systems where applicable.

Surface preparation requirements for PRB renders are the same as for ordinary sand and cement renders. For additional information always refer to and follow the guidance of BS EN 13914-1 Code of practice for “Design, preparation and application of external rendering” and BS 8000 code of practice “Workmanship on Buildings Sites” Part 10.

Prior to applying the render, always check all substrates for suction by splashing water onto the surface of the elevation going to be worked on. If the water drips down the wall, the substrate has little or no suction. If the water absorbs immediately into the substrate, then the substrate has high suction. When the above two scenarios are experienced, it is likely that the surface will need priming with ***ACCROFIX PATE*** or for lime mortar-based substrates or applications receiving a lime system, prime the substrate with ***PRIMCHAUX PE***.

Check the PRB specification and product data sheet as this will provide the exact requirements or if in doubt contact PRB.

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In the summer months or on hot days, always work on cool walls i.e., working on the opposite walls to the direct sunlight e.g., in the shade and follow the shaded walls throughout whenever possible. If this cannot be achieved, protect walls from direct sunlight, strong drying winds, frost, and rain soon after application.

Do not apply in temperatures above 35°C, on elevations in direct sunlight or where the substrate is hot as the render will dry out too quickly and therefore will not reach its performance criteria.

When applying in hot weather, it is advisable that work coincides with the shaded areas of the building. Subject to site conditions, during longer periods of hot and dry weather or where there are hot drying winds, it may be appropriate to apply an even mist spray of clean water to the substrate before application and to the surface finish afterwards. This process is important to ensure complete and full hydration of the render can take place.

Protection must be provided when applying PRB renders in rain or other inclement weather.

Do not apply if exposure to frost is forecast during curing. Application should cease in temperatures below 5°C or where rapid freezing is a potential threat. Where the air temperature is at, or is likely to fall below 5°C, appropriate precautions such as covering with a hessian sheet should be used to protect curing render.

Render products should not be applied to substrates which are frost laden or which have recently been subject to prolonged rain.

In colder weather conditions to assist the render gain a quicker initial set (between 1½ to 2 hours at 5°C) the use of ***ACCELERATEUR FLASH*** is recommended. This can be added directly to the mixing water for the render. Follow the recommended dosage and ensure this remains the same for the application otherwise shade variations may be encountered. ***ACCELERATEUR FLASH*** does not speed up the overall drying time of the render and does not act as an antifreeze and its effect is reduced above 10°C. Please note: The use of Sodium Chloride or Calcium Chloride flakes or additive which are available on the open market are not permitted as they affect the render performance and will void any product warranty.

There are no benefits in using an accelerator in lime renders as the accelerator only works in cement renders.

Do not render onto saturated substrates as this will cause discolouration and may affect the bond strength and adhesion. For wet substrate applications refer to the APPLICATIONS section of this specification.

Curing renders should be protected from heavy rainfall.

To maintain colour consistency, walls should be completed in sequence around the building. Wherever possible, elevations should be coated in a single operation to avoid joint marks in the finish. If this is not achievable, apply the material to points where a change in colour is required or where there is a change in the building line or where different features are required.

Applying render to wet walls could cause the effect known as ‘block ghosting’ but is in effect lime blooming / efflorescence. This is when the block joint effect shows through the render finish, either when the wall is dry or after it has rained. This can be caused because:

1. The mortar joints haven't had enough time to cure after construction of the masonry before the render was applied. They are often accentuated in the render finish just after it has rained then fade back when the wall dries.
2. The wall was wet when the render was applied causing different suction rates when the render was drying.
3. The render is too thin which means when it rains for a long period the water penetrates through to the substrate. However, this generally causes darker lines due to the difference in suction between the joints and blockwork but then dry away when the rain stops.
4. The mortar used to bond the masonry is of a weak consistency causing different suction rates which affect the drying consistency of the render.
5. The mortar used to bond the masonry is of a weak consistency.

Supporting guidance that originated from BS EN 13914 on assessment of external rendered finishes.

General Appearance

- Rendering on external walls should be reasonably consistent in texture, finish, colour, and line. However, rendering cannot be expected to provide a perfect finish and the following should be observed:
- Some minor surface cracking and crazing is likely to occur but should not affect its performance.
- Some patches and daywork joints may be visible but should not be unduly obtrusive.
- Some tooling marks may be visible but should not be unduly obtrusive.

Lighting – General recommendations

- The intensity and angle of illumination can have a critical effect on the appearance of a finished externally rendered surface. For this reason, normal working and acceptance conditions are limited to when lighting and viewing are from positions perpendicular to the surface. Uplighters are not a suitable light with which to view a render finish.

Glancing light conditions

- If the surface is to be assessed under glancing light conditions, this should be stated in the contract specification.

Viewing conditions

- When inspecting a finished externally rendered surface, it should be viewed in daylight, standing at ground level, from a generally accessible viewing position. Where possible it should be viewed at 10m with the sunlight, if any, not falling on the surface in a glancing direction.

Line

- The line of the rendered surface will largely be determined by the line of the substrate.

Water quantities for pump or hand application of bagged products

It is important that the recommended water content for each product is followed otherwise variation in shade should be expected. This should be consistent throughout the application. Colour/shade will also vary depending on the type of finish selected as different finishes will create different shades making the colour look darker or lighter. For example, a textured application will generally increase the depth of colour and a smooth appearance will appear brighter than a scraped finish.

PRB TECHNICAL GUIDANCE

APPLICATION FINISHES

Scrape Render or Scratch Render finish (may also be known as Scratch Plaster)

The render is applied by machine, or as a one or two coat/pass, wet on wet application, or by hand as a two-coat application.

When sufficiently set, using an I bar, which is a 1m long aluminium H or I section piece of metal and scrape the surface up and downward and left to right over the render surface to remove any high spots to flatten and open the render surface. This action is by far the best way to provide a level surface and assists in eliminating 'scalloping or surface dishing effect and surface blemishes which appear as 'white' marks in the finished render. ('White marks' are caused by minor hollows in the render surface which haven't been scraped correctly during the finishing process.)

Once a flattened surface has been achieved, using a scraping float, scrape the surface in small circular motions, removing no more than 3 mm from the surface to remove any slight imperfections and to bring the total render application to the desired scraped finish and specified thickness. During this stage, using a light scrape, check the surface for any areas that have been missed and blend out any straight-line scrapes, particularly against straight line edges, to reveals etc, to leave an even finish across all locations. After scraping, remove any surplus residue from the surface by brushing with a clean, soft bristle brush, taking care not to leave brush marks in a soft render surface as these will show in the render finish.

Always stand back and examine the whole surface for any straight-line scrapes, blemishes, misses which often look like white marks and unevenness. Errors must be corrected at this stage as rectification later is unlikely to be achieved. Each elevation must be scraped at the same stage, as early scraping will result in a slightly darker shade and later scraping in a lighter shade.

Please note: There are a variety of different size and types of scrape or scratch floats, which are available from a range of suppliers. They are normally available in three depth sizes, 6, 8 and 15mm teeth. For a '*Medium scrape'* finish, use an 8mm toothed float. For a '*Fine Scrape'* finish use a 6mm or 8mm toothed scrape or scratch float depending on hardness of the material. Should the surface be left to dry too hard it may be possible to use a 15mm toothed trowel to open the surface and then revert to the 6 or 8mm toothed trowel to complete. If the scraping procedure is rushed, started on a soft surface, or left too late to a very hard surface, it can cause surface blemishes known as tram lines and will create a poor finish and thus spoil a good application.

Smooth render finish - Trowel, Sponge or Bagged Finish

Please Note: If a smooth type, trowelled, sponged, bagged finish is being created it is important to understand the surface appearance is hand finished and will therefore create inconsistencies in the appearance, shade, and finish. This is a normal scenario to be expected with these types of finishes. As with all applications, the skill of the applicator is key to this process, and they must ensure the finish is as consistent as possible by checking the surface immediately after application to blend in any anomalies as best as possible as rectification afterwards is not easily achieved. **Caution**

must be given when dealing with darker colours because these are more vulnerable to marks showing on the finish generally caused by over working the finish, adding too much water to the surface when sponging or trowelling or using dirty trowels or sponges, therefore good application procedures and techniques are paramount to avoid these effects occurring.

It is also advisable to dampen the surface after initial curing of the topcoat finish, using a garden sprayer or mist spray from a hose to prevent early surface hardening which can lead to surface micro cracking. Until the render is dry and hardened, it is recommended to cover with hessian or mortar fleece to protect from drying winds, frost, strong sun and driving rain.

A white surface appearance which appears as a general lightening or discolouration, can also appear on render finishes and is generally more noticeable on darker colours. This effect is called efflorescence or is often called efflorescence or lime blooming and is a natural process caused by the migration of soluble salts to the surface of cementitious systems and products. It is generally not harmful and does not affect the strength or durability of the render. It can occur during damp/wet climatic conditions and/or low temperatures during the curing period, when applying onto saturated backgrounds or when there is excessive moisture such as rainfall during or soon after the application. Therefore, it is advisable to take extra consideration when applying strong dark colours as per the cautionary note above.

For a smooth finish, the render is applied by machine, as a one or two coat/pass, wet on wet application, or by hand as a two-coat application.

When sufficiently set, using an I bar, scrape the surface in vertical up and downward and / or horizontal, left to right scraping actions to remove high spots and to create a flat surface and to begin opening the surface of the render. This action is by far the best way to provide a level surface and assists in eliminating surface blemishes.

Indents are filled in with the surplus materials taken off with the straight edge; it is then left to take up its initial set and whilst still workable is floated with either a wooden or plastic float, sponge float or as a bagged finish to leave a pleasant even smooth aesthetic finish.

A trowel finish is achieved by skimming the level and ruled surface with a wooden or plastic float to produce a smooth dense surface to the desired effect. If a smooth finish for painting is required, once it has reached an initial dry finish, it can be trowelled with a stainless-steel trowel to achieve an even smoother polished finish.

A sponge finish is achieved by skimming the level and ruled surface with a sponge float to produce a slightly sanded surface to the desired effect.

A bagged finish is achieved by rubbing a ball of damp hessian over the surface which produces patterns depending on the style of rubbing.

After completion of creating a smooth finish, it is advisable to dampen the surface with a light spray after initial curing of the topcoat finish, using a garden sprayer or mist spray from a hose to prevent early surface hardening and hydration

which can lead to surface micro crazing. It is also good practice until the render has dried and hardened to cover with a hessian or mortar fleece to protect from drying winds, frost, strong sun and driving rain.

Care must be taken not to let water run down the wall spoiling the finish by washing the cement out of the render.

Please note: Over working the finish will bring the 'fats' to the surface, causing a slurry effect, known as laitance, which may micro crack when curing. This effect is not detrimental to the render system but may look unsightly. However, be aware, as the render dries, the water vapour needs to escape via the surface but if the surface has been closed too early in the application by trowelling, there's nowhere for the trapped water vapour to go. Over time the water may form surface bubbles which get bigger as more moisture tries to move through the render, collecting under the surface. If this occurs the render will generally need to be repaired, as the bubbles will generally degrade leaving unsightly surface marks.

This problem generally occurs if the render has not been aerated sufficiently with a serrated spatula or derby first, particularly when the applicator has sprayed the material onto the wall, but the same can occur in walls that have been hand applied but this is far less likely.

Dry Dash Finish / Harling – regional names for the same finish

Once a basecoat has been applied and whilst the render is in a "wet" condition apply the dash by casting the stone in an even manner to the wet surface of the render, ensuring the dash is gently but firmly embedded into the render. If required apply light pressure to the dash surface using a smoothing trowel to ensure the dash is fully embedded.

The aggregates are applied using a harling trowel to cast the aggregates into the wet receiver coat. It is generally known as dry dashing or wet dashing in England and Wales, roughcasting in Scotland and Northern Ireland and harling in the Scottish Highlands.

Wet Dash finish / Textured / Rough-Casting

Generally known in England and Wales as rough-casting and in Scotland as wet dash.

After a basecoat has been applied and allowed to dry the roughcast can be applied either by machine or by the traditional hand applied process.

Machine applied.
Ensure the render is sufficiently dry but still in a green condition, then spray the textured coat to the desired effect from light Tyrolean to a Heavy Dash appearance to create a single monolithic coat. During the spraying process allow time between each build-up of the textured layer for the render to "semi-set" to avoid creating a slump effect in the finish. This building up process will enable the creation of a heavy roughcast appearance.

Hand applied.
Mix a traditional wet-dash slurry render, of 1:1 aggregate, and topcoat render is cast using a harling trowel at an intermediate 6mm thick render coat to achieve a lumpy textured finish coat. This process is generally a 3-coat system if hand applied or by using a wet-dash box.

It is generally accepted that this 'traditional' finish will need painting afterwards to achieve an aesthetically desired finish.

Ashlar / Rustication Detailing & Marking

When **ashlar / rustication** detailing is required, it is recommended that a minimum depth to the back of the ashlar / rustication cut should be no less than the thickness of the render required for specific exposure zone, to ensure that a minimum weathering performance is maintained. To achieve this, the depth will require the finished thickness of the main render to be increased to suit the depth of the cut and weather performance location.

Ensure the mesh is deep enough not to be exposed during the ashlar cutting process.

Ashlar marking replicates the effect of ashlar blockwork. This is generally created in the surface of the render finish and is created using a long 4 - 6 mm diameter stainless steel or sherardized nail bent to shape like a brick striking tool. The effect created is not a cut but just a half round 2 -3 mm indent press into the moist render surface.

It is a good idea to have a clean water vessel with some washing up liquid in it and wet the nail to help the nail flow over the render surface to create clean lines. Clean and wipe the nail regularly.

Ashlar Recommended Do's & Don'ts

- Always use setting out lines. Note: If a chalk line is used ensure the chalk mark is cut away as it is difficult to remove from the render finish.
- Avoid cuts directly below string courses as they may indicate defects in the construction line.
- Avoid placing cuts in line with transoms, heads, and sills. If windows are out of line, the cuts will highlight the inaccuracies of the building line and will create lines which are not parallel.
- To prevent the collection of water and dirt, it is recommended that if the Ashlar cut exceeds 5 mm in depth, then the creation of a chamfered profile to the base of the cut should be formed.
- Only return the ashlar effect into the reveal if there is sufficient render thickness as detailed above.

AFTER CREATING THE DESIRED FINISH AND TO CURE THE COAT – ESPECIALLY ON SMOOTH FINISHES, MAKE SURE TO DAMPEN THE SURFACE WITH A LIGHT SPRAY OR WITH A WET BRUSH TO CONTROL DRYING AND PREVENT EARLY SURFACE HYDRATION WHICH CAN LEAD TO SURFACE MICRO CRACKING.

UNTIL DRY AND HARDENED, COVER WITH HESSIAN OR MORTAR FLEECE TO PROTECT FROM DRYING WINDS, FROST, STRONG SUN AND DRIVING RAIN.

Additional guidance can also be found on the following **TECHNICAL INFORMATION SHEETS**:

PRB Precautions when dealing with darker coloured renders
PRB What causes surface micro crazing in a smooth render finish

NOTICE
PRB Systems Ltd, is providing this information as a service and reserves the right to replace or change this information at any time.

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PRB offers a free specification service, and it is recommended this is used to ensure the correct solution for your façade is provided.

Read fully and always take note of any product data sheets information and guidance. If unsure, please stop and check with PRB before proceeding further.

The above information is offered as general guidance only and is not an exhaustive list of applications and situations.

The information provided in this technical guidance is based upon current knowledge and experience. The user must ensure the products used are suitable for their specific application and no responsibility can be accepted, or any warranty or guarantee given or implied by our Representatives, Agents, or Distributors should be accepted as only PRB can offer this. Please always check with PRB or via the website that this document has not been replaced by a more updated version.

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