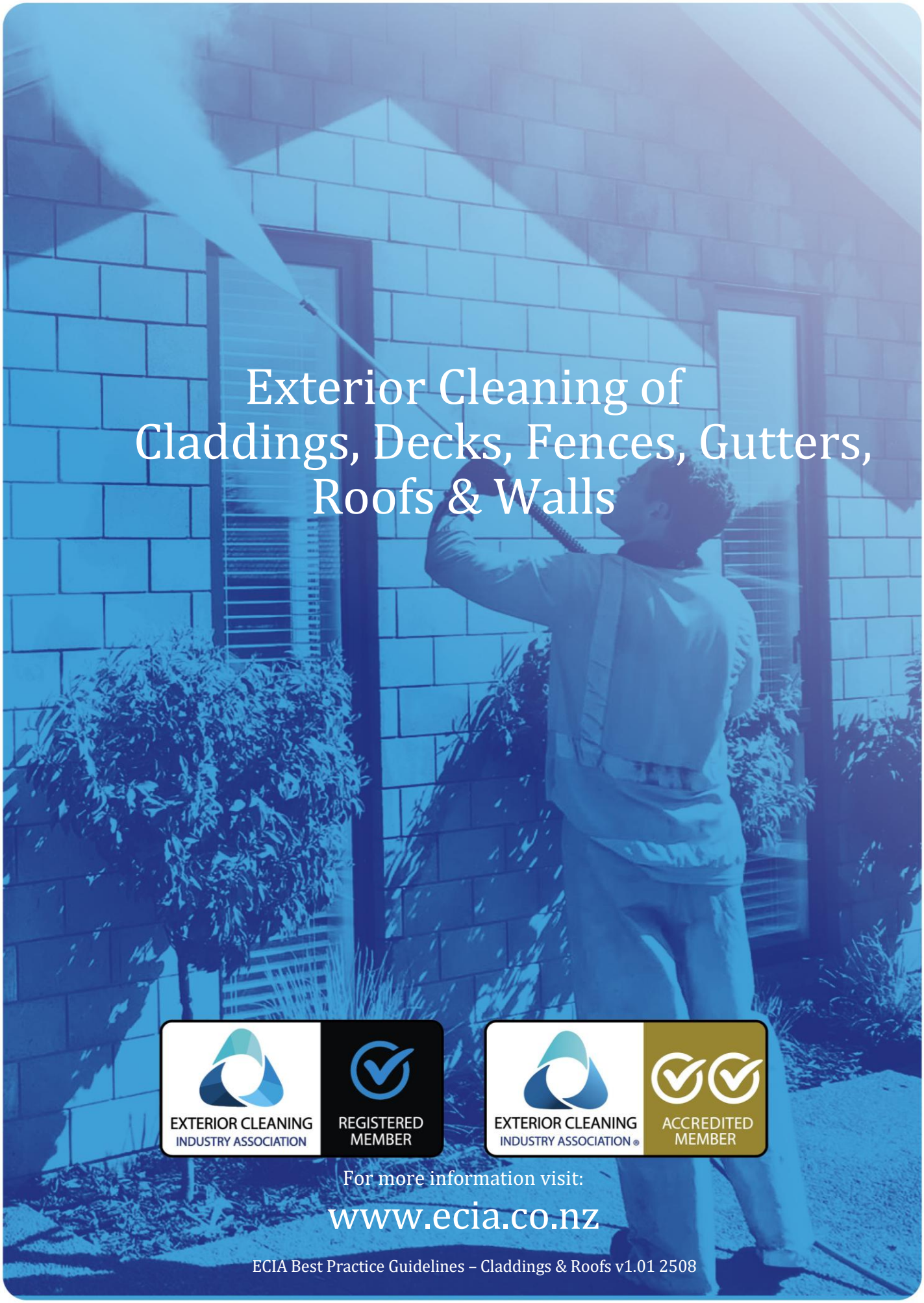

Exterior Cleaning of Claddings, Decks, Fences, Gutters, Roofs & Walls

EXTERIOR CLEANING INDUSTRY ASSOCIATION REGISTERED MEMBER

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For more information visit:

www.ecia.co.nz

Best Practice Guidelines.

Exterior Cleaning of Claddings, Decks, Fences, Gutters, Roofs, and Walls.

Most painted and stained exterior surfaces, including timber, cement render, concrete, brick, masonry, metal, and plastic require a periodic clean to maintain their functionality and the conditions of their warranty.

Many painted cladding products require an annual clean to maintain the conditions of their warranty.

Other coated products require a periodic clean to remove the build-up of organic material and debris.

Most exterior products also need to be cleaned before painting or staining, to remove any material that could prevent the coating from adhering to the substrate.

From time to time, it is also necessary to clean uncoated claddings, decks, fences, roofs, and walls to maintain a safe surface, protect them from being compromised by organic growth and to keep them looking good. This work can also be a Property Maintenance or Product Provider Warranty requirement.

Whatever the driver, the frequency of the cleaning will depend upon a range of factors including any periodic maintenance requirements, the age and composition of the product, how it is being used and local weather conditions.

The intention of regular cleaning is to remove the damaging build-up of organic material, atmospheric contaminants, and dirt from the surface of the substrate. This work generally involves the use of a cleaning solution, which reduces water usage and helps to remove the build-up of grime, stains, and organic material from the surface, without causing any damage to the substrate.

These cleaning instructions should be read in conjunction with the ECIA Code of Practice (CoP), the operational guidelines of the Cleaning Agent and Equipment suppliers **and the maintenance instructions of the Substrate or Coating Manufacturer and any other relevant Industry Guidelines** or Codes of Practice.

If the work is being undertaken by a professional Cleaning Company, or Other Trade, these instructions should also be read in conjunction with their Safe Operating Procedures and any Apprenticeship or NZQA training recommendations.

A current version of the CoP can be downloaded from the ECIA website (www.ecia.co.nz), as can the following summary cleaning procedures.

- Exterior Cleaning of Claddings, Decks, Fences, Gutters, Roofs, and Walls.
- Exterior Cleaning of Driveways, Hardstands, and Playing Surfaces.
- Exterior Cleaning of Solar Panels, Windows, and Glass Doors.
- Exterior Cleaning of Membrane Decks & Roofs and Asphalt Shingles.

The Associate Members listed in this document, and their branded products or services, are an example of those used by our Members to support exterior cleaning work. They have been included to educate users as to their supply and "like for like" options. Please refer to the supplier's instructions as to how these products should be used prior to use.

1 Preparation:

Before undertaking any exterior cleaning work, **it is highly important to scope out the work to ensure that it can be undertaken safely and that it will not damage the property or harm the environment**.

It is likely that the original paint on properties built before the 1990's will be lead based. Due to its age, this paint is likely to be in a poor condition, and it should only be cleaned or stripped by a person with knowledge in this area, as the ingestion of paint flakes or dust can be harmful.

In addition, properties built before 2000 may have used asbestos containing material as a fence or in the cladding, soffits, and roof. The pressure washing of Asbestos products is illegal and the cleaning of these products should only be undertaken by a person with specialised training and knowledge, as the inhalation of asbestos fibers can be harmful and the working area contaminated.

It is also highly important to ensure that roofs and gutters are functionally sound (and any damaged areas repaired prior to cleaning), to avoid the possibility of water ingress and damage to the property.

In all circumstances washing discharge needs to be managed so that it does not contaminate the stormwater or a waterway or harm pets and animals.

Good preparation and the use of appropriate equipment and cleaning solutions can also greatly reduce the amount of water and time needed to clean an area.

If available and appropriate, consider using sources of non-potable water for exterior cleaning work.

Where possible a broom or blower should be used to clear away any loose debris from the exterior surface prior to wet cleaning.

2 Cleaning Solution Options:

The use of appropriate cleaning solutions and equipment will prevent pressure damage to the coating and substrate, reduce water usage, save time, prevent immediate regrowth, and produce a better-quality result.

The recommended cleaning process generally involves using diluted Sodium Hypochlorite, Hydrogen Peroxide, Surfactants, or a Hypochlorite Surfactant mixture **to wash the surface at the time of the work** or diluted Benzalkonium Chloride to **weather clean a surface over time, and to provide a temporary barrier against future regrowth.**

The choice of cleaning solution will be determined by the products Warranty maintenance instructions, the supplier's usage instructions, the surface that you are cleaning, the equipment that you are using, the type of organic material, grime, dirt, or stain that you want to remove, environmental implications, and water usage considerations.

Check the supplier's instructions prior to mixing Sodium Hypochlorite and Surfactant products and **do not mix** Hypochlorite with any incompatible Surfactant (eg: one that contains acids or peroxides in any amounts and some dishwashing liquids).

Before using any cleaning solution or pressure equipment, you should undertake a test spot, in an inconspicuous area, to ensure that there is no damage to the paint, coating, or substrate. This is particularly important for wood-stained products such as cedar. In a small number of situations, you will only be able to use a pH neutral cleaner, in conjunction with water and a soft brush, to clean a coated, painted, or pigmented substrate.

When applying exterior cleaning solutions, it is highly important that they are not allowed to dry when applied to adjoining glass products (doors, windows, skylights etc), as they will cloud the glass. If there is any overspray on the glass it should be cleaned off with clean water, squeegee & blade, pure water systems, or a glass cleaner.

3 Cleaning Solution Usage Requirements:

Regardless of which cleaning solution you choose you **must always read the label before using the solution and follow the instructions regarding correct dilutions and application methods.**

Please remember that the correct dilution level is in relation to the direct application of the cleaning solution to the substrate and some pressure equipment, such as venturi systems, will dilute the cleaning solution as part of the application process. To be clear, a venturi system will further dilute a cleaning solution.

In addition, you should never mix a cleaning solution with an unknown compound or mixture as the reaction can cause serious injuries.

If any further information is required before use, please contact the supplier for the products Material Safety Data Sheet (MSDS). These sheets provide detailed information regarding the safe use of the product, including what to do if there is an incident. Businesses and Trades people undertaking exterior cleaning work should always have a copy of the MSDS sheets on hand.

4 Sodium Hypochlorite, Hydrogen Peroxide and Surfactant Cleaning Process:

These products are generally applied to the entire surface area using a bucket and a soft brush, hand sprayers, hose end sprayers or pressure equipment.

The use of these products generally involves multiple passes and a generous application of the cleaning solution.

Please refer to the supplier's instructions for how much the concentrate needs to be diluted prior to application, and how it should be safely used and best applied.

If the organic growth, or build-up of grime, is heavy the area may have to be manually scrubbed after application of the cleaning solution.

Sodium Hypochlorite, Hydrogen Peroxide and Surfactant based products need to be **thoroughly washed off**, with clean water, after application. This should be done **before the surface can dry**. This can be achieved by undertaking application and rinsing work in smaller, successive sections on a property and by working away from the sun.

To avoid unnecessary water ingress, special care is needed when using a hose or pressure equipment around doors, joinery, and windows.

If a surface is hot to touch it may need to be cooled down with a fine spray of water prior to applying the cleaning solution. Exterior washing work should not be undertaken if there is a risk of wind drift affecting plants, the environment, domestic pets, other properties, clothes lines, and bodies of water (such as ponds and creeks).

It is highly recommended that vegetation close to the work is doused with clean water before and after the work.

Under no circumstances should Asbestos cladding, fences, or roofs be scrubbed or sprayed with a high-pressure hose or pressure equipment. As detailed in the WorkSafe Code of Practice, these products can be treatment cleaned with Benzalkonium Chloride, at a hose pressure of less than 50 PSI, if there is no existing damage to the area being cleaned. **If unsure, it is best not to clean at all.**

When choosing between cleaning solutions it is important to be aware of how the product should be used, its safety and environmental management requirements, its concentration levels and what to avoid.

- **Sodium Hypochlorite** – the concentration of most commercial products is 12.5 to 15%, as this is the most stable concentration. However, some residential products do contain lower concentrations.
- **Hydrogen Peroxide** – You can get products with 35%, 50% and 60% concentrations. Any concentration is fine if you dilute correctly, according to the strength of the concentration.
- **Surfactants** – There are a wide range of Surfactants that can be used for exterior cleaning and some Surfactants can be mixed with other products to assist in the cleaning process.

  When mixing a Surfactant with Sodium Hypochlorite it is vital to ensure the Surfactant does not contain any acidic or other incompatible components, as these can react with the Sodium Hypochlorite and cause unwanted and potentially harmful reactions.

  You should also avoid mixing Surfactants with Sodium Hydroxide in excessive amounts, as these solutions can damage painted substrates. Sodium Hydroxide is also known as Caustic Soda.

Examples of Cleaning Agent Suppliers and proprietary branded Sodium Hypochlorite products include:

- Bio-Sheild, Envirochem Splash n Dash, Dulux Prep Wash.

Examples of Cleaning Agent Suppliers and proprietary branded Surfactants include:

- Bio-Sheild, Envirochem House Wash, Dulux House Wash.

5 Benzalkonium Chloride Treatment Cleaning Process:

These products are generally applied to the entire surface area using manual hand sprayers, hose end sprayers or pressure equipment. The use of these products generally involves multiple passes and a generous application of the cleaning solution.

Please refer to the supplier's instructions for how much the concentrate needs to be diluted prior to application and how it should be safely used and best applied.

If the organic growth is heavy the area may have to be repeatedly re-sprayed, 6 to 12 months after application, until the area is fully weather cleaned.

These products are best applied at either end of the day, or when the weather is overcast, to avoid flashing or the premature evaporation of the solution. This can also be achieved through the high-volume application of the product. Once applied, organic material should remain wet for around 10 minutes to allow the cleaning solution to take effect.

Benzalkonium Chloride **should not be washed off after application** as the surface will be weather cleaned over a period of 6 to 12 months, and the cleaning solution will provide a temporary barrier against regrowth.

In addition, these products should not be applied if a moderate rain event is expected or if there is a risk of wind drift affecting plants, the environment, domestic pets, other properties, clothes lines, and bodies of water, such as ponds and creeks.

Depending on the supplier's instructions, the application times before rain arrives is generally **a minimum of 1 to 2 hours.**

It is highly recommended that vegetation close to the work is doused with clean water before and after the work.

Benzalkonium Chloride products are often used to clean roofs and the discharge from all downpipes, that enter the stormwater, will have to be managed (using bungs, disconnection, filter products, proprietary diverters etc), to avoid contamination of the stormwater. **In addition, if the roof is being used to collect water, the downpipes should remain disconnected for the period specified by the Cleaning Agent supplier, to avoid contamination of the water tank.**

Asbestos cladding, fences and roofs can be treatment cleaned with Benzalkonium Chloride products if there is no existing damage to the area being cleaned. **However, under no circumstances should these products be scrubbed** and, unless the work is being undertaken by a person with experience in the cleaning of these products, they **should only be treatment cleaned with manual hand sprayers or low-pressure hose end sprayers at a pressure of less than 50 PSI**, as detailed in the WorkSafe Code of Practice for the management of these products. **If unsure, it is best not to clean at all.**

Please note that Benzalkonium Chloride has many names for the same active ingredients which include but are not limited to the following – alkyl dimethyl benzyl ammonium chlorides, alkyl dimethyl (phenylmethyl) quaternary ammonium chlorides, ammonium alkyl dimethyl (phenylmethyl) chlorides, or ammonium alkyl dimethyl benzyl chlorides (which are a class of quaternary ammonium compounds or Quats).

Examples of Cleaning Agent Suppliers and proprietary branded Benzalkonium Chloride products include:

- Bio-Sheild Outdoor Cleaner, Envirochem Moss and Mould Killer, Envirochem Spray and Forget, RollingStone™ Moss and Mould Control.

6 Other Cleaning Products:

Before using other cleaning products, first check the cleaning maintenance instructions of the Substrate or Coating Manufacturer.

Caustic-based preparations, which are highly alkaline, should not be used, as they can damage and remove the paint. Also take similar precautions when using acidic-based products, as they can also damage the paint.

7 Pressure Equipment Considerations:

The use of water pressure alone to clean an exterior surface can result in damage to the substrate or coating.

It is recommended that a cleaning solution is used with Pressure Equipment as together they will reduce water usage, save time, and produce a better-quality result.

If using pressure equipment, it is important that you understand and follow all the operating instructions, precautions, personal protective requirements, and safety rules associated with the equipment.

- Pressure Equipment can be used to **Pressure Wash**, **Soft Wash** or **Treatment Clean** surfaces.
    - **Pressure Washing** is the application of high quantities of water, at a pressure of up to 3,000 PSI (at the nozzle), to clean surfaces at the time of work.
    - **Soft Washing** is the application of cleaning solutions and lower quantities of large droplet water, at a pressure of up to 600 PSI (at the nozzle), to clean surfaces at the time of work.
    - **Treatment Cleaning** solutions are applied using Soft Washing techniques, to remove organic material over time.
- To be clear, Pressure Washing primarily relies on water pressure to clean surfaces at the time of the work, whilst Soft Washing primarily relies on cleaning solutions to achieve the same outcome. Treatment Cleaning is dependent upon the cleaning solution and weather to remove organic material over time.
- **It is illegal to Pressure Wash or Soft Wash Asbestos products**. Asbestos can be found in Super6 type profiles and some older Cement Fibre Boards, Metal Tile Roofs, and Shingles. WorkSafe advises that these products can be found in properties built before 2000 and **should assumed to be Asbestos until testing proves otherwise.**
- Asbestos products can be Treatment Cleaned by people with experience in the cleaning of these products.
- **The ECIA does not generally recommend the Pressure Washing of roofs as it can damage the substrate and lead to water ingress.**
- **The ECIA does not generally recommend the Pressure Washing of soft wood surfaces (such as Pine & Cedar) as it can damage the substrate. Care should also be taken with the use of cleaning solutions (such as Sodium Hypochlorite) for this work.**
- Cleaning solutions may need to be mixed, prior to being used with Pressure Equipment.
- Before using Pressure Equipment, you should undertake a test spot, in an inconspicuous area, to ensure that there is no damage to the coating or substrate
- Commercially rated machines (that can produce a flow of 10L pm or more) should be used to clean larger areas as it will reduce water usage, and the time needed to complete the work.
- It is important to use a nozzle type compatible with the Pressure Equipment and the work being undertaken. There are a wide range of specialist nozzles used by exterior cleaners including Fan Head and Rotary Head Nozzles.
    - Fan head nozzles typically come in a range of colour coded spray angles (0˚, 15˚, 25˚ & 40˚). Examples of how these nozzles can be used are listed below.
        - Low pressure nozzles can be used to apply and rinse cleaning solutions. These nozzles are also known as soap nozzles.
        - 40˚degree nozzles can be used to rinse cleaning solutions.
        - 25˚degree nozzles can be used for the general cleaning of dirt and mud from surfaces. Care should be taken when using this nozzle that it does not damage the paint or substrate.

        - 15˚degree nozzles can be used for to remove paint. Care should be taken when using this nozzle that it does not damage the paint or substrate.
        - 0˚degree nozzles can be used for removing caked on mud. Extreme care should be taken when using this nozzle that it does not damage the paint or substrate.
    - Rotary head nozzles are typically used for the heavy-duty cleaning of concrete driveways and masonry. These nozzles are also known as Turbo nozzles. Extreme care should be taken when using these nozzles as they can damage painted surfaces and substrates.
- Specialist accessories, including telescopic lances, can be used with most pressure equipment to assist in the cleaning of claddings, gutters, roofs, and walls.
- Gutters should only be hand cleaned, and hose flushed unless the pressure equipment is being used by an experienced person. This is to avoid unnecessary water ingress and cleanup.
- Special care is needed when cleaning around cladding penetrations (doors, joinery, windows, etc) to avoid unnecessary water ingress.
- When applying exterior cleaning solutions, it is highly important that they are not allowed to dry when applied to glass products (doors, windows etc), as they will cloud the glass. If there is any over spray on the glass it should be cleaned off with clean water, mop & blade, pure water systems, or a glass cleaner
- Glass doors, insect screens and windows, on single storey buildings, should only be hand cleaned, unless the pressure equipment is being used by an experienced person. This is to avoid unnecessary water ingress.
- It is recommended that windows on multi-storey buildings are cleaned by professional exterior cleaners using specialist equipment.
- **Balconies, claddings, gutters, and roofs should be in good repair (and any damaged areas repaired) prior to cleaning, to avoid the possibility of water ingress. If unsure these areas should not be pressure washed, soft washed or treatment cleaned.**
- It is generally not advised to use hot water or steam Pressure Equipment to clean coated exterior products as they can damage the paint.
    - These specialist systems are generally used for sanitation and to clean heavily marked hardstands and monuments, as opposed to washing of cladding and roofing products.
- Pressure Equipment options include Pressure Washers, Drones and Mechanical & Robot Brush's.

Examples of Pressure Equipment Suppliers include:

- Pressure Solutions.

8 Discharge Management:

The Resource Management Act 1991 (RMA) is designed to protect our environment, and all exterior cleaning work must comply with it. The RMA is enforced by local Councils and polluters can be issued with abatement notices or prosecuted.

All cleaning agents can have both a direct and prolonged impact on the surrounding environment and all washing discharge should fall or be diverted onto unsealed ground (such as grass) using bunding, sandbags and proprietary filter systems.

Under no circumstances should washing discharge be allowed to enter the stormwater or a waterway. This is illegal and can be managed using drain matts, bunding, sandbags, proprietary filter systems and the best practice processes outlined in the ECIA CoP.

The same processes and products should be used to contain, control, and manage a spill of the cleaning agent.

When cleaning roofs, or the cladding on multi-level properties where the discharge falls on to a lower roof, the downpipes will have to be disconnected (unless they have a proprietary diverter), to avoid contamination of the stormwater. **In addition, if the roof is being used to collect water, the downpipes should remain disconnected for the period specified by the Cleaning Agent supplier, to avoid contamination of the water tank.**

Any physical waste accompanying the washing discharge, such as flakes of paint and dirt, should be collected and disposed of in a general waste bin.

Local Council regulations should be followed for the disposal of the paint flakes and washing discharge from old lead painted properties.

Examples of standard Discharge Management practices that you would expect to see when a professional company provides an exterior cleaning service include;

- Bunding to contain discharge waste for recovery and disposal.
- Bunding to divert discharge waste onto unsealed ground.
- Downpipe bungs and wash water recovery systems to stop contamination of the stormwater.
- Downpipe diverters to discharge wash water onto unsealed ground.
- Disconnected downpipes to divert wash water onto unsealed ground.
- Drain mats to stop discharge from entering the stormwater. These will often be used in conjunction with bunding, filter products and recovery systems.
- Filtration socks and bags to prevent contaminants entering the stormwater.
- Support team members to support work on multilevel properties and in high traffic areas.
- Water recovery systems, such as pumps and watervacs, to capture the wash water for discharge onto unsealed ground, or offsite management as appropriate.

Examples of Discharge Management Suppliers and proprietary branded products include:

- In\Out Debris Diverter, Garmour, GutterWitch Flexi Diverter.

9 Health & Safety:

You should always use safety glasses, gloves, overalls, and gumboots when diluting, mixing, and applying cleaning agents. It may also be appropriate to use a respirator in some instances. You should also wear earmuffs when using some pressure cleaners.

To reach some of the higher parts of some properties, such as fascia's, and soffits, you should consider using long-handled applicators, platform ladders, secured step-ladders and pressure equipment with appropriate long range nozzles.

When using ladders as a workstation it is critical that they have first been checked over for damage, are stable, secured and that you maintain three points of contact during use.

For sloping and multi-level properties, and when working on roofs, telescopic lances, harnesses, secured ladders, mobile platforms, elevated work platforms, edge protection and scaffolding may also be required.

Professional fall protection equipment such as harnesses, edge protection, mobile platforms, elevated work platforms and scaffolding should only be used by people with the appropriate experience, certificates, or qualifications.

The WorkSafe Roof Maintenance Guidelines note that fall restraint harness systems are required for short duration work, such as exterior cleaning and repair work, that is undertaken in minutes instead of hours.

The WorkSafe Guidelines also note that long duration work, which lasts hours or takes place over several days, including some cleaning and painting work requires the use of elevated work platforms, edge protection or scaffolding, depending upon the nature of the work and property.

All work undertaken by professional trades must conform to the Health & Safety at Work Act 2015 and the Good Practice Guidelines provided by WorkSafe New Zealand. In addition, a competent cleaning company will have in place a Health & Safety Plan to support their work. Some jobs may also require Safe Operating Procedure (SOP), Job Safety Analysis (JSA), Environmental Management Plan (EMP) and Site-Specific Safety Plan (SSSP) documentation to support the work.

You should also consider using professional exterior cleaners to clean areas requiring the use of fall protection and other specialist equipment.

Examples of Health & Safety practices that you would expect to see when a professional company provides an exterior cleaning service include;

- Elevated work platforms to clean claddings and roofs on multilevel properties.
- Fall restraint harnesses to clean roofs and gutters.
- Mobile platforms to clean claddings and gutters on multilevel properties and sloping sections.
- Permanent and Temporary anchor points for harnesses on commercial and residential properties.
- Permanent ladder brackets to wet clean gutters.
- Personal Protective Equipment, including hearing protection, safety glasses, gloves, hardhats, overalls, and gumboots.
- Temporary barricades and signage to control access to work areas.
- Temporary ladders brackets and footings to access roofs.
- Spotters and support team members to support work on multilevel properties and in high traffic areas.
- Edge Protection or Scaffolding when cleaning a roof prior to repair or repainting.

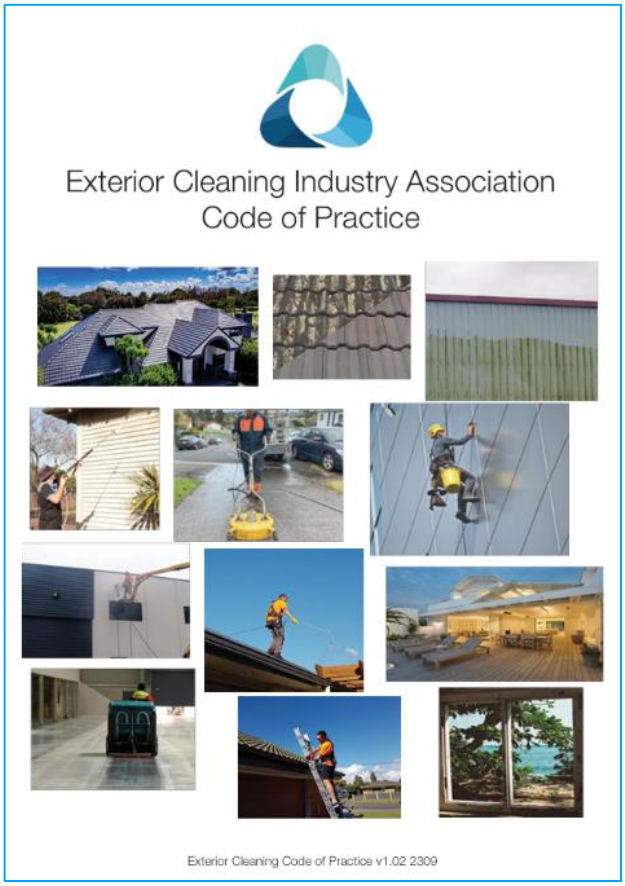
Examples of Health & Safety Suppliers and proprietary branded products include:

- Garmour, LadderSecure, Spice HR.

10 Meaning of Industry Terms & Words

- **Asbestos** containing cladding and roofing products have the potential to cause significant harm and competent persons or licensed operators must be consulted prior to the commencement of work to ensure that correct procedures are followed. Under **no circumstances** should water pressures of over 50 PSI be applied to Asbestos cladding and roofing products.
- **Benzalkonium chloride** is a disinfectant-based cleaning agent that provides temporary protection against regrowth.
- **Code of Practice.** The ECIA CoP outlines acceptable and recommended trade practices that the consumer can expect to see when a competent company provides an exterior cleaning service in the maintenance of a property or as a component part of another service, such as preparation of a property prior to repair work or painting.

- **Downpipe Diverters** are accessories that can be fitted into downpipes to divert debris from stormwater and water tanks systems. Some diverters can also be used to divert roof and gutter cleaning discharge.
- **Down streaming** is the use of a venturi injector to introduce cleaning solutions, into your water stream, after the pump output.
- **Hydrogen Peroxide** is a bleaching and disinfecting agent that tends to be used for specialist applications.
- **Manual Washing** work involves using a hand sprayer, hose end sprayer, a soft brush and hose, or a combination of these, to clean exterior surfaces.
- **Pressure Washing** is the equipment application of high quantities of water, at a pressure of up to 3,000 PSI, to clean surfaces at the time of work.
- **Quats** are a common ingredient in disinfectants and sanitizers.
- **Sodium Hypochlorite's** are bleach-based cleaning agents. They are cost effective, work very fast and are a commonly available cleaning agent.
- **Soft Washing** is the equipment application of lower quantities of large droplet water, at a pressure of up to 600 PSI, to clean surfaces at the time of work.
- **Surfactant** based cleaning agents included soaps and detergents.
- **Treatment cleaning** solutions are applied using Soft Washing techniques, to remove organic material over time.
- **Weather Cleaning** treatment programs involving applying a cleaning solution to kill the organic material, which wind and rain will typically remove over a period of 10 to 12 months.



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