

Resene

✓ Popular Paint Systems

Concrete, plasters and cement-based substrates

This document is an edited version of the Resene Best System Selling training notes provided to Resene staff and is provided to enable you to gain a greater understanding of the substrates and paint systems you may encounter in your decorating project. It is impossible to cover all decorating scenarios in a single document, so if you are in doubt about any aspect of your project please contact Resene for assistance.



Resene
the paint the professionals use

Primers and sealers

Most Resene paints when used on concrete, or for repaints, can be self priming. However, using a system that includes the right primer can provide better long term results, and often, as you usually need three coats on new concrete, using a primer will replace the first coat of the three coat system and not add significantly to the cost.



Resene Concrete Primer (see Data Sheet D405)

Suitable for all new and sound concrete and cementitious surfaces including smooth glass reinforced concrete (G.R.C.) and (F6) quality concrete. (The F scale measures the quality of concrete and goes from F1 to F6. F5 describes the highest quality available for most painted finishes. F6 describes high quality decorative concrete that is usually not painted, except GRC – see appendix).



Resene Sureseal (see Data Sheet D42)

As concrete gets older the surface starts to erode and powder, and just as Resene Sureseal will help bind and strengthen paperfaced plasterboard it will perform the same function with weakened concrete and other cement-based substrates.

Another common problem is that salt deposits build up in concrete and may be difficult to remove, even when carefully washed with copious quantities of water. This is because the salt is embedded in cracks and crevices and penetrates into the concrete substrate itself. Unless sealed this salt will stain through waterborne coatings (including Resene Concrete Primer). Resene Sureseal will stop this happening. It will also seal efflorescence, a different type of salt in chemical makeup from windblown sea salts (see appendix).



Resene Limelock (see Data Sheet D809)

A unique coating used for curing and sealing cementitious substrates, Resene Limelock is particularly useful for controlling the cure and stopping limestaining on new plaster and renders. Resene Limelock may be applied as soon as the surface is dry and overcoated with waterborne paints at any stage, eliminating the need to leave the plaster to cure for 7 days. Resene Limelock is an excellent base for a wide range of Resene waterborne coatings.



Resene Membrane Roofing Primer (see Data Sheet D49)

A specialised primer developed for rubberised or bituminous roofing membranes, such as butynol and bitumen based coatings. Many early waterproofing systems, consisted of between two to five coats of bitumen paint followed by three to four coats of a PVA latex topcoat for colour and weathering. Latex resins are the forerunners of today's modern waterborne resins but were much softer and not as durable.

Bitumen is difficult for paint to adhere to, but Resene Membrane Roofing Primer sticks like glue to it and is an ideal base for subsequent paints and coatings. There are a significant number of older buildings, particularly commercial buildings, which have had this type of system applied at some stage.

Always avoid using strong colours over bitumen based systems to reduce heat build up.

Topcoats

Below are the key products likely to be used for coating concrete



Resene Lumbersider (see Data Sheet D34)

- An excellent proven paint – is very easily applied and durable, available in all colours while its low sheen finish is particularly good for rough surfaces as it doesn't highlight imperfections.



Resene Sonyx 101 (see Data Sheet D30)

- More durable and easily cleaned than Resene Lumbersider, but its higher gloss will show up imperfections more.
- Available in most colours.



Resene X-200 Waterproofing Membrane (see Data Sheet D62)

- Over twice the film build of conventional paints, such as Resene Lumbersider.
- Low sheen finish, which will hide some surface imperfections, and is a well proven waterproofing system.
- Wide colour choice with colours tinted from white and pastel tone available in 4 and 10 litre packs from most stores and stronger colours (up to deep tone) available by order from Head Office – although there is a minimum order quantity of 10 litres.

(See appendix – How Resene X-200 works)



Resene AquaShield (see Data Sheet D601)

- Ideal for historic and older style buildings including Art Deco and heritage. It has a soft aged, classic look but is also self cleaning as the paint sheds water and dirt, effectively staying clean. Ideal for anyone wanting a traditional or mineral paint.
- Limited to white and pastel tone colours.



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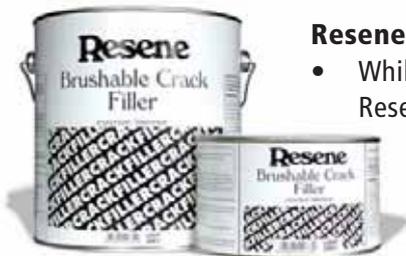
Resene Sandtex (see Data Sheet D71)

- A versatile, textured paint, which is easily applied. It has an attractive textured finish, which may be varied depending on the technique used.
- Comes in two finishes Standard and Superfine.
- Ideal for precast and In-situ concrete.
- A lightly textured alternative to Resene X-200 or Resene AquaShield.
- Available in most colour ranges, also available in 500ml testpots.



Resene Thixalon 5 (see Data Sheet D63)

- Similar to Resene X-200 but with a very high film build. Easy to apply.
- Used for waterproofing, when a thicker system is desired or to achieve a non-grit texture, which is achieved by applying using a goop loop roller sleeve.



Resene Brushable Crack Filler (see Data Sheet D811)

- While not strictly a paint this product is essentially a thicker version of Resene Flexicover E.
 - It is brushed into exterior cracks.
 - The wider the crack, the more applications will be required.
 - Brush across the crack, not down.
- Ideal for cracks in rough concrete, stucco and/or textures where the excess from a gunnable sealant, such as Selleys No More Gaps, cannot be easily removed.

Some other paints and systems that you might also like to consider are:



Resene Hi-Glo (see Data Sheet D31)

- All the characteristics of Resene Sonyx 101 but its gloss is considered by many to be too high for use on concrete as it tends to highlight imperfections.

Resene ✓ Popular Paint Systems

Concrete, plasters and cement-based substrates



Resene Enamacryl Metallic (see Data Sheet D309a)

- Popular and surprisingly straightforward and easy to apply on slightly rough cementitious surfaces.
- May also be applied over textured coatings like Resene Sandtex or textured Resene Thixalon 5. This actually makes it easier to get an even finish. The photo shows a local hairdresser who used Resene Enamacryl Metallic in the colour Resene Silver Aluminium to make a bold statement for his business – it is striking especially in sunlight.



Resene Uracryl (see Data Sheets RA54, RA55, RA56, RA59)

- Ideal for concrete – but it is more costly and generally used as an anti-graffiti coating or for high rise buildings where a very long-life system is required.



Resene Aquapel (see Data Sheet (D65))

- A clear (silicone based) water repellent that will soak into unpainted cementitious surfaces. It may be left unpainted or used as part of a system, such as with Resene AquaShield on new plaster.
- Ideal for exposed concrete panels or concrete feature walls, which are being used on an increasing number of modern homes and buildings.



While not ideal the owner of this home used Resene Aquapel to help waterproof his concrete blocks (see p28).

Things to consider



The owner of this home used Resene Sonyx 101 on the weatherboards and the concrete base.

1. What are you planning to paint?

2. If your plaster or concrete is new or 'fresh' – how long has it had to cure?

- If the plaster or concrete is new, then use Resene LimeLock to improve the cure and to stop limeburn.
- This is relevant if you are either in the process of building a home and are planning on undertaking the painting yourself, or you may have recently had a fence or wall plastered.

3. Consider the style of your home

4. What condition is the area(s) of the house that you wish to paint?

This will help identify both the preparation and primers that may be needed.

- You may need to qualify this question by considering the questions below.
 1. Has it been painted previously?
 2. Do you have any flaking paint? If yes, is it significant?
 3. Is there any mould present?
 4. Are there any cracks present and roughly how big are they?



The owner of this home was looking for a Mediterranean finish to complement the style of his home.

5. What colour do you have in mind?

This is important not just for the aesthetics of the building but also because:

1. Some cladding systems recommend only lighter shades be used (see appendix).
2. The availability of colours in 10 litre pails is limited.
3. Products such as Resene AquaShield and Resene Sandtex are only available in a limited number of colours.
4. While Resene X-200 is available in white and pastel tone colours from your local Resene ColorShop, stronger colours need to be ordered in.

6. What sort of finish do you have in mind?

Ideally the paint should enhance the look and style of the property, even add value – for example if you painted a Mediterranean style home in a high gloss it would look out of place, while a finish like Resene AquaShield would complement the style of the house perfectly.

7. Do you have any waterproofing issues?

If there are waterproofing issues it is important to clarify whether the building is leaking through the existing cladding or somewhere else, like any parapets or windows. The house may require inspection.

8. Are you doing the work yourself?

This has a direct bearing on the key accessories and add-ons needed.

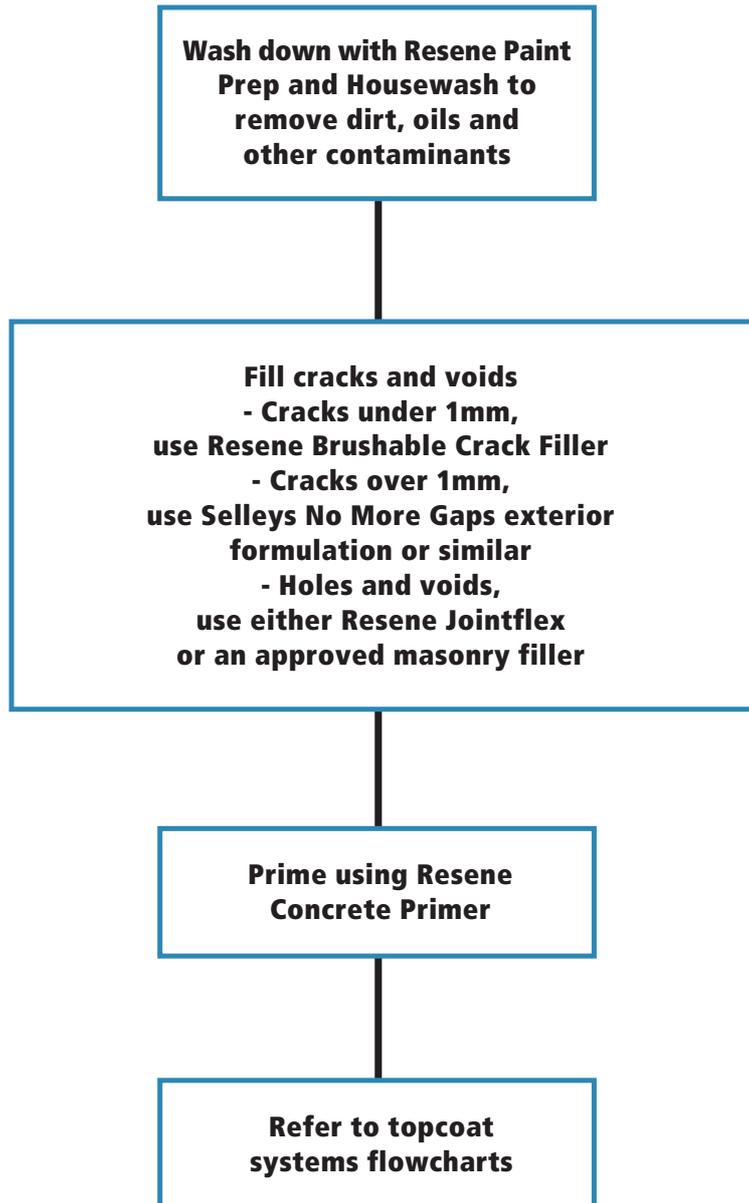
- Also a good opportunity to explore other painting tasks – such as trims, windows, porch floors, fencing etc...

9. How big is the area to be painted?

This will give an idea of the amount of paint needed. Note that Stucco plasters often have profiles that use a lot more paint than smooth surfaces - see the appendix for some approximate spreading rates needed for various textures and substrates.



New unpainted concrete



NOTE: Resene Limelock may be used on new concrete and plaster to enhance the cure and hold back limestaining. It is most effective when applied during the construction stage.

- Things to consider**
- **How long has the concrete or plaster had to cure?**
 - **Does it have any cracks or voids that will need filling?**
 - **How large are they?**
 - **Do you have any waterproofing issues?**
 - **Are you going to do the work yourself?**
 - **How big is the area to be painted and how smooth (or rough) is the surface?**

New unpainted concrete

Notes:

1. Concrete (and thickly applied plasters) may take up to 28 days to fully cure and, unless Resene LimeLock is used, should not be painted before this time.
2. Curing and release agents will need to be removed from concrete before painting. In most cases Resene Paint Prep and Housewash will do the job, but for stubborn release agents a stronger product like Resene Emulsifiable Solvent Cleaner should be used. This is rarely an issue for DIY paint users (see appendix).
3. Plasters, masonry finishes and cement sheets will collect dust and air-blown contaminants, such as salt, on the surface. A thorough wash and hose down should be sufficient to remove plaster dust etc. from the surface.
4. Concrete will sometimes have minor cracks and bug holes. These are best filled with plaster, such as **Rockcote Multistop**, or alternatively an epoxy, such as **Resene Epox-O-Bond**. Use a spatula or 35-50mm broad knife.
5. Plasters and masonry may have small hairline cracks caused as the plaster dries. It is often difficult due to the rough nature of the surface to use a filler, so use Resene Brushable Crack Filler or Resene X-200 brushed into the cracks.
6. Apply Resene Concrete Primer before filling any cracks or voids.
 - Applying fillers is easier if the surface is sealed.
 - The primer will make it easier to identify cracks to be filled.
7. Resene Limelock is recommended for new plasters and masonry. Resene Concrete Primer will help prevent subsequent limestaining. When dark colours are used, allow at least 7 days before overcoating Resene Limelock.

Key accessories essential to complete the job

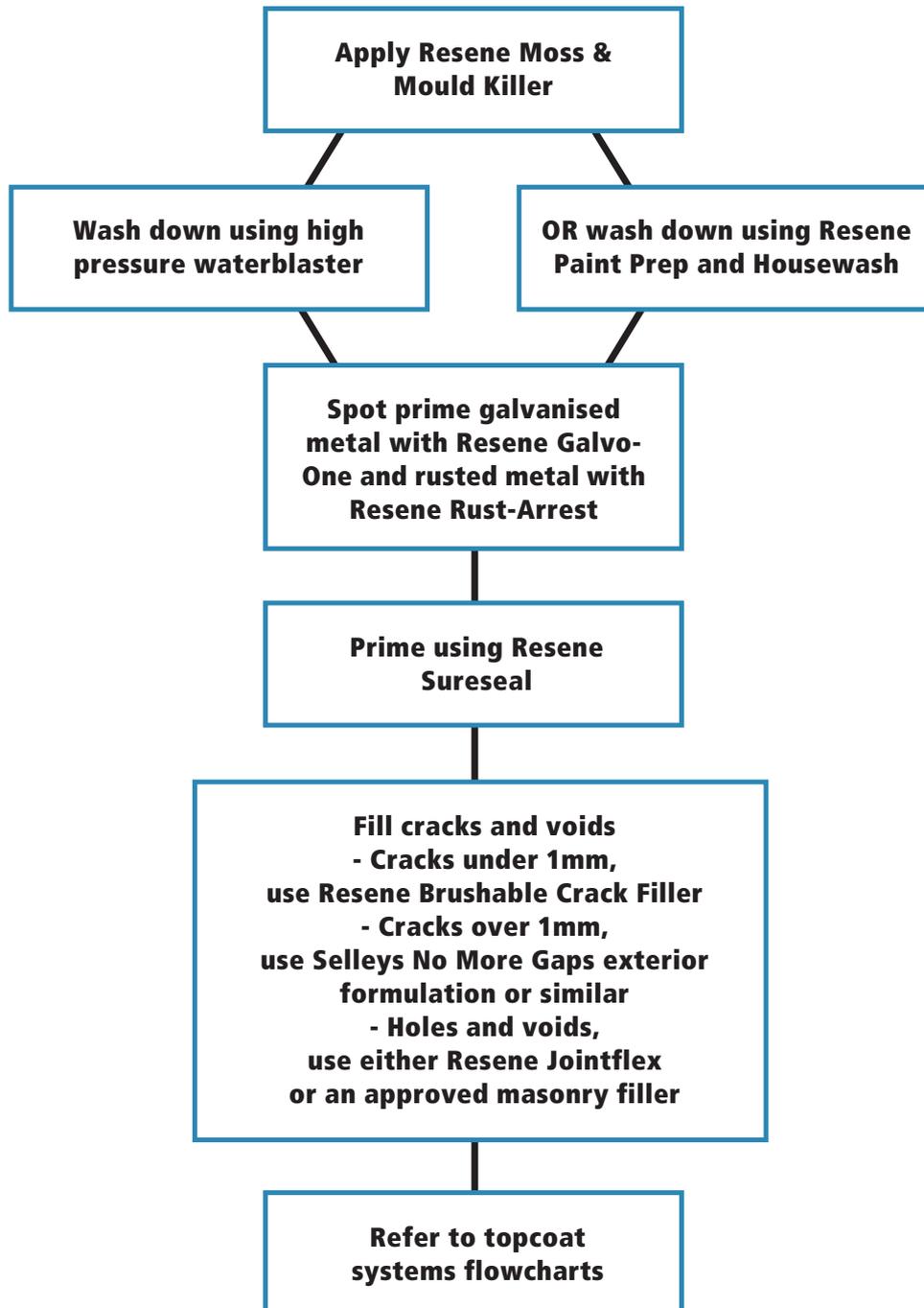
- Extension pole
- Fillers – Selleys Masonry Filler and/or Resene Brushable Crack Filler
- PAL No.1 or PAL No.2 roller sleeve
- Resene Legend or Haydn Genius 50-75mm brush (for cutting in)
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- 35-50mm broad knife (for filling)
- 100-120 grit sandpaper for overfilled masonry filler
- Aluminium extension pole
- Dropsheets
- Paint pot for decanting from a 10 litre pail



Old unpainted cementitious surfaces – in good condition



THINGS TO CONSIDER

- **What is the condition of the surface?**
- **Does it have any moss, mould or lichen present?**
- **Are there any cracks or voids that will need filling?**
- **Do you have any waterproofing issues?**
- **Are you going to do the work yourself?**
- **What is the approximate size of the area to be painted – how smooth (or rough) is the surface?**

Old unpainted cementitious surfaces – in good condition

Notes:

1. Old unpainted cementitious surfaces will be contaminated with moss and mould, windblown salt and other contaminants. They will also be powdery and most likely dirty. This is why we recommend Resene Moss & Mould Killer and a thorough clean by either waterblasting or a thorough scrub using Resene Paint Prep and Housewash.

2. We recommend Resene Sureseal because it will:

- ✘ **Hold back any salt staining that could occur.**
- ✘ **Bind the surface up if it is powdery or eroded.**

While Resene Concrete Primer could be used instead, Resene Sureseal provides a 'belt and braces' approach.

3. Spot prime galvanised flaking areas with Resene Galvo-One and rusted metal with Resene Rust-Arrest or Resene ArmourZinc 120 if the rust can be removed easily.

Key accessories essential to complete the job

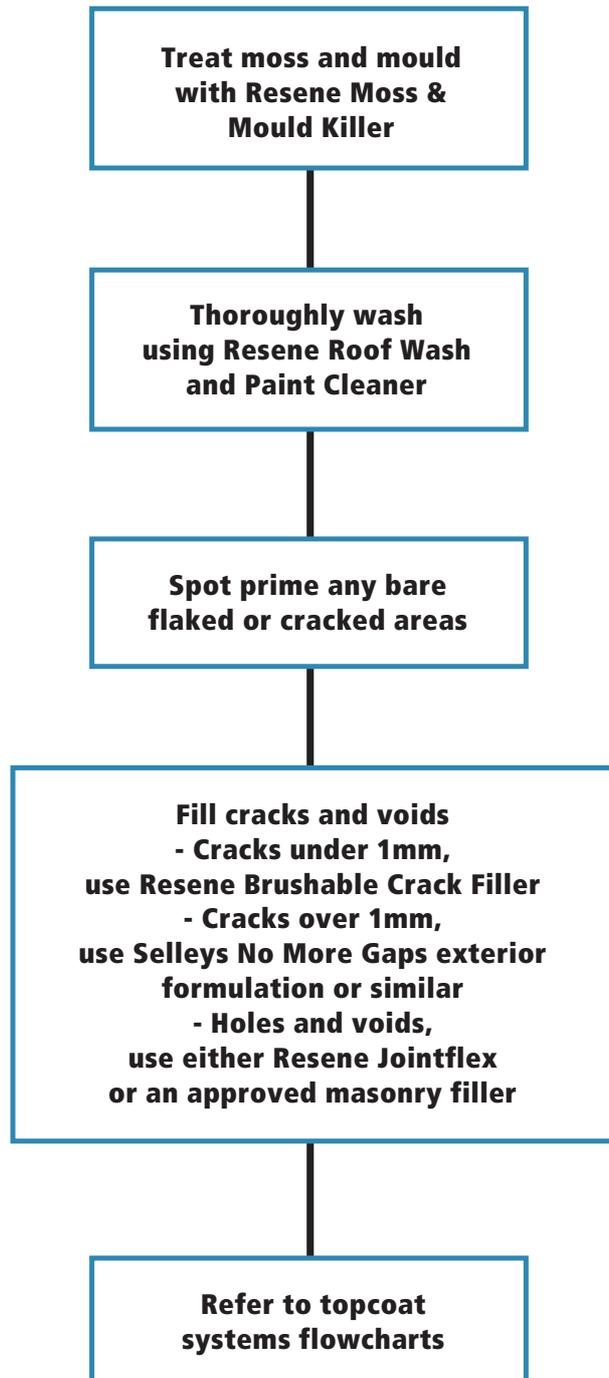
- 50-75mm Resene Blue or Resene Professional brush for cutting in
- Extension pole
- PAL No.4 roller sleeve
- Resene Brushable Crack Filler
- Resene Moss & Mould Killer
- Roller tray and handle
- Selleys exterior gap filler or Resene Epox-O-Bond
- Turps for cleaning up

Add-ons – to make the job easier or quicker

- 35-50mm broad knife (for filling)
- Dropsheet
- Rubber gloves and eye protection



Previously painted – in good condition



Things to consider

- **What is the condition of the surface?**
- **Does it have any moss or mould present?**
- **Are there any cracks or voids that will need filling?**
- **What is the approximate size of the area to be painted - how smooth or rough is the surface?**
- **Are you going to do the work yourself?**

Previously painted – in good condition

Notes:

1. Typically repainting a sound paint system that has been applied over a cementitious surface is straightforward, because the substrate is inert and doesn't usually cause any stress on the paint, unlike substrates like timber. As a result there are generally only three areas that need addressing:

- i) Mould and moss will need to be killed and removed – use Resene Moss & Mould Killer.
- ii) While the surface may be power-washed it is easier to clean using Paint Prep and Housewash. This is much more effective at removing surface chalking (old oxidised paint) from the old paint than waterblasting.
- iii) Any cracks or holes that need filling may need either an application of Resene Brushable Crack Filler or a suitable filler, such as Selleys Masonry Filler.

2. While sealants are unlikely to be needed on the concrete or cementitious substrate itself they may be required at the interface between the substrate and window flashings etc.

Key accessories essential to complete the job

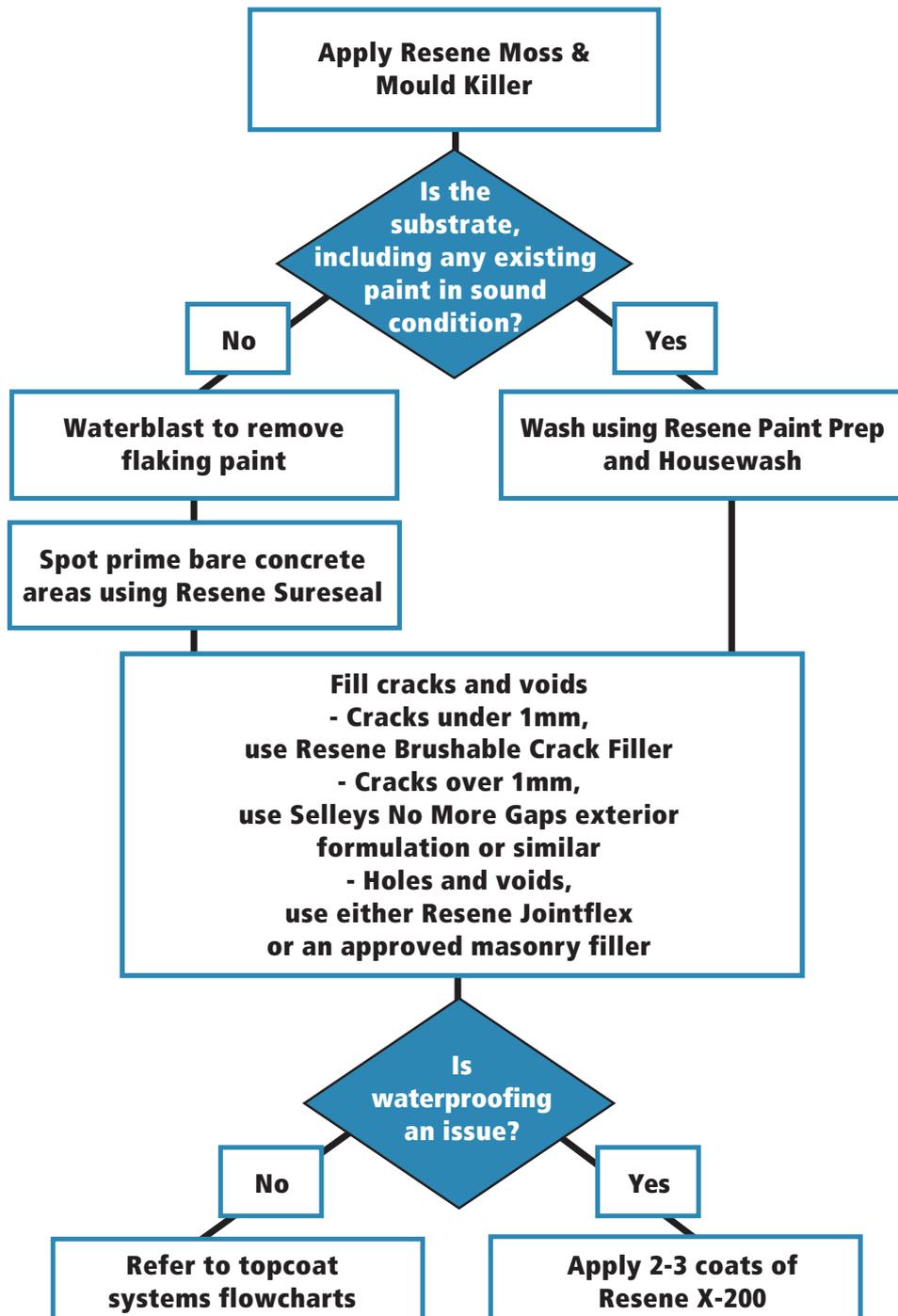
- 50-75mm Resene Blue or Resene Professional brush for cutting in
- Resene Brushable Crack Filler
- Resene Moss & Mould Killer
- Selleys Masonry Filler or Resene Epox-O-Bond

Add-ons – to make the job easier or quicker

- 35-50mm broad knife (for filling)
- Dropsheet
- Rubber gloves and eye protection



Cementitious surfaces cracked and/or leaking – painted or unpainted



Things to consider

- **What is the condition of the substrate?**
- **Are there any waterproofing issues?**
- **Are there any cracks or voids that need filling?**
- **If painted, what condition is the paintwork in? Is it flaking?**
- **What colour do you have in mind?**
- **What is the approximate size of the area to be painted – how smooth or rough is the surface?**
- **Will you be undertaking the painting yourself?**

Cementitious surfaces cracked and/or leaking – painted or unpainted

Notes:

1. Some very old buildings may originally have been coated in a limewash or similar, very poorly bound paint. Typically they are very weak and friable and while waterblasting will remove the layers of paint, it may be a mammoth and unwanted undertaking.



The alternative is to thoroughly scrub and wash to remove the worst flaking areas, spot prime with Resene Sureseal and paint with Resene AquaShield, Resene X-200 or Resene Lumbersider.

2. If there is a black paint beneath the coating, this is most likely to be bitumen based and you should refer to the next flowchart.

3. We have combined unpainted with previously coated as there is no difference in terms of surface preparation except that instead of spot priming with Resene Sureseal a full coat may need to be applied.

Key accessories essential to complete the job

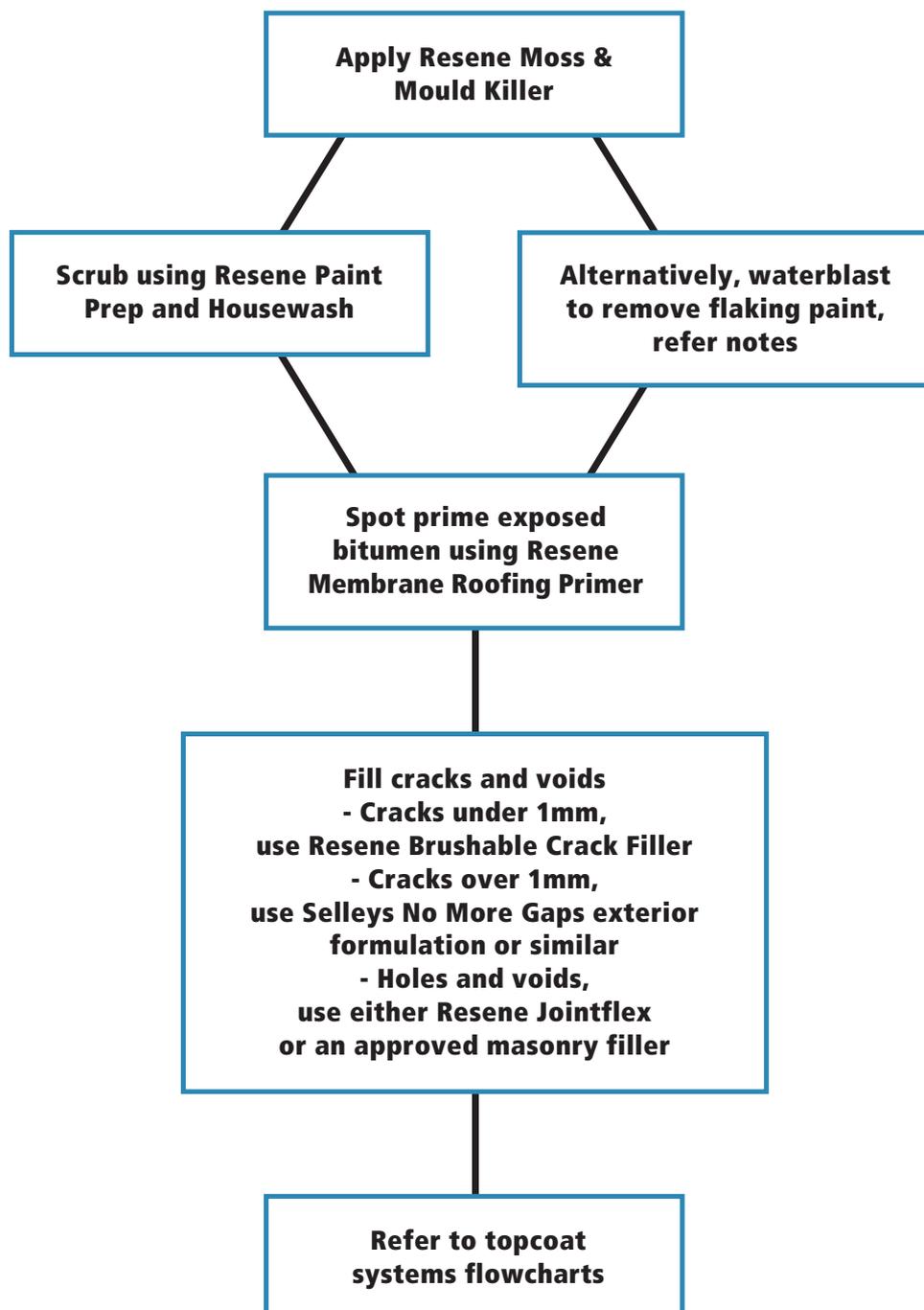
- 50-75mm Resene Blue or Resene Professional brush for cutting in
- Resene Brushable Crack Filler
- Resene Moss & Mould Killer
- Selleys Masonry Filler or Resene Epox-O-Bond

Add-ons – to make the job easier or quicker

- 35-50mm broad knife (for filling)
- Dropsheet
- Rubber gloves and eye protection



Previously painted over old bituminous paints/membranes



Things to consider

- **What is the condition of the surface?**
- **Are there any cracks or voids that will need filling?**
- **What is the approximate size of the area to be painted – how rough (or smooth) is the surface?**
- **How much of the black bituminous coating is exposed?**

Previously painted over old bituminous paints/membranes

Notes:

1. It was common practice well into the 1970's to waterproof concrete, masonry and concrete block buildings with a system comprising a bituminous (tar) basecoat and a waterborne topcoat – often many layers particularly of the bituminous basecoat were used. It was not until the introduction of Resene X-200 that these systems lost favour.
2. Paints – even modern waterborne paints do not adhere well to bituminous paints – Resene Membrane Roofing Primer does. It also adheres to membrane roofing systems.
3. The decision as to whether to waterblast or thoroughly scrub should be considered carefully. Both will clean the surface but waterblasting, particularly with high pressure will remove paint, which otherwise might not have needed to be removed.
4. Bitumen is softer than waterborne paint and is more affected by heat. Therefore avoid mid-range and strong colours as this will cause the paint to crack and flake.

Key accessories essential to complete the job

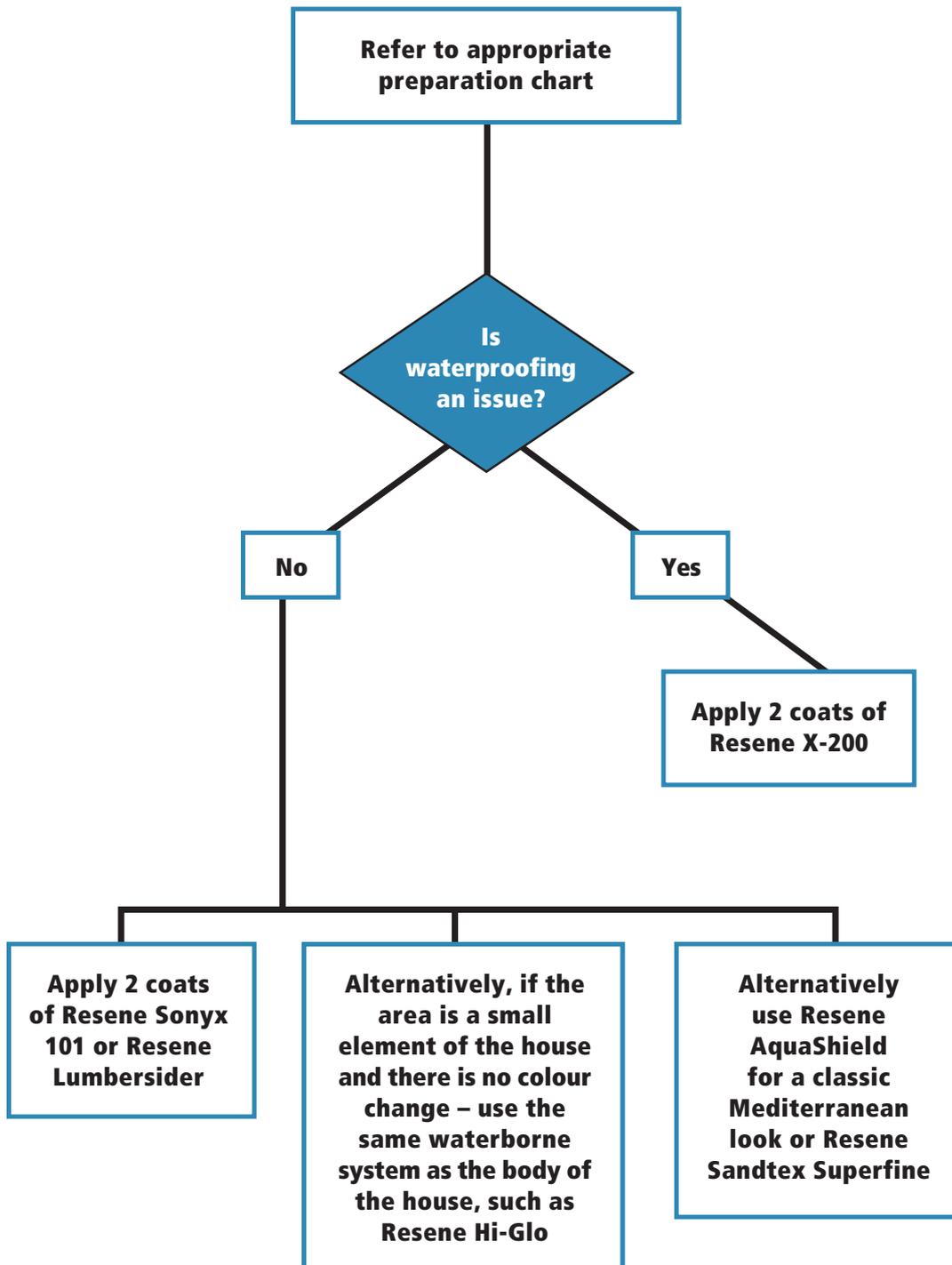
- 50-75mm Resene Blue or Resene Professional brush
- Broad knife
- Resene Brushable Crack Filler
- Resene Moss & Mould Killer
- Selleys Masonry Filler or Resene Epox-O-Bond

Add-ons – to make the job easier or quicker

- 35-50mm broad knife (for filling)
- Dropsheet
- Rubber gloves and eye protection



Stucco, render, plaster, in-situ concrete and fibre cement



Things to consider

- **What is the condition of the substrate?**
- **Is critical light an issue?**
- **Do you have any waterproofing issues?**
- **Will you be painting the rest of the house in the same colour?**
- **What colour do you have in mind?**
- **Are you doing the work yourself?**

Stucco, render, plaster, in-situ concrete and fibre cement

- These substrates are very common on New Zealand and Australian homes. Mostly they will already be painted and either form part of the house's exterior (most chimneys are masonry) or they will be the majority of the home's cladding.
- Even if a house or part of a home isn't leaking, Resene X-200 makes an ideal topcoat for most masonry and stucco. It has a low sheen, durable finish, will fill any hairline cracks and has a wide colour range available in 10 litre pails.
- You may have a small element, such as a chimney or the exposed concrete base of the house, to paint. Assuming you do not intend highlighting this with a different colour to the body of the house, such as weatherboards – then use the same topcoat system as the rest of the house.
- Resene AquaShield or Resene Sandtex (particularly the Superfine version) could be used on an old chimney or concrete basement assuming they were to be painted a different colour to the rest of the house. It could be an attractive feature and will continue to look good years into the future.
- Any gloss will accentuate joints and imperfections as is the case with these textured Monotek sheets, shown here under 'critical light conditions' – a flat paint like Resene Sandtex or Resene AquaShield should be used to minimise this effect.



Key accessories essential to complete the job

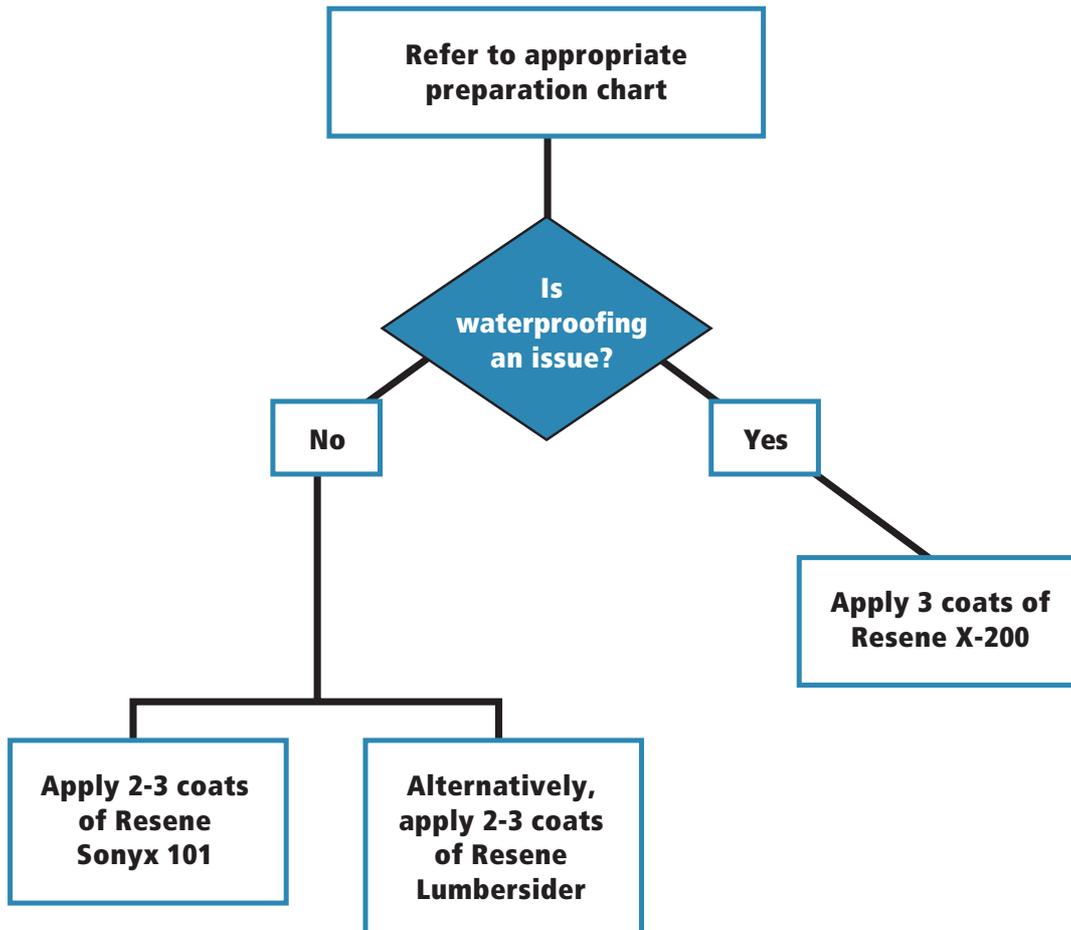
- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- PAL No.2 or No.3 roller sleeve
- Resene Paint Prep and Housewash

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc



Concrete blocks / blockwork



We often get requests for a clear finish on blockwork and concrete and while it is possible to apply Resene Multishield+, Resene F-10 Glaze or Resene Uracryl clear directly to blockwork it may be problematic. This is because any moisture that gets trapped behind the clear film will make the film cloudy. This effect will disappear as the surface dries. Because none of these products are applied thickly enough and blockwork has so many holes and voids it is inevitable that this will occur.



The best solution is to ensure the pointing (the plaster between the blocks) is of a high standard, ideally with added water repellent, and then saturate the wall with Resene Aquapel.

Things to consider

- **How old are the blocks?**
- **What condition are they in?**
- **Is waterproofing an issue?**
- **How large is the area to be painted?**
- **What colour do you have in mind?**
- **Will you be undertaking the painting yourself?**

Concrete blocks / blockwork

- Unpainted concrete blocks usually need waterproofing with Resene X-200. Resene recommend that three coats are applied to ensure that all the voids and holes in the blockwork are filled and therefore waterproofed.
- On new blockwork it is not usually necessary to use Resene Concrete Primer, however if the surface is old, use Resene Sureseal, even if three coats of Resene X-200 are to be used. This is to prevent salt staining, reduce surface porosity and ensure the surface is sound.
- Use two to three coats of Resene Sonyx 101 or Resene Lumbersider, however if either Resene Sureseal (old blockwork) or Resene Concrete Primer (new work) is used, only two coats of the topcoat will be generally needed. If using a red or yellow, a third coat of the topcoat may be required.
- Resene AquaShield may be used as an alternative to the above giving a flat finish with the outline of the blockwork showing through.

Key accessories essential to complete the job

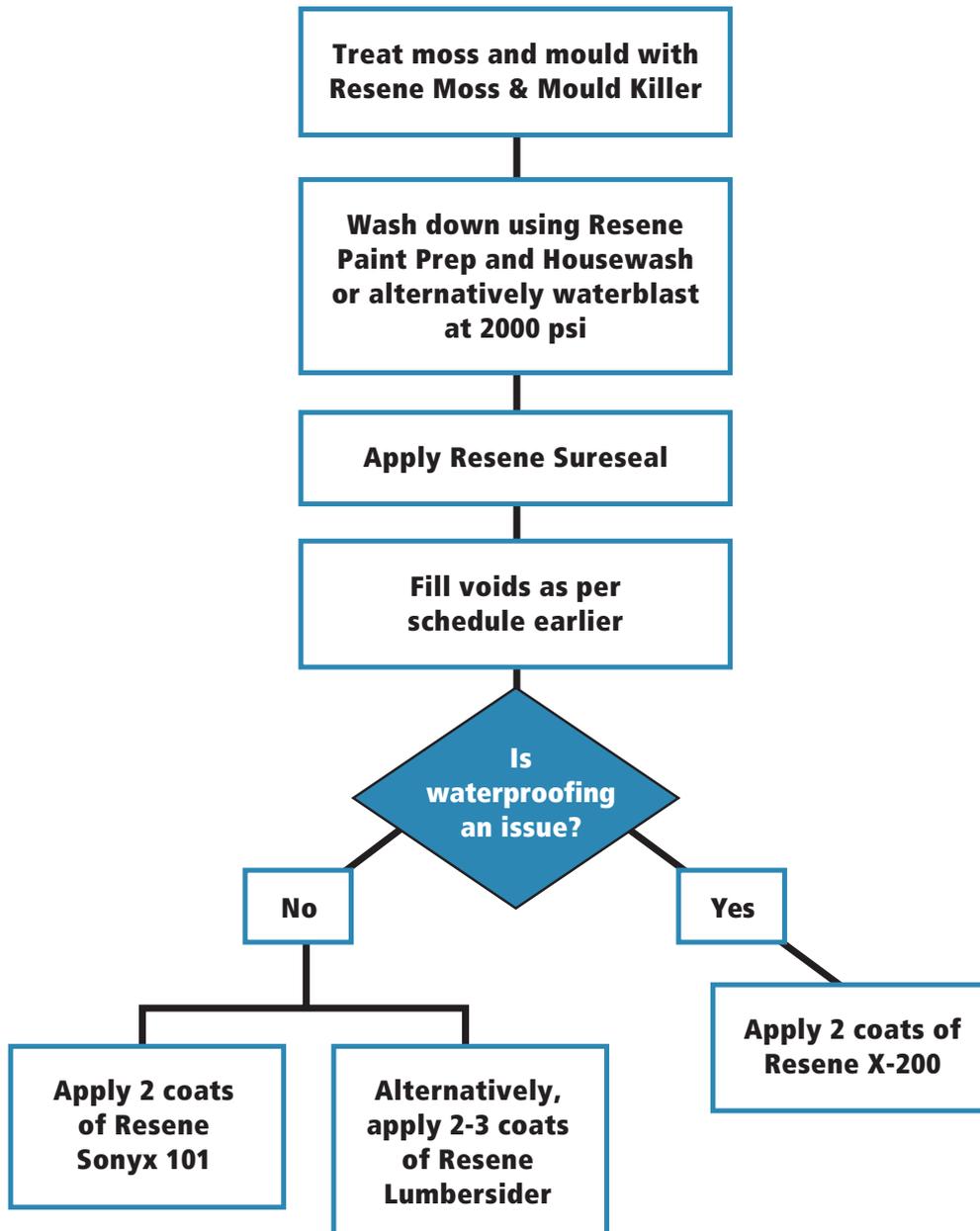
- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- Lambswool or PAL No.3 roller sleeve for Resene X-200 or a PAL No.2 roller sleeve for Resene Sonyx 101 or Resene Lumbersider
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc
- Meths to remove paint splatter from windows



Brickwork



An alternative is to plaster the brickwork using Rockcote. It is popular to plaster over bricks and achieve either a monolithic finish or to retain the patina of the bricks. Resene AquaShield makes an ideal topcoat.

Things to consider

- **Are the bricks old or new?**
- **What condition are they in?**
- **What sort of look or finish do you have in mind?**
- **How large is the area to be painted?**
- **Will you be undertaking the painting yourself?**

Brickwork



Clinker brick style.

- Painting over bricks either new or old is relatively straightforward. Resene generally recommend Resene Sureseal as a first coat to seal the bricks due to their high porosity and bind up old weak and friable pointing. It also serves to hold back potential salt staining on old brickwork.
- Many homes built in the 70's and early 80's were built using 'Clinker bricks', a normal brick with a rough outward facing profile. It is possible to chip the profile off and then plaster to achieve a monolithic finish, however this is not a project for the home handyman.
- Bricks can look quite striking when painted.
- Resene X-200 is the ideal paint for bricks, even if there are no waterproofing issues, as it fills any small cracks and has a low gloss level, which suits a brick construction home.

Key accessories essential to complete the job

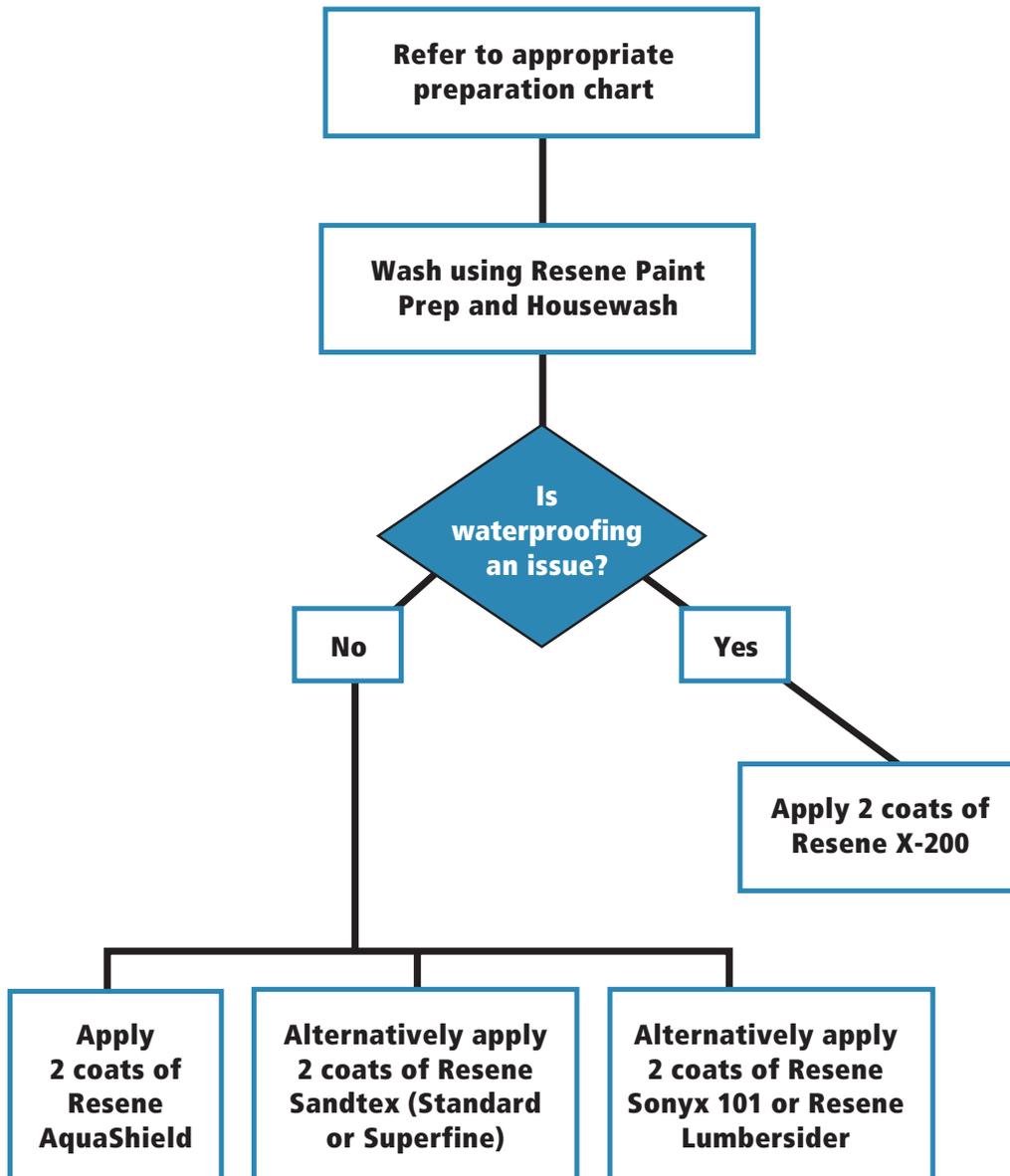
- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- PAL No.3 or No.2 roller sleeve – depending on how deep the pointing is or if Resene X-200 is used
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc
- Meths to remove paint splatter from windows



Mediterranean, monolithic, stucco and masonry



THINGS TO CONSIDER

- **Consider the style of the house.**
- **What condition is it in?**
- **What sort of finish or look are you looking for?**
- **Is critical light an issue?**
- **Is waterproofing an issue?**
- **What colour do you have in mind?**
- **Will you be undertaking the painting yourself?**

Mediterranean, monolithic, stucco and masonry

When a building or construction method is described as being 'monolithic construction' this is a reference to how it looks.

Monolithic buildings may be any age including Art Deco and old masonry but in the main, it refers to modern construction and building types including EIFS systems like Rockcote, Harditex and plasterbased systems.

Unless there are waterproofing issues, the choice of topcoat will be the same and dependant on the aesthetics of the building.

Mediterranean homes are also monolithic but are used to describe a house that has small or no eaves and has a Mediterranean 'look' to it. Typically they are built using textures, plastered fibre cement sheets or plastered masonry. Actual Mediterranean dwellings were typically painted in flat or low sheen finishes and in Italy and Spain limewashes were common.

- Resene AquaShield replicates the look and style of the Mediterranean. It is dead flat and has a chalky aged look to it, but it is both durable and water resistant making it the ideal system for New Zealand and Australian masonry finishes.
- White Resene Sonyx 101 and Resene Lumbersider will both perform well on masonry. Many customers select Resene Lumbersider because of its lower gloss, which will help to disguise surface imperfections and is particularly suited to rougher older textures and Monotek systems.

Key accessories essential to complete the job

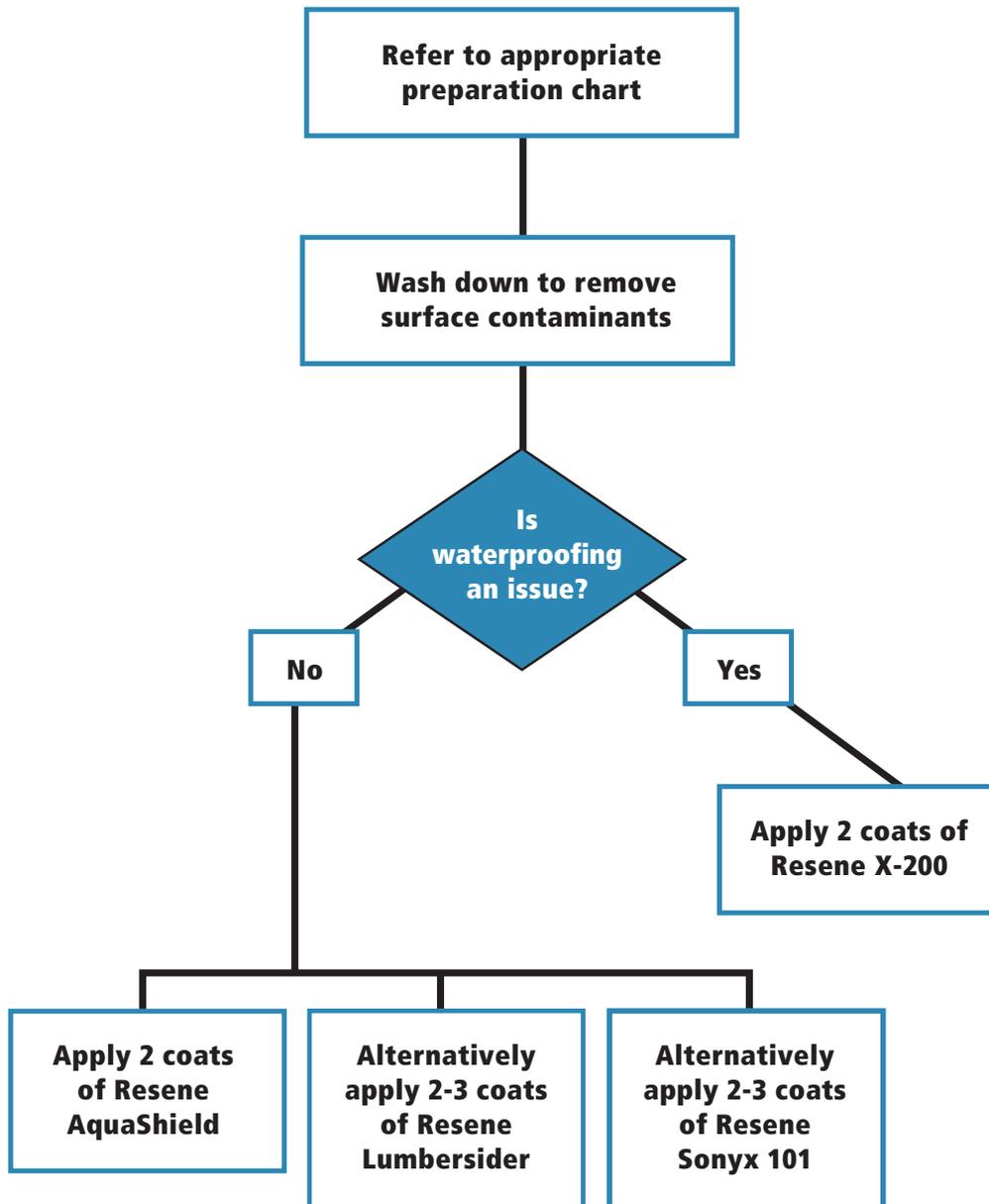
- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- PAL No.1 or No.2 roller sleeve, lambswool or PAL No.3 for Resene X-200 or for rough surface
- Resene Paint Prep and Housewash

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc



Art Deco and heritage buildings



Things to consider

- **What are you painting?**
- **What condition is it in?**
- **What sort of look or finish are you looking for?**
- **Is waterproofing an issue?**
- **What colour or colours do you have in mind?**
- **Will you be undertaking the work yourself?**

Art Deco and heritage buildings

Notes:

1. Most homes of this vintage will be previously painted with the coating either in poor condition or sound.
2. Many old buildings were coated in limewash, which is both friable (poorly bound) and weak. While inevitably they have been repainted over the years problems often arise when waterblasting. The coating is so weak that the painter will quite literally need to blast the whole lot off – something to be avoided. That's why Resene generally recommend thorough washing. **If the paint is very badly flaking, then complete removal and priming with Resene Sureseal may be the only option.**
3. Resene X-200 is a finish in itself and generally doesn't require overcoating, with the following exceptions:
 - i) When you want to highlight features on the building, this may be easily done by overcoating with Resene Sonyx 101 or Resene Lumbersider.
 - ii) When the colour isn't available in Resene X-200. If the building leaks or has the potential to then coat it in Resene X-200 first – usually in a shade that will require only one topcoat of Resene Sonyx 101 or Resene Lumbersider to achieve coverage.
 - iii) When you are painting a leaky building but want the look or finish of products like Resene AquaShield or Resene Sandtex, use Resene X-200 first then follow with your preferred specialist coating.
- 3a. If Resene X-200 is used it must be applied without an extension pole so the paint is forced into cracks and voids – something you cannot do with an extension pole due to the angle of pressure when an extension handle is used.
4. The best look for these buildings is Resene AquaShield – it is both in keeping with the style of the era and performs exceedingly well.

5. Resene Lumbersider is an option but generally it is better to use Resene Sonyx 101, as it is more washable and stays cleaner. As Resene Lumbersider has half the gloss level of Resene Sonyx 101, it could be used if the building has a lot of visual defects and old flaking paint etc.

Key accessories essential to complete the job

- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- Lambswool or PAL No.3 roller sleeve for Resene X-200 and/or rough surfaces
- PAL No.1 or No.2 roller sleeve for standard finishes
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc
- Meths to remove paint splatter from windows

Case study Wellington Wharf Apartments



History:

Built around the turn of last century the Wharf Apartments were originally offices and a bond store for the Wellington Port Authority. For many years through the 1980s and 90s they were allowed to deteriorate despite the Historical Places Trust conservation rating.

In the mid 1990s they were strengthened, refurbished and developed into apartments and an occasional art gallery.

Initially they were painted in the following system:

- Windows and joinery – Resene Super Gloss enamel
- Masonry and plaster – Resene Lumbersider



However the close proximity to the sea and a major road (Customhouse Quay) meant the paint deteriorated quite quickly and looked shabby, so six years later it was decided to repaint.

The system chosen this time was:

- Windows and joinery – Resene Enamacryl gloss waterborne enamel
- Off-white masonry – Resene AquaShield
- Green base (masonry) – Resene Lumbersider

The body corporate are very pleased with how the Resene AquaShield in particular has maintained its appearance.

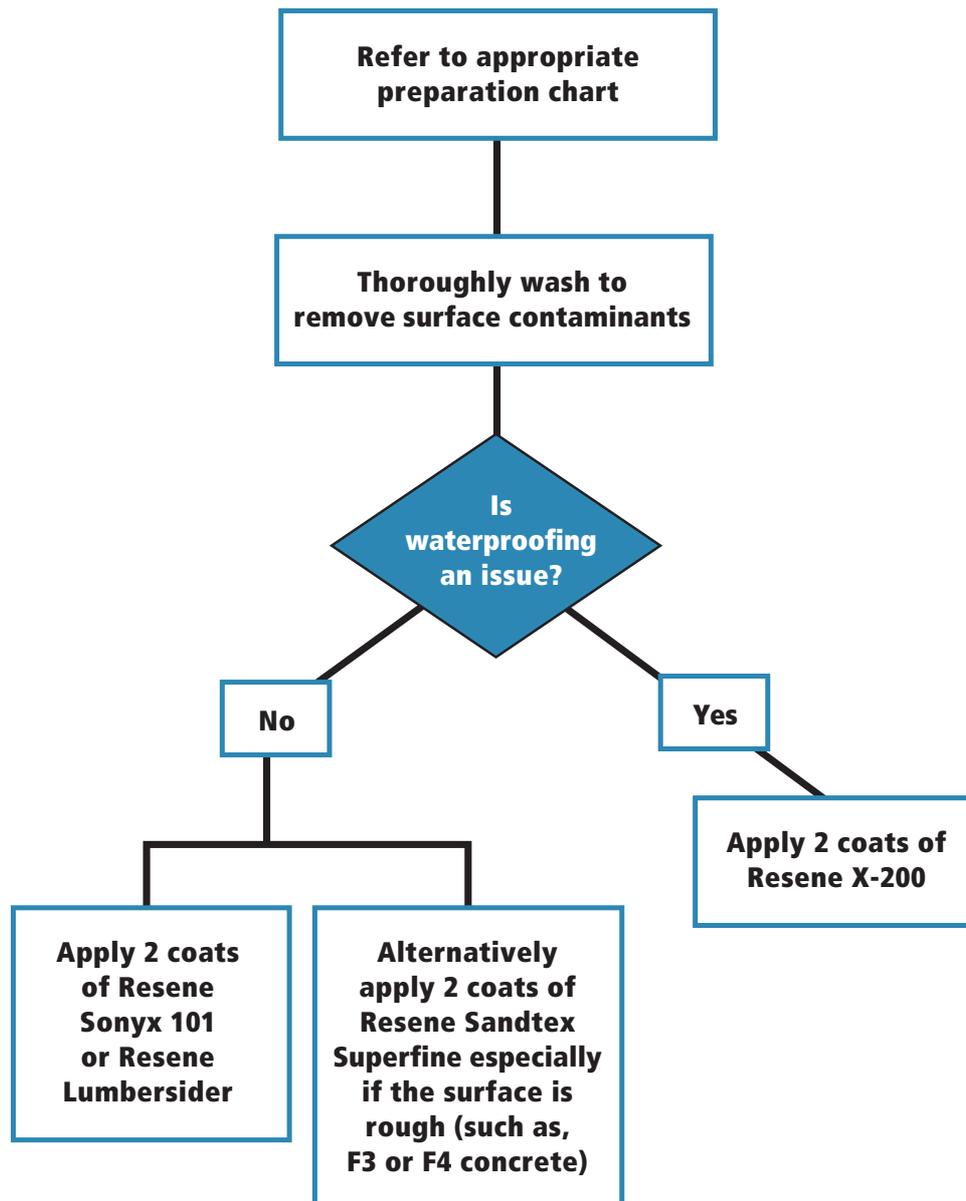


The key points are:

1. Resene AquaShield is dead flat so it doesn't show any imperfections or plaster repair on the masonry.
2. The flat finish is historically correct as the original coatings would have been flat, so the Resene AquaShield looks the part.
3. Resene AquaShield is remarkably self-cleaning, so the road grime, salt and other windborne contaminants wash off.



Commercial – precast and in-situ concrete, fibre cement panels, tilt slab



- i) An optional glaze coat of Resene Multishield+ may be applied to increase durability and dirt resistance.
- ii) Resene Uracryl clear glaze may be used as an anti-graffiti glaze coat.

Things to consider

- **How is the building is constructed?**
- **What colours do you have in mind?**
- **What sort of look or finish are you looking for?**
- **Is waterproofing an issue?**
- **Who will be doing the painting?**

Commercial

1. For this section on commercial buildings we have not included high rise buildings. Also many older commercial buildings will typically fall into the heritage, Art Deco or masonry categories.
 2. Most recently constructed commercial buildings will at least in part be clad with a cementitious product, usually either:
 - Compressed sheet, such as Titan Board or ExoTec panels
 - Concrete block
 - Poured or precast concrete
 - Harditex, Hardiflex or Monotek (or similar)
- These substrates are usually used in combination with other building products, such as COLORSTEEL® or COLORBOND®.
3. Anti-graffiti coatings may be required – often a Resene Uracryl glaze coat is applied up to 3 metres high in areas that are likely to be ‘tagged’. Graffiti is more difficult to remove the longer it is left on the wall and if the surface is textured or rough. Please contact Resene for more information on this option.
 4. For a building that is already painted, our best recommendation would usually be Resene Sonyx 101.
 5. A glaze coat, such as Resene Sun Defier or Resene Multishield+, will extend the life of the paint coating and is ideal for signage and where the building has been painted in identifiable corporate colours, which are typically strong shades. This will extend the time until the next repaint or the longer the paint will retain its original colour, important for signage and defining colour schemes.
 6. Resene Sandtex Superfine was developed initially for the Australian market for commercial and residential construction where the use of concrete and cement renders are common. Resene Sandtex Superfine will help disguise surface imperfections.

Key accessories essential to complete the job

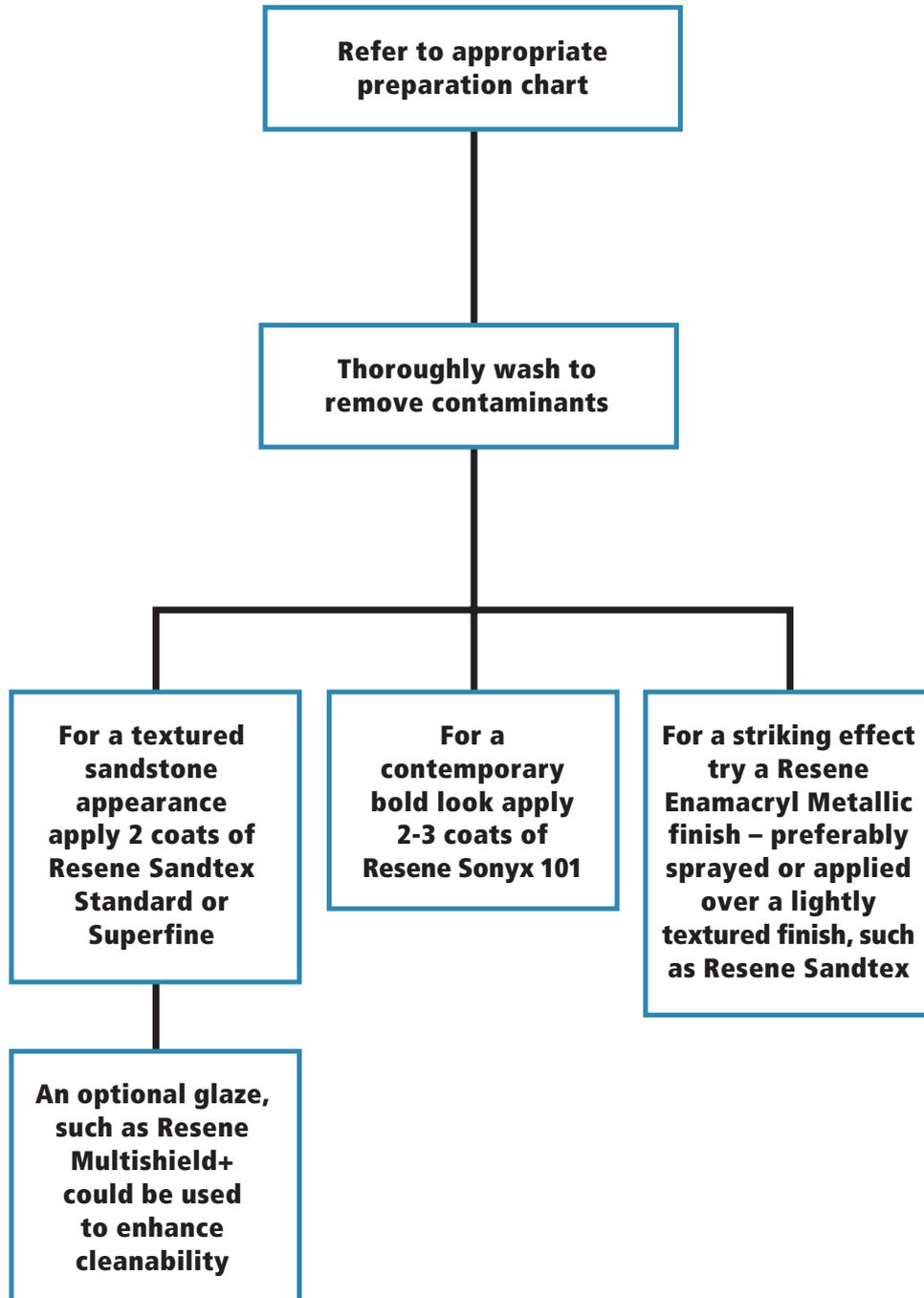
- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- Hi solids roller for Resene Sandtex Standard or PAL No.2 for Resene Sandtex Superfine
- Lambswool or PAL No.3 roller sleeve for Resene X-200 and/or rough surfaces
- PAL No.1 or No.2 roller sleeve
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc



Designer/modern homes



Things to consider

- **What is the building being painted?**
- **What cladding does the building currently have?**
- **What condition is the cladding in?**
- **What look or finish are you looking for?**
- **What colour or colours do you have in mind?**
- **Will you be undertaking the work yourself?**

Designer/modern homes

1. The use of concrete and compressed sheet with expressed joints, such as Titan Board or ExoTec Panels, in residential construction is increasing. Traditionally these were the sole domain of commercial construction.
2. Mostly they are used in combination with other building materials, such as weatherboards, both timber and fibre cement (Linea) or COLORSTEEL® or COLORBOND®. Very often it is to create a feature or dramatic impact and the chosen topcoat colours are usually bold and/or bright. Use Resene Sonyx 101 as the paint colour for a dramatic effect, although Resene Lumbersider may also be used (especially if the colour selected is not available in Resene Sonyx 101).
3. Strong colours are more dramatic the higher the gloss level of the paint finish.
4. The use of a glaze, particularly Resene Sun Defier, will increase the time to first maintenance.
5. Alternatively Resene Sandtex or Resene Thixalon 5 textured using a goop loop roller could be used, particularly if the surface is rough.
6. Resene Enamacryl Metallic could also be used. It is especially striking either direct to a primed surface or over a subtle texture, such as Resene Sandtex.

Key accessories essential to complete the job

- 50-75mm Legend or Haydn Ultimate brush
- Extension pole (depending on access)
- Fillers as per schedule
- Lambswool or PAL No.3 roller sleeve for Resene X-200 and/or rough surfaces
- PAL No.1 or No.2 roller sleeve for standard finishes
- Resene Paint Prep and Housewash
- Roller tray and handle

Add-ons – to make the job easier or quicker

- Dropsheet/s
- Masking tape – for around windows etc
- Meths to remove paint splatter from windows

Other Resene tools



EZYPAIN – Easy virtual painting, testing colour combinations using our extended gallery of typical houses and buildings or virtual painting your own home or project.

Resene EzyPaint is free from www.resene.co.nz and available on CD Rom instore.



RESENE IS COLOUR – Don't forget our instore colour library and free colour cards. Remember most colours are available in Resene testpots so you can try out your favourite colour on the area you are planning to paint.



Resene Paints Ltd:
Certified since 1996

Choose **Environmental Choice Products**. They are not only better for the environment, but strong paint odours may cause a raft of nasty side effects, from skin irritations to asthma, headaches and dizziness.

Environmental Choice products are a healthy choice!



RESENE COLORSHOP CARD – Enjoy special privileges and discounts.



RESENE SHOPCARD – Ask your Resene ColorShop staff member for a copy of the Resene Shopcard with their details so you can quickly contact the Resene ColorShop and staff member should you have any questions once you get home.

Recommended roller sleeves

	Resene X-200	Resene AquaShield	Resene Sonyx 101/Resene Lumbersider	Resene Sandtex	Resene Thixalon 5
Cement board smooth	Lambswool	PAL No.1	PAL No.1	Hi solids	Hi solids
Concrete block	Lambswool	PAL No.2	PAL No.2	Hi solids	Hi solids
EIFS system	Lambswool	PAL No.2	PAL No.2	Hi solids	Hi solids
Medium textured finish, such as Resitex Medium	Lambswool	PAL No.2	PAL No.2	Hi solids	Hi solids
Pebbledash	Lambswool	PAL No.3 or Lambswool	PAL No.3 or Lambswool	N/A	Hi solids
Rough textured finish, such as Resitex Coarse	Lambswool	PAL No.3	PAL No.3	N/A	Hi solids
Small textured finish, such as Resitex Standard	Lambswool	PAL No.2	PAL No.2	Hi solids	Hi solids
Sponge finished plaster	Lambswool	PAL No.1	PAL No.1	Hi solids	Hi solids

How much paint is needed for the job?

To work out the volume of paint you need, you will need to know the following information:

(1) Roughly the size of the area to be painted

For example, multiplying the length by the height in metres gives the area in square metres.

- A three bedroom home will need approx 30 litres of paint for two coats of Resene Sonyx 101 or Resene Lumbersider on the exterior walls.
- A four bedroom home will need about 40 litres for two coats of Resene Sonyx 101 or Resene Lumbersider.

These rough guides assume a smooth surface. The spreading rate will increase the rougher or more textured the surface, so add an extra 10 litre pail if the surface is quite textured or profiled.

You may need more paint than this but this is a reasonable guideline if measurements are not available.

- Two storeyed homes generally need more paint as there are fewer doors and windows.
- Higher build paints and coatings, including Resene X-200, have lower spreading rates and more paint will be used (see below).

(2) The spreading rate of the paint

The spreading rate as stated on the pack or relevant data sheet refers to the usual rate of application on a smooth surface. This will increase the rougher or more textured the surface.

The total area is divided by the spreading rate and multiplied by the number of coats needed, the answer being the litres of paint required.

$$\frac{\text{Area}}{\text{M}^2 \text{ litre}} \times \text{Coats} = \text{Litres}$$

$$\text{Area in square metres} \div \text{spreading rate per litre} \times \text{number of coats} = \text{litres of paint}$$

Coats and spreading rates

Product	Data Sheet	Usual no. of coats	New concrete	Compressed sheets	Concrete blocks	Fine plaster	Medium stucco	Coarse stucco
Resene AquaShield	D601	2	12	NR	10	8-10	6-8	4-6
Resene Concrete Primer	D405	1	10-12	12	8-10	10	8	6
Resene LimeLock	D809	1	10-12	NR	NR	10	8	6
Resene Lumbersider	D34	2/3*	12	12	10	10	6-8	4-6
Resene Sonyx 101	D30	2	12	12	10	10	6-8	4-6
Resene X-200	D62	2*	6	6	4-5	4-6	3-4	2-3

* Resene Lumbersider self primes, therefore allow for three coats.

* Resene X-200 requires three coats for waterproofing blockwork.

Appendix

- 1. Background on concrete**
- 2. Cracks in concrete and plaster**
- 3. Efflorescence**
- 4. Form oils and release agents**
- 5. General construction terms**
 - i) Columns**
 - ii) Compressed sheet**
 - iii) Construction sealants**
 - iv) Curing agents**
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 - vi) Elastomeric**
 - vii) Formwork**
 - viii) Harditex/Monotek**
 - ix) In-situ concrete**
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- 7. How to apply Resene Sandtex**
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- 14. Salt staining**
- 15. Waterblasting**
- 16. What's the big deal about Mediterranean finishes?**

Background on concrete

Concrete is a very useful building material made by mixing cement, sand and aggregate (known as metal) with small amounts of water. The wet material is poured into moulds or formwork where it 'sets' and dries to a very hard and durable material.

Concrete is a marvelous material. It is fireproof, has excellent insulation properties, is strong and hardly erodes when properly engineered.

Ted Nightingale, the founder of Resene, served for many years as President of the NZ Concrete Association. Most of the products he developed in the 1940s and 50s were to coat concrete or help in its curing. This includes Stipplecote, after which the company was formally known.



Concrete will be affected by:

1. Acid attack caused by rain mixing with pollution in the atmosphere and resulting in acid rain. Over time this will erode concrete and other lime based structures.
2. Extreme cold – when ice forms in cracks containing water, as the water forms to ice it expands, resulting in spalling (surface breaking) of the concrete.
3. When the steel reinforcing is set too close to the surface, allowing moisture ingress that causes rusting of the reinforcing. This in turn, also causes 'spalling' as the rust occupies a greater volume than the steel reinforcing.
4. Concrete may also crack due to earthquakes or subsoil ground movement, leading to the ingress of water and in particular salt, causing further damage to concrete.

Paint coatings can, in addition to decorating concrete, protect the surface from erosion and greatly increase the useful life of concrete buildings.



Cracks in concrete and plaster

Cracks will form in concrete, plasters and other cementitious surfaces as they cure and as a result of excessive movement, such as the building settling or an earthquake.

Their occurrence is not at all unusual and dealing with them is relatively straightforward. Concrete and plaster 'cure' as water used in the 'wet' mixture dries out, inevitably resulting in small surface or capillary cracks forming. They are easily covered by a standard paint system, such as Resene Concrete Primer followed by two coats of Resene Sonyx 101 or Resene Lumbersider.

Hairline cracks are bigger or wider, usually up to 1mm across. This is significant when you consider a layer of Resene Lumbersider is applied at only .035mm or in other words it would take 35 coats of Resene Lumbersider to achieve a paint film that was 1mm high.



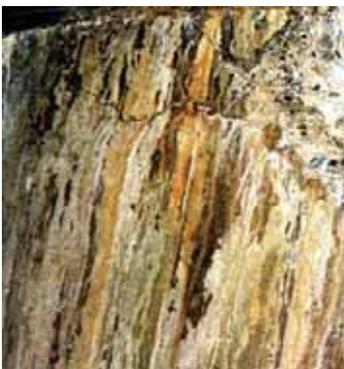
Hairline cracking often occurs as the cementitious surface (usually plaster or render) cures, especially if it is hot or dry, as water in the concrete mixture evaporates quicker than it would normally.

Resene Limelock is designed to slow water evaporation ensuring a better cure with less surface cracking than would otherwise be the case. You may also have noted builders and plasterers spraying water on fresh plaster and concrete to prevent it drying out too fast.



Resene X-200 is ideal for brushing into hairline cracks with three coats easily filling a 1mm crack. Alternatively, Resene Brushable Crack Filler may be used.

Cracks larger than 1mm may be filled with Resene Brushable Crack Filler but multiple coats will be needed. Alternatively a masonry filler or flexible (tube applied) sealant may be used. If the crack is likely to move again a flexible sealant should be used, otherwise masonry filler products, such as Resene Jointflex A or Rockcote Multistop, are easier to use and look better. The example shown will need filling with a plaster or epoxy filler due to its size.



Efflorescence

Another form of salt is formed when water reacts with lime in concrete, usually when the concrete has a crack that allows water to seep through the material. The dissolved salts react with carbon dioxide in the air and a white deposit forms (efflorescence). This is always indicative of a leak that needs to be fixed and is common on both interiors and exteriors.

The deposit is similar to stalagmites and stalactites found in limestone caves and is difficult to remove. Good sanding is required and the source of the leak repaired, prior to repainting. Always seal first with

Resene Sureseal, because often the cement has been weakened adjacent to the problem. The photo is from a basement and shows an extreme example of efflorescence.

Form oils and release agents

Form oils and release agents are used when concrete is poured into a precast mould or used with formwork, which is built on site and in-situ concrete is then poured into the form (formwork) rather like greasing a cooking tray before putting a cake mixture in it.

They are usually brush applied or sprayed on and are made from waxes and oils, such as paraffin wax. Invariably residue will be left on the concrete surface when the moulds or formwork is removed and paint will not stick to them.

Resene ✓ Popular Paint Systems

Concrete, plasters and cement-based substrates



While over time natural weathering will remove these waxes and oils, it may take several months to do so. Waterblasting will not itself remove them either. Just as you need to use detergent to wash oil and grease off your clothes at home, detergents need to be used to remove formwork residue.

In most cases Resene Paint Prep and Housewash, which contains a detergent, will suffice, however some stubborn wax and oil residues may need a stronger product such as Resene Emulsifiable Solvent Cleaner, a combination of solvent and detergent that may be dissolved in water.



General construction terms

Columns

Columns are upright structural support members, usually square, round or rectangular. They are made of reinforced concrete. Columns carry vertical loads (weight). They can be either isolated or attached to a wall. Most often columns are poured in-situ and may require remedial work as described above (or a textured coating). The building shown clearly shows the columns and the spandrel panels beneath the windows.



Compressed sheet

Compressed sheet is a fibre-reinforced cement sheet made from sand, cement and cellulose fibre (for added strength) and is used as a cladding material usually on commercial buildings, however increasingly on residential.



The sheet is designed for use as a substrate for both low and high-build coating systems. It has a smooth surface and is fixed in place by screws then filled and sanded back smooth before painting. The joints are left exposed and not filled as they are with Harditex. Compressed sheet is similar to Titan Board and its replacement Exotex panels – from a painting perspective they are treated the same.



Compressed sheet is often used as a substrate for metallic finishes usually applied over a low to medium build texture, such as Resene Sandtex or Resene Thixalon 5.

This medical centre extension used compressed sheet that was subsequently painted in Resene Lumbersider for the new entrance and foyer. The second photo shows sheets after fixing and before painting.



Construction sealants/sealants

A sealant is a sticky, viscous liquid that is put into a joint where it stiffens, becomes rubbery and adheres to the sides. There are many types of sealant, the most common being mastic and elastomeric. Most sealants can not be painted over as they contain plasticisers, which will migrate through the paint becoming sticky and trapping dirt, resulting in dark lines on the building.

Sealants are used in both commercial and residential construction; the bigger the gap that needs bridging the more sophisticated (and expensive) the sealant needs to be.

The first photo shows a construction sealant between two stone-chip spandrel panels.

In this second photo, someone has filled a series of cracks using a sealant. The result after a few years is this unsightly series of stripes, where plasticisers from the sealant have, over time, migrated to the top of the paint surface and as they are 'sticky' have attracted road grime and dirt.



As a rule, most commercial sealants should not be painted over. However most sealants used for minor exterior repairs or for minor jointing and gaps, such as around window frames, are paintable. For example Selleys All Clear and Fosroc's MS Silicone sealant may be painted, once cured. However, always check the manufacturer's recommendation.

Curing agents

Curing agents are admixtures that are put into concrete to hasten setting and increase the early strength of concrete. This allows faster removal of formwork, surface traffic sooner or in the case of tilt slab, quicker time to erection. Curing agents are also known as accelerators.



EIFS (Exterior Insulation and Finishing System)

EIFS usually consists of boards of rigid and moisture-resistant expanded polystyrene, fixed into place by special nails with plastic washers, then covered with a modified acrylic/plaster system of multiple layers and finished with a paint type coating. Most commonly used in the residential housing market as it provides good insulation.

Elastomeric

Elastomeric materials are usually polymers or resins (usually polymers) with elastic properties, described as the ability to stretch and return to its original shape. It may also be described as having an excellent 'memory' of its original shape when distorted.

A rubber band is a good example. This property is very useful in paint, as it will have the ability to cover large cracks that are continually moving requiring the coating to expand and contract with it. Resene Flexicover E is an elastomeric type coating.

Formwork

Formwork is anything that holds fresh in-situ concrete in place until it hardens, such as plywood shutters, timber planks, steel pan forms and fibreglass moulds. Formwork is usually stripped after 24 hours for vertical surfaces, such as columns and walls.

Under soffits of beams or slabs, the forms are either left in place until the concrete has gained sufficient strength or they are removed followed by back propping.



Harditex/Monotek

Harditex is the brand name for exterior fibre cement boards with beveled edges, which come with a thickness of 7.5mm for most residential applications and 9mm where extra strength is needed. Made by James Hardie, in Australia they are referred to as 'Blue Board'. It is easily identified as it comes in a pink colour (Monotek is blue). After fixing to framing, the joints are then filled and sanded smooth, a textured coating is then applied to provide a decorative and protective finish and to disguise the joints. This is why we do not recommend smooth finishes like Resene Lumbersider on Harditex or products with a high gloss. There are very detailed instructions on correct fixing, corners and filling/finishing of this product. Each step must be followed very closely. The photo shows Harditex sheets that have yet to be filled, textured and/or painted.

Monotek has now taken over from Harditex as James Hardie's fibre cement substrate recommendation.



In-situ concrete

As mentioned above, in-situ concrete is poured on site, typically into formwork, a mould usually made from timber or plywood that determines its shape.

Generally the end finish will vary and will not be as smooth as precast concrete. This will not impact on its performance. However if the concrete is to be painted it may need plastering or remedial work to bring it up to the agreed standard.

Alternatively (and this is a very common commercial practice) a high build textured coating, such as Resene Thixalon 5 or Resene Sandtex Standard or Superfine, will be applied to disguise surface imperfections. This is often a cheaper option than plastering and then painting.

Levels of Finish

Specifiers use the levels of finish for concrete in the same way they do for paperfaced plasterboard – to reflect the quality of the surface that is required to be achieved. In the main it is used for commercial projects and industrial projects.

However, as concrete is increasingly being used on new homes, the need to appreciate levels of finish for concrete is increasing as the architect will specify a high quality finish for the concrete and often a clear sealer, such as Resene Aquapel, which helps retain the look of the concrete by deterring mould growth.

The levels of finish for concrete are described below:

- F1 - No finish at all, usually foundations or walls that are to be backfilled.
- F2 - Concrete that requires plastering before painting.
- F3 - Generally smooth surface, but with surface imperfections, used where it is not subject to close scrutiny. Typically associated with structural concrete in areas that are not highly visible.
- F4 - Smooth and of a high standard, few surface defects.
- F5 - Better than F4, virtually no defects, bug holes etc.
- F6 - Very high quality finish, perfect, no bug holes or surface imperfections, includes G.R.C. (Glass Reinforced Concrete). Concrete used in highly visible areas.

Most concrete specified in New Zealand and Australia is F4 with some F5. The problems arise when an architect specifies F5 and the construction firm delivers F3 or F4.

In such situations they either:

1. Reduce the cost of the concrete to the owner (discount off).
2. Plaster to achieve the desired level.
3. Use a textured or high build paint to disguise the imperfections.

Masonry fillers

A masonry filler is used to fill defects and bug holes in concrete/masonry surfaces to provide a smooth finish where plastering of the whole surface can not be carried out. These fillers may vary from cement-based products, such as plasters, to modified cement/acrylic fillers. Masonry fillers are often used to bring concrete block surfaces up to a smooth finish.

This practice, particularly on concrete is also called 'bagging' although often this is a simple mix of sand and cement. This may be problematic if the mix dries too quickly.



Pebbledash plaster

Pebbledash plaster is a type of very rough plaster. Small graded stones (or pebbles) are thrown onto wet plaster. It may be both difficult and costly to paint because of the large surface area. It is not uncommon to use between 150 and 200 litres on a typical 3-4 bedroom home. This finish was popular in Hawkes Bay until recently. The painted fence shown is many years old – but is a good example of pebbledash plaster.

Precast concrete

Precast concrete is typically produced off-site and is delivered to the construction site and placed in position.

Precast concrete is most commonly used for the spandrels of a building, usually on a high-rise. The spandrels are the concrete elements that span between columns of a high rise, usually with windows placed above them. The columns are generally poured on site and are also referred to as in-situ concrete (poured in place or in-situ).

Precast panels are typically smoother and have a better finish than in-situ concrete.

Rebar

Rebar is an abbreviation for reinforcement bar, a steel rod used as reinforcement for concrete that is in a load bearing situation. The steel rods are placed inside the formwork and tied together with metal wire, and then the concrete is poured around them. In most environments in New Zealand it is required that the steel rebar has at least a 25mm covering of concrete over it to protect it from corrosion.



Spalling

Spalling occurs when the rebar within the concrete (or plaster) corrodes due to cracks and/or weakened (carbonated) concrete or inadequate concrete cover over rebar.

As the steel corrodes (rusts) it expands and as concrete has little tensile strength it cracks and ultimately will fall off.

This is sometimes also called concrete cancer.

Spandrel panels

Spandrels are the structural panels in a wall, usually under the windowsill on one floor and extending down to the window head (top of a window) of the storey below. They are typically made from reinforced precast concrete.

Stucco

Stucco is derived from an Italian word and literally means 'to stick'. Wet plaster is 'cast' onto the surface in a regular or irregular pattern. In some applications and styles it is thrown on.

The pattern on the surface of most older New Zealand plaster homes is referred to as stucco. Another example is the Spanish style. As a rule any plaster finish or render could also be described as stucco.

The photo shows old stucco, or concrete, that has been 'flicked or thrown on' the wall. The bond between the concrete and 'cast' plaster was poor as areas have fallen off.



Tilt slab

Tilt slab is concrete that is poured directly onto the floor slab of a building. It is a method that it often used for light commercial buildings and warehousing. Typically the height of the slab will be about 2-3 storeys high (10-12 metres).

The weight and size will be limited by the ability of a mobile crane to lift them into position. Both precast and In-situ concrete are poured into moulds that determine their final shape. In order for the concrete to come away from the mould easily, builders liberally apply form oils or release agents to the moulds that allow them to be removed easily, just as you would when making a cake or muffins.

Tyrolean plaster

Tyrolean plaster is similar in many ways to stucco, but is applied using a mechanical applicator that 'throws' the wet plaster on the wall in a regular pattern.

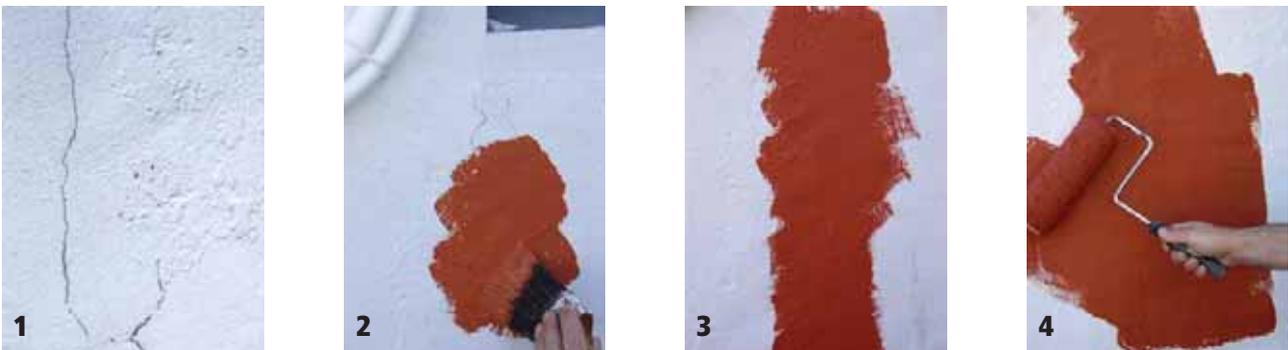
A similar system is used for the Resene Resitex range of textured finishes, which are applied using a hopper gun.

How Resene X-200 works

Waterproof coatings need to perform the following:

1. Act as a water barrier and stop water from getting into the cementitious surface and ultimately into the house (or building).
2. Allow water vapour to pass through from inside the house or cladding.
3. Have sufficient movement or flexibility in the paint to cope with building movement, such as the settling that occurs as the building ages, earthquakes etc.
4. Bridge and fill hairline cracks in plaster.
5. Adhere well to cementitious surfaces.

Resene X-200 performs these tasks extremely well. It also looks good, has an extensive colour range and is proven.



The series of photos above shows:

1. A crack that measures approx 1mm across.
2. Resene X-200 is brushed into the crack. This is best achieved by brushing across the crack not down it.
3. The finished Resene X-200 stripe.
3. After drying apply two coats of Resene X-200 by roller. Here a lambswool roller is being used. After finishing there will be the equivalent of three coats of Resene X-200 over the cracked area, a film build of approx 250 microns or four to five times the film build of two coats of Resene Lumbersider.

Resene X-200 has been used to waterproof New Zealand and Australian buildings in some of the most extreme and wet environments for over 15 years. Resene X-200 contains a 'mini-fibre' that acts like a reinforcing mesh and helps when filling hairline cracks up to 1mm across. Resene recommend that cracks of this size be 'striped' – brush the first coat into the worst cracks and then apply two further coats over them and the rest of the surface.

The best way to apply Resene X-200 is with a lambswool roller sleeve (a PAL No.3 may also be used) or brush. It is important to force Resene X-200 into cracks and voids for it to work.

Resene X-200 must be applied at least twice as thick as you would apply a paint like Resene Lumbersider to perform its primary function as a waterproofing coating.

How to apply Resene Sandtex

Resene Sandtex comes in two finishes, Standard and Superfine. The main difference between the two being the size of the synthetic 'sand' used. This in turn affects the application characteristics.

Resene Sandtex (Standard)

A very versatile product, Resene Sandtex will look different depending on how it is applied. When sprayed, either through a hopper gun or powerful airless sprayer, Resene Sandtex looks similar to sponge finished plaster.

Hire an experienced applicator if you want a sprayed finish. Resene Sandtex is typically applied by both commercial and DIY users either by brush and/or roller.

The only effective way of brushing Resene Sandtex over large areas (as opposed to cutting in) is to use a **crow's foot or cross-hatch** technique (see diagram below), which shows the obvious brushstrokes. The pattern may be as regular or irregular as you want and as high or low build as desired. Resene recommend a fairly irregular or random style and to apply in two or even three heavy coats.



This will easily disguise surface imperfections (such as found on Harditex sheets – new and refurbished) and looks much better than when it is applied more sparingly.

While almost any large brush 75-100mm may be used, a straw pasting brush is ideal and also leaves very obvious brush lines in the finish, which adds to the overall look and style.

Alternatively Resene Sandtex may be rolled on by one person while a second follows behind using the crows foot technique.

When rolling use a hi solids roller. The key to a good finish is to apply a thinner anchor coat first and be relatively generous with the amount of product being applied. Follow these simple guidelines:

- Apply an anchor coat first. There is no need to use a basecoat of Resene Lumbersider if this is done.
- Mask off the edges, as it is important to get the roller or brush close to the skirting boards, soffits and other edges.
- Apply a build coat using a hi solids roller.
- Get plenty of product on the wall and lay off once there is enough on the surface – say every 50-75mm depending on how high the wall is.
- Always maintain a good wet edge. Avoid painting in the sun or when it is too hot, and lay off regularly (as above).

Resene Sandtex Superfine

Resene Sandtex Superfine is easier to apply due to the smaller size of the synthetic sand. Use a PAL No.2 or No.3 roller instead of the hi solids roller as recommended for the standard version.

Resene Sandtex Superfine is ideal for concrete and masonry as its flat finish and texture help hide surface imperfections. Typically it is applied in two coats by brush or roller over a suitable primer, such as Resene Concrete Primer.

While it may be brushed using the crows foot technique the Resene Sandtex Standard should be preferred if a crows foot finish is desired.

Light reflective values

The amount of light a colour will absorb or reflect is expressed as a % out of 100, with white equating to 100 and black equating to 1.

All of us can appreciate that the darker the colour the more light it absorbs and the hotter the surface will be. In the heat of summer you could easily fry an egg on a roof painted a dark grey or green.

How hot a substrate gets is important for two reasons. Firstly in hotter climates it is obviously desirable to have the walls of a house reflect heat rather than attract heat. Likewise in cold climates the opposite may apply. Secondly some cementitious substrates, particularly those using timber framing, react badly if they get too hot. They expand and contract too much for the building system to cope with, ultimately resulting in surface cracks.

Systems applied over Harditex, Hardibak and Monotek have a minimum reflectance requirement of 40% while EIFS systems (using expanded polystyrene) from Rockcote and Plaster Systems cope better with heat and movement and have a limit of 25%.

This includes colours tinted from white, pastel and light tone bases but excludes colours from mid tone or deeper. All of our charts reference the light reflectance of each colour or see the online colour library at www.resene.co.nz/swatches/index.htm.

Lime burning/leaching

Lime burn results in colour loss and the overall deterioration of the paint film on fresh masonry. Fresh masonry is likely to contain lime minerals, which are highly alkaline. Carbon dioxide in the air slowly neutralises lime. Unless the lime has a chance to neutralise, its alkalinity will actually 'burn' the paint off the surface.



This results in loss of adhesion and/or it may 'burn' through the binder (resin) of ordinary latex paints, chemically altering certain pigments in the finished colour and weakening the film's integrity. In effect the paint will either flake off or be severely discoloured and this is most obvious with darker colours. The photo shows unsightly lime leaching through the painted plaster on this chimney.

Time and moisture are the two necessary components needed to bring down the alkali levels in new concrete/plaster. The Portland Cement Institute and the Gypsum Plaster Association recommend that masonry products, especially stucco, cure for at least 28 days prior to painting. If this is not possible, the painter should apply Resene Limelock followed by a high quality waterborne exterior paint. It is important to understand that this is a surface condition, not a paint problem.

Painting over stone-chip panels

Stone-chip panels have been a very popular finish - particularly for spandrel panels on older commercial buildings.

Stones or aggregate is laid in the bottom of a mould and concrete is poured in over the top – once the formwork is removed the stones are cleaned to remove any concrete residue leaving a stone chip panel.



When it comes to painting these panels the following system(s) have proven very successful:

1. Apply Resene Sureseal to the surface. This performs two functions, firstly it prevents any windblown salt from leaching through and secondly it helps bind any friable or weak areas on the panel, particularly where the stones are attached to the concrete, which over time becomes weakened by our 'slightly' acid rain. The Resene Sureseal flows into the resulting cracks and voids and binds the surface back together as it dries.
2. Apply Resene X-200, usually in two coats. This will help fill any small cracks. With age the stones may loosen and fall out – Resene X-200 helps prevent this.
3. An alternative to Resene X-200 is to use Resene Thixalon 5, which should be used if the stones have sharp, pointy edges. Resene X-200 will tend to pull away from these edges making coverage difficult, while Resene Thixalon 5 will cover easily.

Resene Thixalon has a higher film build and will help prevent carbon dioxide ingress, which contributes to concrete cancer and spalling – a problem that often occurs with older panels.

4. A glaze coat, usually Resene Multishield+, will help maintain the look and appearance of the system.

Resene Lumbersider or Resene Sonyx 101?

When it comes to painting, especially repainting, cementitious surfaces both Resene Lumbersider and Resene Sonyx 101 will perform well. However the choice between which of the two to use will necessitate an element of trade-off.

Resene Lumbersider is low sheen, half that of Resene Sonyx 101, and will disguise imperfect and rough surfaces better than Resene Sonyx 101. However Resene Sonyx 101 is made from a tougher resin and so will be more durable and easily cleaned.

Use Resene Lumbersider when repainting Harditex or Monotek where the joints are more obvious, rough plaster or blockwork and use Resene Sonyx 101 for good, smooth concrete.

Resene Zylone 20?

For many years, Resene Zylone 20 has been successfully used on the exteriors of plastered and concrete buildings. It is very durable and retains its colour well. It has been used to replicate older style limewashes and other traditional finishes mainly in the Canterbury area.

While Resene AquaShield is generally used to achieve a flat 'aged' or classic look, Resene Zylone 20 is still a good option if strong colours, such as terracottas or reds, are desired. Alternatively, Resene Multishield+ flat applied over Resene Lumbersider or Resene X-200 will give a similar finish.

Rust stains on concrete

Whenever concrete is in close proximity to steelwork, such as nuts and bolts, hand railings etc, it is likely that any rust forming will transfer to the concrete surface resulting in unsightly rust stains.

Rust staining may also indicate potentially serious spalling problems occurring within concrete. This is caused by water reaching the embedded steel reinforcing, which causes rust to form. Rusted steel actually expands in volume and the pressure is sufficient to crack and dislodge the adjacent concrete (called 'spalling').



Providing the source of rust staining can be treated, seal the stained area with Resene Sureseal before overcoating with the selected topcoat system.

If you wish to retain the natural finish of the concrete or plaster use oxalic acid, such as CLR sold at hardware stores, to remove the stain but be aware that care needs to be taken when using any acid. The two photos show unsightly rust staining.



Salt staining

Many of us live close enough to the sea for windblown salt (sodium chloride) to accumulate on surfaces to be painted or repainted. This is not confined to concrete alone, but all exterior surfaces, such as weatherboards and galvanised iron. Salt is water soluble and therefore will stain through waterborne coatings, leaving a whitish stain on the surface and discolouring the paint.

Salt is easily washed off smooth surfaces with freshwater but much more difficult if there is significant surface cracking or if it has a rough texture.

Resene recommend using Resene Sureseal on old cementitious surfaces to hold back and prevent any salt stains, as well as help bind and reinforce poorly bound cementitious surfaces, including bricks and brickwork.

Waterblasting

Waterblasting is an ideal preparation for most old unpainted cementitious surfaces, although usually it must be used in combination with Resene Moss & Mould Killer. However it does have limitations and some restrictions.

- i) Avoid using to remove salts from old textured surfaces. Salt needs to be rinsed and washed from the surface. High pressure waterblasting may actually have the opposite effect of forcing salts into the surface rather than off it.

- ii) Avoid using if the surface is old and porous, such as old limewashes and/or masonry buildings, unless you want, or need, to totally strip the coating.
- iii) If the paint is in good condition simply wash down using Resene Paint Prep and Housewash. This will be more effective at removing chalkiness and other contaminants than waterblasting.

If the surface is sound, has been treated for moss and mould and you need to remove or strip paint or other coatings, use waterblasting at high pressures. Most home use waterblasters do not operate at very high pressure usually around 1200 psi (800 kpa) and are generally fine for most situations. At this pressure they are really pressure washers as opposed to blasters.

In addition there are a number of housewashing companies who will prepare a home for repainting or for maintenance.

What's the big deal about Mediterranean finishes?

Resene was one of the earliest producers of a Mediterranean finish in New Zealand, although we didn't know it at the time. The product was Stipplecote and even today companies offer similar cement-based paint for plaster and concrete.

Essentially to achieve a Mediterranean finish the paint or coating needs to be flat in terms of gloss level and ideally with a hint of texture, often achieved with the brush itself.

Some designers also talk about the need for the surface to be chalky and slightly distressed. This comes with age to all paints. Resene recommends Resene AquaShield to achieve a long lasting Mediterranean dead flat mineral effect finish.

The alternatives are limewashes and what are sometimes called 'mineral' paints. These are essentially modified acrylics, usually quite cheap to make. These coatings tend to deteriorate quickly, grow mould, hold dirt and road grime and generally look unattractive. Interestingly it is rare for customers to repaint in a limewash or low technology mineral paint after using it the first time.



In the case of limewashes they leach lime, an extremely alkaline material that will etch glass and attack aluminium windows. Resene AquaShield is recommended for these projects as it will give a similar looking finish without the unwanted lime leaching. The accompanying photo shows the deterioration of a limewashed building – it is unsightly and particularly obvious with stronger colours.

Remember, if you need advice or information for your decorating project don't hesitate to contact Resene for further assistance.

Resene

the paint the professionals use

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