Exterior Cleaning Industry Association Code of Practice












Introduction & Overview

The Exterior Cleaning Industry Association (ECIA) was formed in direct response to the 2020 Auckland drought and associated water restrictions.

The ECIA's Members undertake a wide range of work including the cleaning of driveways, gutters, pathways, playing surfaces, roofs, windows, wall claddings and vehicles and the water restrictions impacted directly on the operations of its Members.

The ECIA developed a "Water Efficient Operator" (WEO) training program in 2020 to establish a baseline set of good water management practices. The WEO program was supported by WaterCare and led to the 2022 development of ECIA Code of Practice (CoP) which covers the following key elements;

1. New & Existing Property Maintenance requirements
2. Water Management standards
3. Water discharge & Environmental standards
4. Health & Safety standards
5. Work Completion Standards
6. Best Practice Retrofit Recommendations

The CoP has been developed in consultation with Auckland Council, Tauranga City Council, WaterCare, Water NZ, the Building Research Association of New Zealand (BRANZ), the NZ Metal Roofing Manufacturers Inc. (MRM), the Roofing Association of New Zealand (RANZ), and the Ministry of Education (MOE). The purpose of the CoP is to present 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. In short, the CoP sets out "What needs to be done" and the individual users determine "How it will be done". The provision of other services is covered in other industry documents such as the RANZ Roof Coatings CoP.

The periodic cleaning and maintenance of a property will maintain its appearance and structural integrity for an extended period. However older properties that have not been regularly maintained may need to be assessed and could require remedial or replacement work to be undertaken, prior to the commencement of any cleaning or maintenance work.

The onus is on the exterior cleaning company to follow manufacturer and supplier specifications and to advise the property owner in writing as to the scope of the maintenance or cleaning work that they are undertaking.

Version Document

Please visit the ECIA website (www.ecia.co.nz) for the latest copy of the Exterior Cleaning CoP.

Disclaimer

The information contained in the Exterior Cleaning CoP is the most current knowledge at time of publication. The ECIA makes no warranties or representations of any kind about the accuracy, currency or completeness of the information contained herein. Compliance with this CoP does not guarantee immunity from breach of any statutory requirements. It has been compiled and written from proven performance and cites a standard of acceptable trade practice that has been composed in consultation with Regulatory Bodies, other Trade Associations, Manufacturers and ECIA Members.

ECIA Supporters

ECIA Supporters are Organisations and Businesses who support the water and discharge management objectives of the ECIA.

Watercare

Tauranga City

Exterior Cleaning Association
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1. Property Maintenance Requirements

If residential and commercial properties are not regularly cleaned and properly maintained, they will lose their aesthetic appeal and begin to deteriorate as the component parts are progressively compromised by environmental conditions and organic growth, which over time can result in property damage, costly repairs and an unsafe environment.

Unfortunately, NIWA's climate change scenarios for New Zealand forecast an increase in extreme weather events and more intense rainfall, which will place increased pressure on the functional performance of properties.

The Water New Zealand graphic outlines the specialist skills required to support the stormwater sector and the value that the ECIA and its Members provide in the complaint maintenance of properties and a healthy stormwater system.

1.i Existing Property – Recommended Maintenance Requirements

BRANZ was formed in 1970 and is an independent organization that undertakes research to support system wide improvements across the New Zealand building sector.

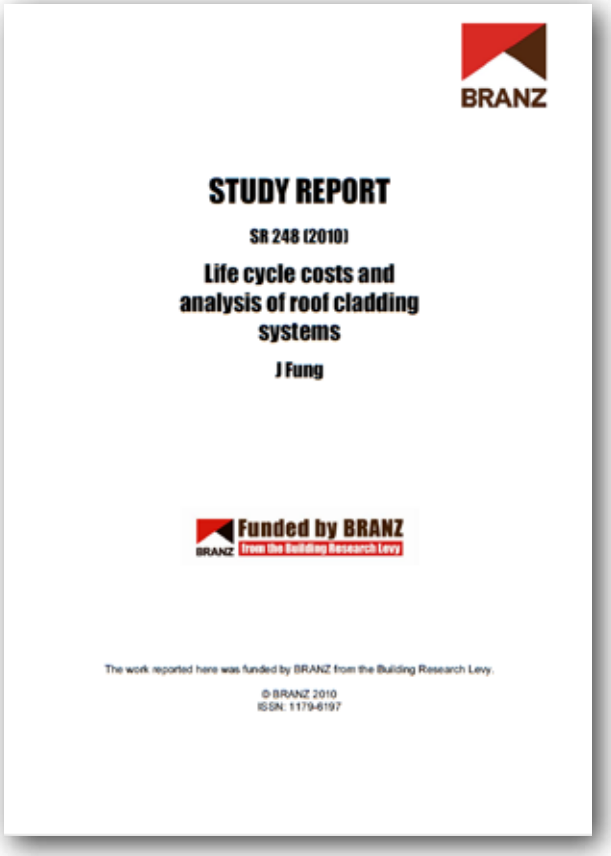
BRANZ has noted in several of its reports that periodic maintenance preserves the functional life of a property, is helpful in the early detection of unexpected material failures and protects it against premature failure.

The BRANZ Life Cycle Costs of Claddings Report (1997) includes the following maintenance and life span cost options for roofing and cladding products;

Roof & Cladding Maintenance Options - Moderate Environment		
Building Material - Roofing	Options	Type of Work, Maintenance Interval & Life Span
Concrete Tiles	Opt 1	Repair pointing / Waterblast every 20 years / Replace at 60 years
	Opt 2	Repair pointing / Standard acrylic paint coats every 8 years / Replace at 75 years
	Opt 3	Repair pointing / High-build acrylic paint 3 coats every 15 years / Replace at 90 years
Pre-Painted Galvanised Steel	Opt 1	Repaint after 15 years, every 7 years thereafter / Blast clean at 40 years, continue repainting at 7 years. Replace at 50 years
	Opt 2	Blast clean and repaint after 15 years / Repaint at 10 year intervals using high build acrylic / Replace at 50 years
	Opt 3	Hose down every year / Do not repaint / Replace after 35 years
Metal Tiles, Factory Coated	Opt 1	Hose down regularly / Repaint after 15 years / Continue repainting at 7 year intervals / Replace at 50 years
	Opt 2	Hose down regularly / Repaint after 25 years / Replace & repair rusted tiles as necessary / Repaint every 7 years / Replace at 50 years
	Opt 3	Wash down yearly / Replace after 35 years
Building Material - Cladding		
Concrete Block Masonry	Opt 1	No painting / Repair pointing at 30 years / Replace at 50 years
	Opt 2	Standard acrylic paint 2 coats on installation / Repaint every 8 years / Replace at 80 years
	Opt 3	High-Build acrylic paint 3 coats on installation / Repaint every 15 years / Replace at 90 years
Radiata Wall Board	Opt 1	Standard acrylic paint 3 coats on installation, 2 coats repaint / Repaint every 8 years / Replace at 70 years
	Opt 2	Standard acrylic paint 3 coats on installation, 2 coats repaint / Repaint every 10 years & replace some boards / Replace at 50 years
uPVC Board	Opt 1	No maintenance / Replace at 30 years / Wash with soapy water & bleach every 1 to 2 years
	Opt 2	Standard acrylic paint 3 coats at 20 years / Replace at 40 years
	Opt 3	Standard acrylic paint 2 coats every 7 years / Replace at 55 years

The BRANZ Life Cycle Costs and Analysis of Roof Claddings Systems (2010) includes the following maintenance and life span options;

Roof Maintenance Options - Moderate Environment		
Building Material - Roofing	Options	Type of Work, Maintenance Interval & Life Span
Pre-Painted Steel	Opt 1	Repaint after 15 years, every 10 years thereafter / Replace at 50 years
Metal Tiles, Factory Coated	Opt 1	Repaint after 15 years, every 10 years thereafter / Replace at 50 years



The BRANZ feedback reflects the roof maintenance field experience of ECIA Members, which is listed below;

Roofing Products:

Concrete Tile – Modern machine manufactured concrete tiles (Monier, Humes & Rosscrete) can last up to 80 years if the roof is not in a harsh environment and has been properly installed, regularly maintained, periodically re-painted, kept free of moss & lichen and not subject to inappropriate foot traffic. However, if these roofs are poorly installed and not regularly maintained they can last for less than 40 years in a harsh environment.

The quality of older handmade concrete tiles is significantly more variable than machine manufactured concrete tiles and their higher porosity directly reduces their life expectancy – which can range from 40 to 60 years in most situations – subject to the listed performance and maintenance factors.

Clay Tile – Though they make a small percentage of the market, a clay tile is the only masonry roofing product that will consistently last for 80 years, if regularly maintained and kept free of moss & lichen.

Membrane Roofing – The life expectancy of a membrane roof is dependent upon a range of environment, roof design, installation and maintenance factors and is around 25 years.

Metal Tile / Steel Sheet – The life expectancy of a Metal Tile or Steel Sheet roof is between 30 to 60 years depending upon a range of environment, roof design, installation, foot traffic and maintenance factors.

If regularly cleaned and maintained most types of roofs are very robust and can maintain their street appeal and structural integrity for decades and negate the need for more costly interventions, which can be an outcome when maintenance is ignored or deferred.

The BRANZ House Condition Survey (2015) noted that **maintenance costs increase by about 18% for each year maintenance is deferred.**

The BRANZ Healthy Houses Report (2016) also noted that “Ten of the fourteen sample houses required **gutter maintenance**, ranging from simple clearing and cleaning through to a full gutter replacement. Effective guttering removes stormwater from the dwelling and channels it away to maintain dry conditions”

Wall Cladding Products & Decks:

Brick & Unpainted Masonry – Though brick & unpainted masonry products are very durable and only require the removal of moss and accumulated grime on a periodic basis it is good practice to clean these areas when undertaking other property maintenance work such as the cleaning of soffits.

Monolithic & Painted Masonry – Coated monolithic and painted masonry products should be inspected and cleaned annually and can last between 40 and 90 years if they are regularly maintained.

Painted Weatherboards – Weatherboard products should be cleaned annually and can last up to 70 years if they are regularly maintained.

Timber Decks – Decks should be cleaned annually and can last up to 40 years if they are regularly maintained.

The appropriate cleaning and maintenance regime for a property is dependent upon a range of factors including the property owner's aesthetic expectations, the environmental conditions, the building materials that have been used and the properties design and location.

MAINTENANCE SCHEDULE

Location	Part of building	Check for	Primary maintenance tasks (in order of frequency required, from most frequent to least frequent)	Frequency
Roof	Roof cladding/flashings	· corrosion · moss/lichen growth · dirt/salts · lifted roofing/flashings · loose/missing fixings · water ponding (flat roofs · faded paint · dented or damaged roofing · roof tearing at fixing points · gaps or cracks around roof penetrations · cracked, missing or dislodged roof tiles or shingles · roofing that ends short of a gutter · loss of stone chips on metal tile roofs.	inspect and wash	yearly
			repair faults found	as required
			repaint/recoat	8–15 years depending on roof finish
			reroof	as required
	Chimney/flues	· build up of soot · crumbling mortar (chimneys) · corrosion of flue/cowl/fixings · loose fixings	have chimney/flue swept	yearly
			repair faults found	as required
			replace corroded flues/consider removing unsound brick chimneys down to the roofline	as required
	Guttering/downpipes	· blocked gutters · broken or loose gutters or downpipes	inspect and clean gutters. Remove overhanging tree branches	yearly or more frequently if necessary
			repair	as required
	TV aerial/dish, PV panels, solar hot water panels	· loose fixings · corrosion · dirt/bird droppings/debris	inspect and repair. Wash down PV/hot water panels	yearly
			replace	as required
Walls	Wall cladding	· dirt/salts/staining · cracked/flaking/chalking paint · moss/lichen · corrosion of flashings · corroded/missing fixings · split/cupped/rotten weatherboards · claddings touching/going into the ground · blocked vents at the base of brick walls · missing or loose sealant · loose-fitting cover boards, scribers or plugs	inspect and wash walls	yearly, more frequently in geothermal/ seaspray areas
			repair faults found	as required
			repaint	8–10 years
			reclad	as required
	Doors/windows	· cracked/damaged putty · cracked/broken glass · cracked/flaking/chalking paint · corroded/raised/short flashings · corroded/stiff hinges/hardware · gaps around window seals or sashes · opened joints/mitres	inspect and wash windows	yearly, more frequently in geothermal/ seaspray areas
			repair faults found	as required
			replace hardware, sashes, window	as required
Decks/ Balconies	Enclosed balconies/ waterproof decks	· blocked outlets · evidence of water ingress · water ponding · decking membrane deterioration	inspect and clear blockages	yearly
			repair faults found	as required
			replace	as required
			If a leak is suspected, call a building surveyor for advice	
	Open timber decks	· moss build-up on decking · loose balustrades/posts · corroded/missing fixings/ · connectors · timber rot/splintering	inspect and clean	yearly
			repair faults found	as required
			replace decking	as required
	Car decks	· loose balustrades/posts	inspect and clean	yearly

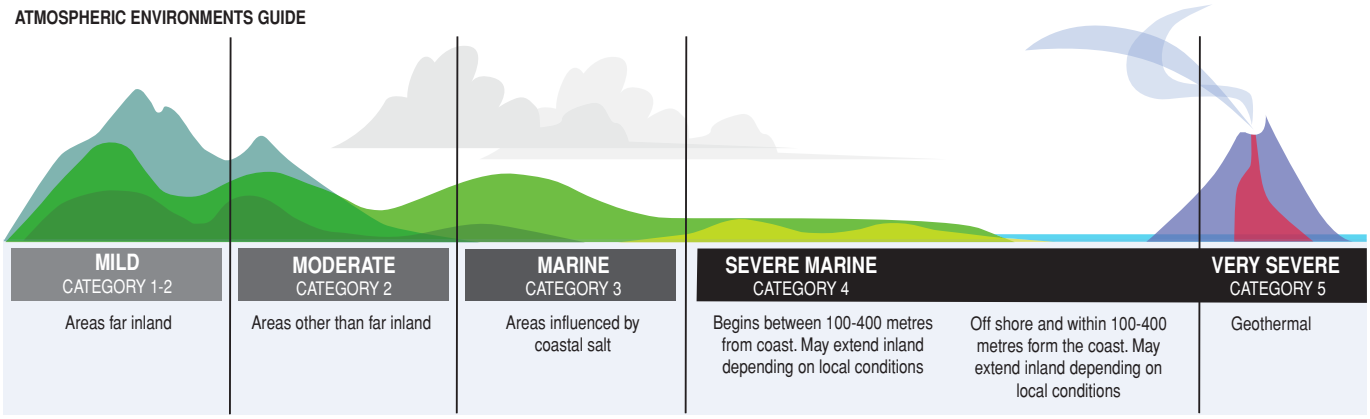
The BRANZ "Maintaining Your Home" schedule above details recommended roof, wall and deck maintenance requirements. However, it is likely that properties in ISO Category 4 & 5 environments (as shown below) or in south facing, frequently shaded and damp locations will require a more robust cleaning and maintenance regime than properties in other locations.

1.ii New Property – Recommended Maintenance Requirements

Property Maintenance is a warranty requirement for most manufacturers and suppliers who require that their products are kept free of organic growth, pollutants, salt and accumulated dirt by periodic cleaning. If it is not removed organic growth can eventually void most product warranties and result in structural damage to the property and premature failure.

The recommended maintenance requirements for most cladding and roofing products should be included in the manufacturer or supplier warranty documents. In addition, the maintenance requirements for metal roofing and cladding products are detailed in the NZ Metal Roof and Wall Cladding CoP.

ATMOSPHERIC ENVIRONMENTS GUIDE



The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies, and the atmospheric environments table is an ISO guide that is utilised in New Zealand

1.iii Health & Safety – Maintenance Considerations

The cleaning and maintenance of properties often involves working at heights. Worksafe and ACC statistics show that working at height can be highly risky for both DIY Homeowners and "jobbing" Trades People.

a) Worksafe states that preventing falls is a priority for MBIE and that 70% of falls are from ladders and roofs.

b) The Worksafe data shows that on average, between October 2018 and September 2019, 167 people per month were off work for a week or more because of a fall from height.

c) In 2014 ACC noted that around 9,400 ladder related injuries (around 780 per month) was costing New Zealand almost $17m p.a.

d) The Minister for ACC noted in 2009 that "5,400 people were injured while using a ladder at home. That's 104 every week or 15 a day."

In addition, between 2011 and 2020 over 100,000 people slipped and fell each year at an average cost of over $1,000 per incident. A number of these slips were on poorly maintained driveways, pathways and decks.

Exterior Cleaning companies undertake a wide range of specialist maintenance work, and their Operators are fully equipped and trained to undertake this work cost effectively, professionally and safely.

1.iv Environment – Maintenance Considerations

Exterior cleaners often use a range of bio-degradable, non-solvent and solvent products to clean properties. These cleaning products, along with the waste generated by the cleaning work, needs to be managed in accordance with the relevant Environmental and Health & Safety Standards, to ensure the protection of all parties and the environment.

Whilst all cleaning products are harmful to the receiving environment it is generally preferable to use bio-degradable, non-abrasive and non-solvent cleaning products.

Cleaning products and other contaminants, which have not been correctly managed, can quickly pollute the environment and if they enter the stormwater system, they can have a devastating impact on fish and aquatic life. This is particularly the case with drains that connect to waterways and with pollutants such as paint, grease, solvents and concrete dust.

However, the regular cleaning of properties (using appropriate environmental management controls) is an important source control in reducing the environmental "surge impact" (from dirt, heavy metals and organic material) that occurs during extreme rain events.

In addition to protecting the environment the periodic maintenance of properties by professional cleaning companies (who use cleaning products and processes that are correctly matched to the surface that is being cleaned, the work that is being done and the requirements of the RMA & Regional Authorities) reduces potable water usage and the over application of cleaning products.

Unfortunately, this is not always the case with uncontrolled sites and on a Sunday afternoon, driveway car washing in a city the size of Christchurch, can involve 1,000 kgs of excess detergent entering the stormwater system.

2. Water Management Standards

The purpose of the ECIA's water management standards is to set Operational Guidelines that enable exterior cleaners to minimize their use of potable water through;

a) The sourcing of non-potable (non-drinking) water from bores, rainwater tanks and other sources,
   - Non-Potable water is suitable for everyday activities such as exterior cleaning, gardening and irrigation and for use in washing machines & toilets.
   - Some Councils and Businesses offer non-potable water filling stations for exterior cleaning, construction and other non-drinking purposes.
   - Before sourcing water from a rainwater tank, it is important to ensure that it is available for non-potable activities.
   - Conversely – potable water is suitable for human consumption and contact (such as drinking, washing of dishes and showering) and is generally sourced from mains supply or designated rainwater tanks.

b) Providing Manufacturer, Operational and CoP training to staff,

c) Utilizing water conservation practices and procedures.

d) Using efficient, well-maintained and leak free equipment and accessories in accordance with the CoP guidelines.

2.i Treatment Cleaning Programs, Pressure Washing & Water Blasting Overview

In choosing between Treatment Programs, Pressure Washing and Water Blasting options the Operator should be looking to maximize the effectiveness of their work whilst minimizing water usage and the environmental impact of their work.

- **Treatment Cleaning Programs** are undertaken in conjunction with cleaning products and involve using low water pressure (of up to 345 kPa, 50 PSI or 3.45 BAR) to remove organic material from cladding and roofing products. **The organic material is weather cleaned over time.**

  Treatment Cleaning Programs will not damage the substrate and some Asbestos Containing roofing and cladding materials can be cleaned by Operators who have specialized training and knowledge in undertaking this work.

  Please note that though Treatment Cleaning Programs are sometimes referred to as Soft Washing the **ECIA recognizes Soft Washing as a form of Pressure Washing.** To avoid confusion regarding this overlapping terminology **the cleaning of Asbestos containing roofing and cladding products cannot be undertaken with water pressures of over 345 kPa, 50 PSI or 3.45 BAR.**

- **Pressure Washing** is often undertaken in conjunction with cleaning products and is the application of water at a pressure (of up to 20.7 MPa, 3,000 PSI, or 207 BAR) that is sufficient to remove the buildup of dirt, grime and organic material from cladding, paving and roofing products **at the time of the work.**

  Soft Washing is a form of Pressure Washing and involves using water pressure of up to 10.3 MPa, 1,500 PSI or 103.5 BAR and a large water droplet nozzle to clean surfaces.

  Professional pressure washing will not damage the substrate being cleaned.

- **Water Blasting** is the application of water at high volume and high pressure to remove the buildup of ingrained dirt, grime, organic material and surface coatings from cladding, paving and roofing products. The amount of water and pressure required to clean a surface is dependent upon the product.

  Water Blasting can result in damage to the substrate being cleaned.

The choice of cleaning options and what work can be undertaken involves consultation with the Customer and will be dependent upon a wide range of factors including;

- Local Council rules around water access and use.
  - These will be both Region and Council specific and may vary according to the time of year or because of local conditions and factors, such as dam storage levels, water demand or a drought.

- Water Conservation considerations
  - Can the surface be dry as opposed to wet cleaned (ie: sweeping vs hosing?)
  - Can the cleaning work be delayed to a period of higher rainfall?
  - Are there low water (more time consuming) cleaning options available?
  - Is there an accessible and appropriate source of rainwater, recycled water or bore water that can be used to undertake the work?

- Are the equipment and cleaning accessories “fit for purpose” and being used in a water efficient manner?
  - Larger engine driven high-pressure pumps are more water efficient (and will complete the cleaning work significantly faster) than battery or mains driven pumps.
  - Hose triggers, aerated spray nozzles and shutoff valves will reduce water use.

- Environmental considerations
  - Will the cleaning work generate any hazardous or non-hazardous liquid or solid waste (such as cement, chips, cleaning agent runoff, dirt, dust, fibers, granules, stones, paint flakes and oil) that needs to be contained and prevented from polluting the environment and the stormwater.
  - Is the choice of cleaning agent and control mechanisms suitable for the work being undertaken and reflective of the potential harm that could occur if the waste was to pollute the environment and the stormwater? This review is particularly important if a property is close to a waterway.
  - Is there a risk that the cleaning work being undertaken could affect neighboring properties or vehicles due to operator error, water pressure “bounce” or wind drift.
  - Will rain or wind conditions effect the efficacy of the cleaning work and the management of the cleaning waste.
- Health & Safety and Site considerations
  - Does the cleaning work need to be undertaken due to urgent H&S issues, such as a slippery and dangerous pathway.
  - Does the cleaning work involve working at height, ergonomic issues, uneven surfaces or the use of hazardous cleaning agents.
- The type of exterior cleaning work being undertaken.
  - What is the scope of works?
  - Is the exterior cleaning work being undertaken as part of a process?
  - Pre-Paint & Roof Coating exterior cleaning work is intended to remove mold, dirt, oxidation and loose paint through the use of cleaning solutions, agitation and rinsing.
- The substrate or coating being cleaned.
  - The substrate or coating manufacturers maintenance and cleaning recommendations.
  - Is the substrate or coating vulnerable to being damaged by the exterior cleaning work or cleaning agents?

  - Cladding and Roofing products which contain Asbestos should only be Treatment cleaned by Operators who have specialized training in undertaking this work.
- The type of contamination being cleaned
  - Is the grime or organic growth ingrained or heavy?
  - Is the cleaning part of a periodic maintenance program or on an “as needed” basis?
  - Is the periodic maintenance program quarterly, annual or in two, three or four yearly cycles?
- The cleaning Companies operational guidelines
- The cleaning Equipment’s operational guidelines
  - Is the equipment suitable for the cleaning work being undertaken?
- The cleaning Agents operational guidelines
  - Is the cleaning agent appropriate for the cleaning work being undertaken?

2.ii Exterior Cleaning Equipment

The following factors should be considered when selecting equipment for Exterior Cleaning work;

- Is the cleaning equipment and processes appropriate for the Treatment Cleaning, Pressure Washing or Water Blasting work that is being undertaken? For example;
  - ▶ All pressure cleaners should be equipped with handheld trigger nozzles.
  - ▶ Pressure cleaners should also have backup mechanisms (to eliminate the possibility of water wastage) when the trigger is not engaged. These can be in the form of either;
    - ■ A thermal dump valve or,
    - ■ A header tank with a bypass return hose and float valve.
  - ▶ It is recommended that low water cutoff switches or ballcocks are installed on header tanks, to minimize water wastage.
  - ▶ When cleaning buildings over one storey high, extension poles with adjustable nozzles or brushes should be used. This will reduce overspray by ensuring that the water is directed to the target area. In addition, the use of click-on fittings will facilitate rapid interchange from a standard lance to an extension, which will reduce down-time.
  - • Some exterior cleaning tasks, such as the cleaning of oils and grease, may require the use of specialized equipment that can utilize hot water. This work should be strictly done in accordance with the operational specifications of the equipment supplier.
- Will the cleaning equipment and process reduce the time and water required to undertake the work?

- Are the Environmental management controls (containment, disconnection, diverters, filters and water recovery), equipment, products, cleaning agents and processes compatible and appropriate for the cleaning work being undertaken – and will they provide the best outcome for the environment?
- Are the Health & Safety management equipment, tools, cleaning agents and processes appropriate for the site, conditions and the cleaning work?

2.iii Exterior Cleaning Process – General Work

The Exterior Cleaning Process for General Work involves some or all of the following prestart and task based steps – Area Review, Cleaning Agent Review, Water Review, Environmental Review, Equipment Review, Area Preparation, Application, Agitation and Rinsing.

a) Area review.

All jobs require an evaluation of the Health & Safety and Environmental risks associated with the work.

The level of planning required on a job will be reflective of the scope of work and the risks involved.

In addition to having Safe Operating Procedure's (SOP) and Job Safety Analysis (JSA) instructions and controls in place more complex jobs will require Site Specific Safety Plans (SSSP), Environmental Management Plans (EMP) and Safe Working Documents (SWD).

b) Cleaning agent review.

A range of bio-degradable, non-solvent and solvent products can be used to improve the cleaning process and water efficiency.

All cleaning agents can have both a direct and prolonged impact on the surrounding environment and it is preferable to use cleaning products that have a lower environmental impact, which can include some bio-degradable and non-solvent products.

Companies undertaking exterior cleaning work should detail the types of cleaning agents that they are using and how they are being used in their Safe Working Documents. These documents should also reference Safety Data Sheet information and include work stream specific details on dilution levels and safe use precautions.

Commonly used cleaning agents include Benzalkonium Chloride, Sodium Hypochlorite and Surfactants. **In concentrated form these products are all toxic or highly toxic to organic, animal and aquatic life.**

However, **if appropriately diluted and managed** the impact of these cleaning agents on the surrounding environment can be controlled and in some instances it will be minimal. As an example, the runoff onto unsealed ground from the professional pressure washing of residential houses will generally not affect the plant life on a property.

The choice of cleaning agent and how it will be used is dependent upon a range of factors including the Cleaning Companies Operating Procedures, the Manufacturers specifications for the surface that is being cleaned, the Suppliers instructions as to how the cleaning agent should be used, the requirement for Personal Protective Clothing (PPE) and the relevant Environmental and Health & Safety Standards.

This review will help ensure that the surface is not damaged by the cleaning process and that no harm comes to the environment, neighboring properties or anyone associated with the work. In some instances, areas will need to be isolated with appropriate barriers and signage.

The appropriate and safe use of cleaning agents is the responsibility of the exterior cleaning company, who could be liable for enforcement action if they are not used correctly.

c) Water review.

Where possible the Operator should use non-potable water from rainwater tanks and bores (that have been consented for this purpose).

As noted earlier, other water management considerations include reviewing whether there are low water or other cleaning options available to undertake the work.

d) Equipment review.

The choice of equipment will be dependent upon the requirements of the job and should reflect the scope of work.

In addition to periodic equipment maintenance tests and Test & Tag procedures all tanks, pumps, hoses, reels, wands and accessories should be regularly checked for water leaks to eliminate waste.

e) Area preparation.

Good preparation can greatly reduce the amount of water needed to clean an area and where possible a broom, blower or vacuum should be used to clear away any;

- Loose debris from the surface to be cleaned and any,
- Spiderwebs and wasp's nests from the area to be cleaned.

f) Application.

When applying cleaning solutions or solvents to a surface, the Operator can use a Hand sprayer pump, a Battery powered pump or an Engine driven pump.

The cleaning agent can be applied in advance of the Agitation and Rinsing or it can be sprayed as either a pre-mixed or venturi injected solution through the pump.

In most instances the Operator will use multiple applications or "passes" to apply the cleaning solution to the surface and to avoid the cleaning agent unnecessarily "misting", "bouncing" or "running off" the surface.

g) Agitation.

After applying the cleaning solution to the surface, the solution can be scrubbed to maximize its cleaning capability. This can be done by any of the following methods;

- Manually, with a brush or broom
- Direct pressure from mains, battery or engine driven pump water, delivered by one or more fixed or rotating nozzles
- A rotating brush powered by water flow from a battery or engine driven pump
- Commercial (floor) scrubbers

h) Rinsing.

After the cleaning process has been completed the following methods can be used to rinse the surface;

- Mains pressure water delivered by one or more fan shaped nozzles
- Battery or Engine driven pump water delivered by one or more fan shaped nozzles

Some exterior cleaning processes will use proprietary systems, equipment and cleaning solutions to combine some or all of the Area Preparation, Application, Agitation and Rinsing tasks.

Pressure Washing can also be used in conjunction with heated water to clean grease, paint and food products from hard surfaces. Cement, grease and paints are particularly harmful to the environment and any waste generated by pressure washing these products needs to be diverted or contained to prevent it from polluting the stormwater and the environment.

2.iv Pressure Washing – General Work

Pressure Washing is often used to remove ingrained dirt, grime and organic material from a wide variety of exterior hard surfaces, at the time of the work, or to prepare a surface for painting.

Slips, trips and falls are a common cause of injury and the regular cleaning and maintenance of pathways helps prevent unnecessary harm and extends the life of the pathway.

The following water efficient operating guidelines are recommended when undertaking the listed pressure cleaning work.

Driveway Cleaning

Hard Surface Cleaning - Driveways, Pathways, Tiles, etc. *General Guidelines for Residential & Commerical Properties*	**Flow Rate (Litres Per Minute)** A flow rate of over 15L pm & up to 30L pm should be used to clean larger surface areas as it will reduce water usage and the time needed to complete the work.
Operator Notes: • Consider dry cleaning options as part of the work process or instead of wet cleaning. The use of a brush, broom or vacuum to prepare hard surfaces for cleaning can minimise water use. • Review manufacturers specifications for the surface that is being cleaned and the equipment and cleaning agent supplier's instructions. • Rotary heads may be used for some hard surface cleaning work if they do not damage the substrate. • Use wide angled fan heads where surface damage is a possibility (ie: when cleaning sandstone, artificial playing surfaces, painted walkways, some tiles, etc. • The Pressure Rating should be reduced if surface damage is a possibility • Hot water cleaning options should be used in areas where there is vegetable oil, engine oil, chewing gum, tyre rubber marks such as in shopping centres, carparks, workshops, petrol stations, etc.	

Cladding Cleaning

Cladding Cleaning – Routine Maintenance, Paint Preparation etc	**Flow Rate (Litres Per Minute)**
General Guidelines for Residential & Commercial Properties	A flow rate of over 15L pm & up to 30L pm should be used to clean larger properties and undertake paint preparation work as it will reduce water usage and the time needed to complete the work.

Operator Notes;

- Consider dry cleaning options as part of the work process or instead of wet cleaning. The use of a brush, broom or vacuum to prepare cladding for cleaning can minimise water use.
- Review manufacturers specifications for the surface that is being cleaned and the equipment and cleaning agent supplier's instructions.
- The pressure cleaning of Asbestos cladding and fences is illegal
- Wide angled fan heads can be used for some pre-paint preparation work at a pressure that will not damage the substrate.
- Special care is needed when cleaning around cladding penetrations (windows, doors etc) to avoid unnecessary water ingress.
- Windows and insect screens on single storey buildings should only be hand cleaned.
- It is recommended that windows on multi-storey buildings are only cleaned by professional exterior cleaners.

Roof Cleaning

Roof Cleaning – Routine Maintenance, Paint Preparation etc	**Flow Rate (Litres Per Minute)**
General Guidelines for Residential & Commercial Properties	A flow rate of over 15L pm & up to 30L pm should be used to clean larger properties and undertake paint preparation work as it will reduce water usage and the time needed to complete the work.

Operator Notes;

- Consider dry cleaning options as part of the work process or instead of wet cleaning. The use of a brush, broom or vacuum to prepare the roof for cleaning can minimise water use.
- Review manufacturers specifications for the surface that is being cleaned and the equipment and cleaning agent supplier's instructions.
- The pressure cleaning of Asbestos roofs is illegal. Asbestos can be found in Super6 type profiles and some Shingles and older Metal Tile roofs. These products should be assumed to be Asbestos until testing proves otherwise.
- Roofs should be in good repair (and any damaged areas repaired) prior to cleaning to avoid the possibility of water ingress.
- Rotary heads may be used for some roof cleaning work at a pressure that will not damage the substrate.
- Wide angled fan heads can be used for pre-paint preparation work at a pressure that will not damage the substrate.
- Fan jets should be used where surface damage of the substrate is a possibility or when needing to facilitate water flow from a distance (ie: when working from a boom or scissor lift)

The two main types of nozzles used in Pressure Cleaning work are Fan heads and Rotary heads.

a. Fan heads (nozzles)

Come in a range of spray patterns that allow professional Operators to undertake a wide variety of task specific work;

The 0° nozzle is the highest-pressure nozzle and emits a pencil jet of water that should only be used for precision industrial cleaning. This nozzle is typically used to remove tar, glues, rust, resins and barnacles and can damage the substrate and cause harm if used incorrectly.

The 15° fan nozzle produces a tight, high-pressure spray that quickly blasts away dirt and debris. This high-pressure nozzle is great for heavy duty cleaning work such as concrete cleaning, paint striping and removing oxidation and grease.

The 25° fan nozzle produces a mid-strength spray pattern and is typically used for general purpose cleaning like removing mud, dirt and mould from bricks, paving and decking.

The 40° fan nozzle produces a wide low pressure spray pattern and is used for cleaning boats, cars, stucco and windows, which need to be cleaned with care.

b. Rotary heads (nozzles)

Produce a rotating and pulsating spray that increases the efficiency of the cleaning equipment. Rotary heads are ideal for the heavy duty cleaning of wide, flat areas like driveways, flooring and masonry. They can also be used to strip paint. Rotary nozzles are sometimes also known as Turbo nozzles.

2.v Treatment Cleaning Programs – General Work

Treatment Cleaning programs are widely used in the removal of organic material from roofs and (depending upon the process) generally involve a “first clean” or two successive annual cleans prior to the commencement of two, three and four yearly maintenance programs.

Following a Treatment program organic material is “weather cleaned” from roof & cladding surfaces over time. Due to the very low pressure used to Treatment clean surfaces these programs can be used to clean non-friable Asbestos Containing Material (ACM) that has been encapsulated or is good condition.

Unfortunately, once the surface coating of cladding and roofing products has been compromised by organic damage, they are vulnerable to further deterioration, which can result in leaks and costly repairs. The periodic treatment and cleaning of cladding and roofing products will stop the deterioration to a property, by removing the organic material and the expensive damage it can cause.

It is **highly recommended (by Councils) that debris diverters are installed on all downpipes** connected to stormwater and storage tank systems to keep them free of blockages. Debris diverters can also be used by roof cleaning companies to divert contaminated wash water from the receiving environment.

If a treated roof is being used for water harvesting it is particularly important to ensure that appropriate diversion and disconnection procedures are followed, to ensure that the potable water is not “tainted” by the roof treatment process.

2.vi Water Conservation Practices & Procedures

In addition to their documented (adverse environment) Contingency Plans, Operating Standards and Work Processes exterior cleaning companies should give consideration, in consultation with the customer, to the following water conservation practices. **A job specific review of these practices is a requirement during drought conditions;**

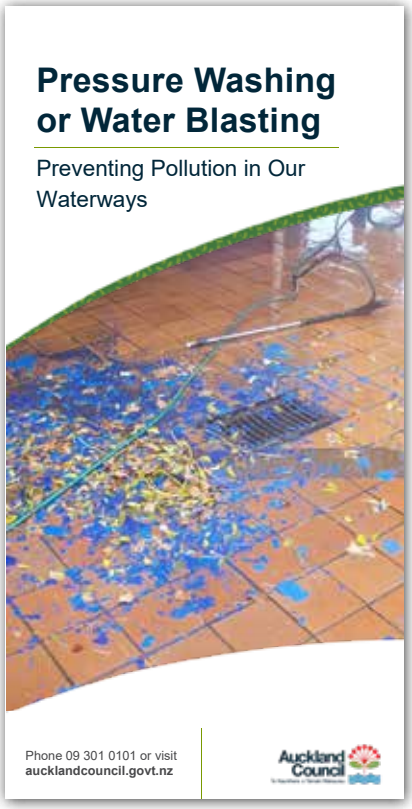
- Are there non-potable water sources available to undertake the work.
  - ▶ This may involve a cleaning company investing in new resources including their own rainwater tanks, vehicles, vehicle water tanks, trailers, pumps and hoses.
- Can the work be postponed to Autumn, Winter or Spring, when it is wetter.
  - ▶ This conversation also applies to customers on potable tank water.
- Review Treatment Cleaning, Pressure Wash, Water Blasting and cleaning agent assisted alternatives to minimize water use.
- Dry clean as opposed to wet clean areas such as gutters.
  - ▶ This will take more time and will need to be costed accordingly.
- Where appropriate, use brushes and brooms to prepare areas prior to cleaning.
  - ▶ This will take more time, but it will reduce water use.
- Review the appropriateness of undertaking chemical cleaning work in wet or windy conditions.

3. Environmental Standards

The Resource Management Act 1991 (RMA) is designed to protect our environment and it is illegal for any substance to be discharged into the stormwater system unless it has been authorized by a resource consent or council plan. The RMA is enforced by local Councils and polluters can be issued with abatement notices or prosecuted.

3.i Legal Responsibilities

We are all responsible for the environment and polluters can be **fined up to $1,000, issued abatement notices**, or prosecuted and **fined up to $600,000** for breaching the RMA.



a) Land & Property owners

Are responsible for the work undertaken on their land and have a duty of care to make sure that the Company or Contractor that they have selected knows how to do the job properly.

b) Contractors and Companies

Are responsible for the actions of their staff and must make sure that they are appropriately trained and equipped to do the job correctly.

c) Workers and Operators

Are responsible for doing the job in a manner that does not breach the environmental protections put in place by their Employer and can be held liable for clean-up costs and penalties.

3.ii Community Responsibilities

Everyone is responsible for the environment and has a “duty of care” to protect it. The primary reason that it is illegal to discharge contaminants into the stormwater is that some pollutants can impact on the quality of our water **and devastate our marine environment**, which can restrict community activities such as fishing, swimming and the gathering of kina, mussel’s and other mataitai.

3.iii Exterior Cleaning Contaminants

It is illegal and harmful to discharge Treatment Cleaning, Pressure Washing and Water Blasting waste into the stormwater system as the cleaning chemicals (including biodegradable detergents) and the concrete, dirt, grime, grease, metal ions, organic material, phosphates, petrochemical and sediment run-off can be extremely harmful to aquatic life and negatively affect the quality of the marine environment.

This is particularly the case for the runoff from Hard Washing activities which can break down the surface coatings of products – some of which (such as concrete) are extremely toxic due to their high pH content.

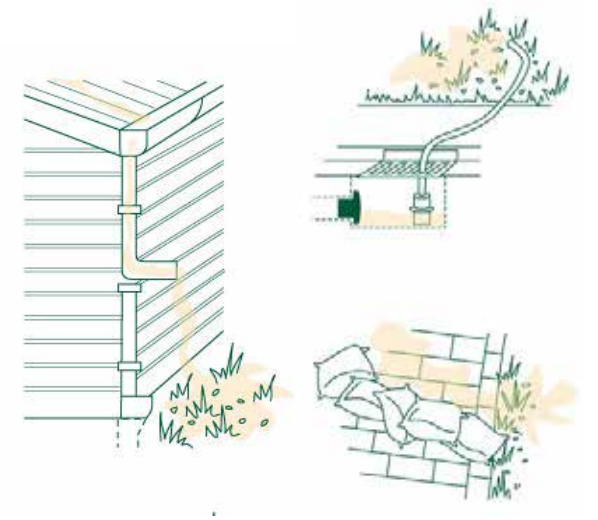
In addition, the level of contaminant run-off from poorly maintained properties also negatively effects the environment, due to the excessive buildup of grime, organic material and waste over time.

By contrast the regular cleaning of properties by Exterior Cleaning professionals, who correctly follow appropriate environmental management procedures, assists in reducing the environmental "surge impact" caused by extreme rain events and helps to protect the environment.

3.iv Environmental Management Procedures

Unless authorized by a relevant authority Treatment Cleaning, Pressure Washing and Water Blasting waste and cleaning agents (including biodegradable products) must be kept from entering the stormwater or sewage system. This can be achieved by containment, disconnection, diverters, filters and water recovery so that the contaminants are either removed from the runoff or the runoff is safely discharged onto unsealed ground.

These environmental procedures apply to all Exterior Cleaning work streams including the cleaning of driveways, gutters, pathways, playing surfaces, roofs, windows, wall claddings and vehicles and in the preparation of surfaces for follow on painting and coating work.



a) Containment Systems

Such as bunding, bungs, catch pits, and drain mats can be used to keep dirty water and contaminants away from stormwater drains and can be used in conjunction with diversion and recovery systems. It is important that containment systems are regularly checked and maintained to ensure that they remain "fit for purpose".

b) Disconnection & Diversion

Involves directing runoff from exterior cleaning activities on to unsealed ground using proprietary downpipe products, temporary drains, reusable sandbags or sand socks.

Containment systems can also be used in conjunction with disconnection and diversion procedures to ensure that runoff from the cleaning activities does not enter the stormwater system.

c) Filtration Systems

Come in a range of proprietary products and formats and can be installed on a mobile, temporary or permanent basis to manage stormwater runoff.

It is important that filtration systems are "fit for purpose" in terms of how they are being used, the contaminants that they are filtering and the volume of contaminants and water that they are treating.

It is also important that they are regularly inspected to ensure their ongoing efficacy.

d) Water Recovery Systems

Such as Vacuum Trucks, Pumps and WetVacs involves capturing the wash-water in a holding container prior to discharging it on unsealed ground. This can take place on or off site as appropriate.

Containment, diversion and filtration systems can also be used in conjunction with water recovery systems.

e) Spill Management

Requires an immediate response using one or a combination of the procedures listed above. The key steps in responding to a spill are as follows;

- Be Safe and use the appropriate Personal Protective Equipment (PPE).
- Stop the source.
- Protect the stormwater drains through containment, disconnection, diversion or filtration.
- Notify the Pollution Response Hotline if the stormwater has been contaminated by the spill.
- Clean up the area using one or a combination of the environmental management procedures listed above.

A key component of spill management is being prepared and where appropriate hazardous substances should be stored in appropriately labelled containers and Operators should carry Spill Response Kits (SRK) that are suitable for the work that is being undertaken.

f) Unprotected Areas

That could be affected by the cleaning and maintenance work, such as gardens, exposed soil and some products, should be hosed down, covered or isolated during the work.

g) Designated Wash Down areas

Should be used, on or off site, to ensure that cleaning equipment & vehicles do not contaminate the stormwater or the environment.

This will generally involve diverting wash water on to unsealed ground or using one of the listed containment or filtration procedures.

Toxic chemicals and products (such as oil-based paint) need to be contained and appropriately disposed of offsite.

In addition, it is also important to ensure that the road is not contaminated by the operator's vehicles through the management of tank fill levels.

The cost of not utilizing the listed procedures to control and manage runoff is significant as it takes five tanker loads of water to neutralize one litre of concrete slurry, which can easily kill organic and marine life.

Commercial vehicle cleaning operations will generally use a fully bunded wash bay and have a Trade Waste consent to discharge water into the sewer system.

3.v Trade Waste Discharge Consents

Councils can issue Discharge Management Consents, by work stream, to Businesses to allow them to capture, contain, filter and pre-treat contaminants so that they can be discharged into the sewer at approved locations.

The commercial management of Discharge Management Consents is the responsibility of a Councils Trade Waste Management provider.

3.vi Environmental Management Plan

Commercial Cleaning Operations and companies that are regularly involved in exterior cleaning activities should have in place an Environmental Management Plan (EMP) that complies with the requirements of the Health & Safety at Work (Hazardous Substances) Regulations 2017 and which explain the environmental risk of the company's activities and how these will be managed. A section of the EMP should allow for the customization of the documents to include site and job specific details.

In addition, an EMP will likely include a Spill Response Plan (SRP) and can also include pertinent operational information as per the examples listed below;

a) The application of cleaning agents

Should not be undertaken when high wind or rain is forecast.

b) If a chemically cleaned or newly painted roof is used for water harvesting

The water tank must be disconnected for at least 3 to 4 separate rain events, lasting more than 30 minutes, before it is reconnected to ensure that the potable water is not "tainted" by the maintenance work.

External Training Providers can support Exterior Cleaning companies and their Operators in learning how to identify, select and apply the various controls in the management of their EMP.

4. Health & Safety Standards

All exterior cleaning work is covered by the Health & Safety at Work Act 2015 and the Working at Height and Good Practice Guidelines provided by WorkSafe New Zealand.

4.i Health & Safety Standards Overview

Any exterior cleaning work that involves working at heights is also covered by the WorkSafe Roof Maintenance Guidelines, which note that **fall restraint harness systems are required for short duration work**, such as the application of moss & mould removal products – and other cleaning and maintenance work that is undertaken in minutes instead of hours.

In addition, the WorkSafe Roof Maintenance Guidelines note that long duration work, which lasts hours or takes place over several days, such as property cleaning and painting work, requires the use of edge protection, working platforms or scaffolding, depending upon the nature of the work and property.

It is the responsibility of the Exterior Cleaning Company to ensure that its specialist Operators are fully equipped and trained to undertake the work that is required of them.

4.ii Working at height considerations

When working at height the choice of control, such as Scaffolding, Edge Protection, Mobile Working Platforms, Fall Restraint, Fall Arrest and working off a Ladder will be dependent upon the nature, risk and duration of the work – subject to the highest possible control being used relative to the risk of the work being undertaken.

4.iii Working at height procedures

The cost, availability and expediency of control options should not be primary considerations when carrying out a risk assessment.

a) Working from a Ladder

Can be risky and dangerous and should only be undertaken in exception circumstances, or if the ladder provides a suitable work station

Ladder brackets and footings should always be used to secure the ladder during work.

b) Working from a Harness

Is the minimum requirement for Operators when working at height and no other protection is in place, such as scaffolding or edge protection. It can be used when the work is deemed to be “minutes” as opposed to “hours” on site or when the work does not allow for the use of any other fall protection.

c) Edge Protection

Is a barrier system that can be used for long duration work to prevent a fall. Edge Protection is not a working platform and kick boards should be used on roofs with a pitch of over 25˚.

d) Scaffolding

Will be generally installed with a working platform and can be used for a wide range of long duration work.

If scaffolding or edge protection is to be used on a property where overhead powerlines are in place, the powerlines will need to be isolated – which is generally done by using sleeves.

e) Mobile Working Platforms

Provide Operators with a flexible aerial working platform

In all instances the exterior cleaning Operator must check that the working at height equipment is safe, compliant and “fit for purpose” prior to commencing any work. This process may involve checking that the equipment has been appropriately tagged.

The only people who can alter, customize or adjust working at height equipment are the people that Manufactured, Supplied or Installed it.

The Operator should not use any Health & Safety or Cleaning equipment unless they have received the appropriate training in its use.

4.iv Hazardous Substances

Some of the Cleaning Agents and Products used by Exterior Cleaning companies are classified as hazardous substances and it is the responsibility of the company to ensure that these products are classified, managed, stored, transported and used in accordance with the requirements of the Health & Safety at Work (Hazardous Substances) Regulations.

The controls required to manage hazardous substances vary depending upon the risk of the substance, its hazardous properties, the level of dilution and how it is being used. Some controls, such as labelling are mandatory and others, such as signage, will depend upon the type and amount of the hazardous substance that is being used. The objective of the controls is to keep people safe and reduce the risk of an accidental spill that could affect the surrounding area.

4.v Health & Safety Policy

All ECIA Members are required to hold Public Liability Insurance and have a current and signed Health & Safety Policy.

The Health & Safety Policy sets out a company's commitment to managing its Health & Safety responsibilities effectively.

Exterior Cleaning Companies that are regularly involved in commercial and contract work are also likely to have in place a Health & Safety Plan supported by Safe Operating Procedure (SOP), Job Safety Analysis (JSA) and Site Specific Safety Plan (SSSP) documentation.

These documents detail the company's requirements across a range of areas including Operator experience & training, pre-start inspections, incident reporting, the maintenance of a tidy site and the use of PPE, Equipment, Work Barriers, Signage and Spill Kits.

Companies that regularly tender for work should also hold external safety validation such as SiteWise or a Totika pre-qualification.

5. Work Completion Standards

Exterior cleaning work should be carried out in accordance with the quoted scope of works, subject to any job specific exclusions that may apply. Any exclusions should be tagged in the quote and could relate to a range of factors including a defective building structure or existing property damage.

For commercial contracts Cleaning Company's may also provide survey and audit reports as part of their job documentation.

5.i Work Guarantees

All exterior cleaning work should be carried out in accordance with the Fair Trading Act, the Consumer Guarantees Act and any other relevant statutes or regulatory requirements.

Some exterior companies may also offer product, workmanship and job guarantees in addition to their legal responsibilities.

It is a requirement that ECIA Members have Public Liability Insurance.

6. Retrofit Recommendations

Many ECIA members have significant experience in the cleaning and maintenance of residential and commercial properties and can offer expert advice on low maintenance products, environmentally compatible maintenance programs and the performance of well-maintained products over time.

6.i Residential Longrun Metal Roofing

A new roof is a significant investment and if you choose a longrun metal roof you should consider specifying .55 gauge steel and fire retardant underlay for the following reasons;

- .55 gauge steel results in reduced foot traffic damage & associated water ingress issues.
- .55 gauge steel provides a tighter fastener seal, due to its superior strength, which reduces the chances of washer leak issues.
- .55 gauge steel is more durable.
- The life expectancy of a steel sheet roof is between 30 to 60 years depending upon a range of environment, roof design, installation, foot traffic and maintenance factors.
- Self-supporting synthetic underlays are tougher, will not rot or disintegrate over time and offer a higher degree of weather protection than bituminous underlays.
- Self-supporting synthetic underlay is less likely to rip or tear during installation, therefore the life of the underlay is not compromised and is maximized.
- Self-supporting fire-retardant underlays do not spread flames and have a higher degree of moisture breathability (permeability) than bituminous underlays.

6.ii Residential Metal Tile Roofing

If you choose a metal tile roof you should consider specifying a Textured Shake profile and fire retardant underlay (as listed in 6.i) for the following reasons;

- The Shake profile gives good foot traffic resistance and can be double battened in high foot traffic areas.
- The Textured finish minimizes the transmission of sound
- The Textured finish is less susceptible to manual handling damage and offers superior durability.
- The life expectancy of a steel tile roof is between 30 to 60 years depending upon a range of environment, roof design, installation, foot traffic and maintenance factors.

6.iii Residential Concrete Tile Roofing

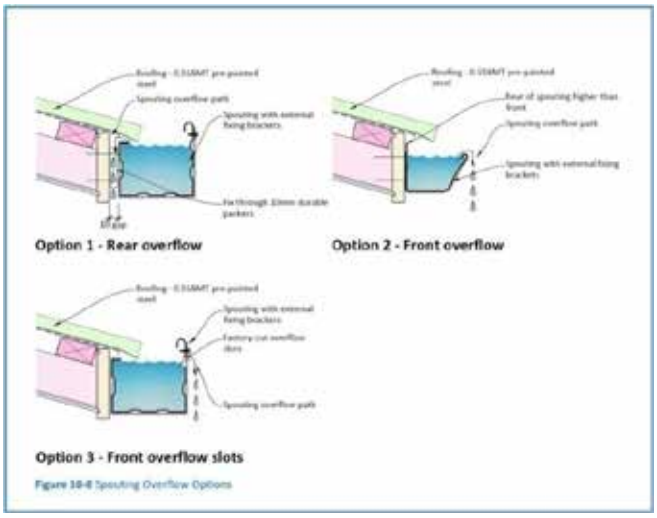
Concrete Roof Tiles are no longer manufactured locally and the majority of profiles are now imported from Australia. If you choose a concrete tile roof you should consider specifying fire retardant underlay to provide a higher degree of weather protection and you may wish to review whether replacement tiles are readily available, should you need to repair or alter your roof.

- Modern machine manufactured concrete tiles can last up to 80 years if the roof is not in a harsh environment and has been properly installed, regularly maintained, periodically re-painted, kept free of moss & lichen and not subject to inappropriate foot traffic.

6.iv Residential Gutters & Downpipes

When specifying a Rainwater System, you should give consideration to the following MOE 2020 requirements for new school buildings, due to the higher intensity rainfalls that are becoming more regular with climate change;

- A rainwater system designed in accordance with the MRM Code of Practice.
- A rainwater system with external brackets, which will allow water to flow more freely, reduces the build-up of debris and can be wand cleaned from the ground.
- A rainwater system with an overflow capacity, to prevent water from entering the building envelope due to a blockage or an extreme rain event. The MOE specifies three types of overflow systems;



  - A rear overflow system with a (minimum) 10mm overflow gap between the rear of the gutter and the fascia board.
  - A front overflow system with factory cut slots in the front face of the gutter.
  - A front overflow system with a factory manufactured front edge that is lower than the rear edge.

When specifying a Rainwater System consideration should also be given to the following matters;

- The installation of Council recommended downpipe debris diverters, which act as a secondary overflow system, stop downpipe blockages and allow for the RMA compliant cleaning of roofs and gutters.
- Whether the installation of a rainhead will enhance the performance of the rainwater system.
- The durability of the gutter and fascia products; as some gutter products, including those made from aluminium, are more durable than others – and wooden fascia lasts over twice as long and is easier to maintain than most metal fascia's.
- How the gutter and roof will be accessed safely to undertake maintenance work – through the installation of permanently fixed ladder brackets or designated access areas.

7. Summary Best Practice Procedures

Consumers can expect to see the following acceptable and recommended summary work procedure's when a competent company undertakes the listed work;

7.i Asbestos Cladding and Roofing

Asbestos is a naturally occurring mineral composed of flexible fibres that can be harmful to human health. It is generally found in Super 6 cladding and roofing profiles and in some older shingle and metal tile roofs.

Prior to undertaking any cleaning work Companies must first review the scope of the work and the risks associated with it. In some instances, this may require a comprehensive work management and safety plan to be implemented, as some Asbestos roofing products can be very brittle, and the cleaning work could result in damage to the property, environmental contamination and "fall through" risks.

To this end, all Super6 profiles and Shingles (that contain asbestos) should be treated as brittle roofs until the appropriate controls have been put in place.

Companies that are not familiar with managing Asbestos cleaning work should visit the WorkSafe website and thoroughly review the risks associated with this work prior to commencing the work.

Non-friable Asbestos cladding and roofing products that are in good repair and not fragile can be cleaned using most Treatment Cleaning programs. **The Treatment Cleaning process must not exceed 345 kPa (50 PSI or 3.45 BAR) and may not remove all the organic material or grime.**

Any Asbestos cladding & roofing removal work of over 10sqm^2 must be undertaken by trained Operators under the supervision of a Class B license holder.

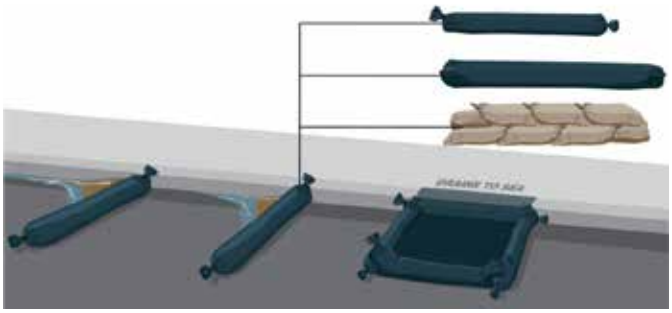
7.ii Catchpit Protection

The protection of roadside kerb catchpits is a secondary control designed to intercept contaminated run off before it enters the stormwater system.

Roadside catchpits are part of the public stormwater network and they **are not to be used as a containment system.**

The methods that can be used to protect catchpits will be dependent upon the site, the location of the catchpit, the type of work that is being undertaken, the water flow, the contaminants that are being managed and the forecasts weather.

It is the responsibility of the cleaning company to ensure that **the catchpit is protected from both debris and chemical contamination, including the pH of the runoff water.**



There are a wide range of catchpit Blocking and Filter protection options including;

- Blocking devices such as sandbags, bunds, sand socks, drain mats and drain plugs to stop wastewater from entering the catchpit.
  - The number and type of blocking devices used will be dependent upon the amount of water that is being managed and its flow.
  - It is important that the blocking devices are safely installed, secured, regularly monitored and that water does not run under them.
  - Ponded water will need to be removed and disposed of appropriately.

- Filter devices such as geotextile cloths and filter bags, bunds, cloths, inserts and socks are commonly used as a secondary control to filter sediments before they enter the stormwater systems. Some proprietary filter devices can also remove other contaminants such as hydrocarbons, metal ions and organic cleaners from entering the stormwater system.
  - The number and type of filter devices used will be dependent upon the amount of water that is being managed and its flow.
  - It is important that the filter devices are safely installed, secured, regularly monitored and that water does not run under them

7.iii Detention, Retention & Water Tanks

The installation of detention, retention and water tanks may require a building consent and the property owner is responsible for regularly maintaining the tanks to ensure that they operate as intended and that the water quality is satisfactory.

- Detention Tanks temporarily store stormwater runoff during a rainfall event and then slowly release the water into the public stormwater system. Detention tanks are part of the stormwater system and appropriate containment, disconnection, diverter, filter and water recovery procedures need to be utilized in conjunction with these tanks.

- Retention Tanks permanently hold rainwater, which can then be used for non-potable purposes such as gardening, laundry and toilet use. Appropriate environmental management procedures need to be utilized in conjunction with these tanks to ensure that the property is not affected by the cleaning activities and products.

- Dual purpose Tanks both retain and detain rainwater. The bottom third of the tank is used to store rainwater permanently for non-potable water supply and the upper two thirds of the tank temporarily holds rainwater and slowly releases it into the stormwater system.
- Water Tanks store rainwater collected from the roof for household drinking and other purposes. In addition to standard environmental management procedures, roofs that are used to harvest water for potable purposes must be disconnected for at least 3 to 4 separate rain events, lasting more than 30 minutes, before being reconnected to ensure that the water is not “tainted” by the maintenance work.

7.iv Property Owner Responsibilities

The property owner is also responsible for managing the drainage on the property to ensure that it does not contaminate the stormwater.

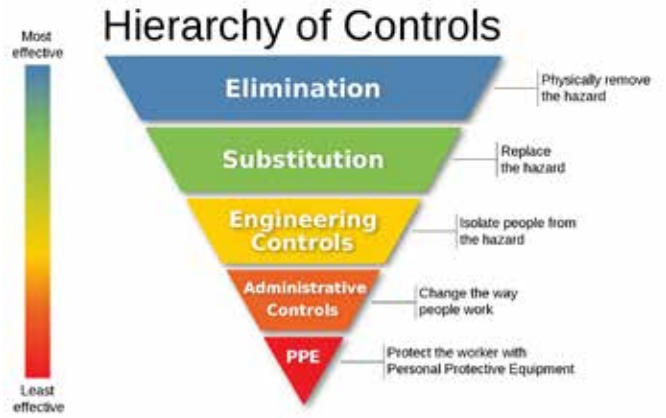
This is best achieved through regular property maintenance, which includes cleaning the cladding, driveway, gutter and roof. This work, if undertaken in conjunction with appropriate environmental management procedures, also helps keep our waterways and coastal areas clean and safe by reducing the impact of heavy rain surge events on the marine environment.

The property owner can undertake this work on a “DIY” basis or utilise a professional exterior cleaning company.

7.v Risk Management & PPE Requirements

Risk Management describes the process by which Companies identify, evaluate, manage and monitor the Environmental, Health & Safety, Property and Operational hazards associated with the work that they are undertaking, through reasonable and practicable controls.

For Exterior Cleaning Companies that are regularly involved in commercial and contract work the Risk Management process will be a component part of their Environmental, Health & Safety and Operational Plans.



The key risk management controls, in decreasing order of importance are;

- Elimination of the hazard that is creating a risk to people, the environment and the site.

- Substitution through the minimization of the risk to people, the environment and the site through the implementation of good work practices, which could include,
  - Isolation of the hazard that is creating risk to people, the environment and the site.
  - Engineering Controls to manage the risk to people, the environment and the site.
  - Training of team members to manage the risk to people, the environment and the site
  - PPE to manage the risk to people undertaking the work or visiting the site.

If Engineering Controls or PPE are required on site it is important that they are fit for purpose, readily available and that team members are trained in their use.

Engineering Controls can include work barriers, edge protection, and mobile work platforms.

PPE can include Hi Viz Clothing, Overalls, Gloves, Harnesses, Hearing Protection, Safety Glasses, Dust Masks and Safety Boots.

7.vi Roof Access Systems – Permanent Options

Though professional exterior cleaners are fully equipped and trained to work at height the periodic maintenance of gutters and roofs is deemed by WorkSafe and ACC to be highly risky for all practitioners.

In some instances, property owners will choose to install permanent roof access systems to allow their planned and responsive maintenance work to be carried out more cost effectively and safely.

Permanent roof access systems include the installation of fixed ladder brackets, ladders, edge protection, anchor points and walkways.

The decision to install permanent roof access systems is dependent upon a range of factors including the total cost of the proposed system, the frequency and risk profile of the maintenance work and the reduction in time that people spend working at height.

A fixed ladder bracket is a cost-effective roof access system for many one, two & three level properties but more challenging sites will require higher cost alternatives and composite solutions.

8. Support Resources

In addition to the CoP there are several Associated Trade and Organisation support resources that can be helpful in managing water conservation and discharge matters.

8.i Council

The Auckland Council provides the following good practice and information brochures;

- Building on small Sites: Doing it right
- Catchpit Protection
- Concrete, Cement and Exposing Aggregate
- Food Waste & Grease
- Paint Management
- Personal Protective Equipment
- Pressure Washing or Water Blasting
- Property Owner Responsibilities
- Risk Management
- Spill Response Plan
- Being prepared for a Spill
- Vehicle and Equipment Washing

8.ii BRANZ

BRANZ is an independent research organisation focused improving the system wide performance of the New Zealand building system. The following BRANZ research documents have been referenced in the CoP;

- Life Cycle Costs and Analysis of Roof Claddings Systems (2010)
- House Condition Survey (2015)
- Healthy Houses Report (2016)

8.iii MRM Metal Roof and Wall Cladding CoP

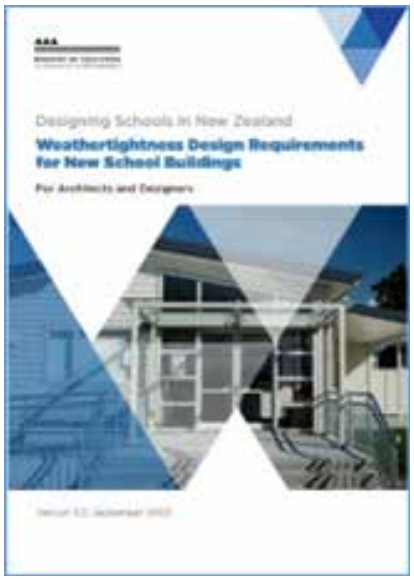
The MRM Metal Roof and Wall Cladding CoP outlines and prescribes acceptable trade practices and detailing requirements for Installers and Designers of metal roof and wall cladding products.

It also outlines the scheduled maintenance requirements for building envelope products as required by Section 44 of the Building Act.

8.iv MOE Weathertightness Design Requirements

The MOE 2020 design requirements document provides designers with weathertightness requirements for new school buildings.

The MOE is a long-term owner of more than 18,000 school buildings and it is focused on optimising the total lifetime cost of its new buildings (which is composed of both the initial capital cost and the ongoing maintenance costs) and its learnings are incorporated into the 2020 design requirements document.



8.v RANZ Roof Coatings CoP

The RANZ Roof Coatings sets out the normal practices that the consumer can expect to see when a competent coating company applies a roof coating.

The preparatory work undertaken by a roof coating company largely mirrors the roof maintenance work undertaken by an Exterior Cleaning Company and the exterior cleaning and roof coating CoP's can be seen as companion and overlapping documents.

9. Industry Definitions

The following industry definitions and acronyms are helpful in supporting clear and transparent communication when discussing the management of a job;

Access: A means of accessing a job safely. Also, the creation of a safe pathway for the building user when work is being carried out.

Acrylic: A water-based coating

Adhesion Test: The application of adhesive tape to test the fastness of the existing coating.

Aesthetic performance: The visual appearance of your cladding, paving or roofing products following exterior cleaning or associated maintenance work.

Airless Spraying: A spraying process that does not use compressed air.

Application Rate: The volume of water, solution or coating required to undertake a task as per the CoP or product Supplier's recommendation.

Asbestos: A fibrous silicate mineral that was used in many building products in the past. Due to the potential to cause significant harm competent persons or licensed operators must be consulted prior to the commencement of work to ensure that correct procedures are followed, appropriate to the task, when asbestos is present.

Asphalt Shingles: Asphalt based roof tile profile.

Barge Flashing: The finished edge of the roof made from the same material as the roof.

Bed/Pointing: The system used to secure concrete and clay ridge tiles to the roof.

Biodegradable: Anything that can be decomposed by living matter.

BRANZ: Building Research Association of New Zealand

Brittle Roofing: Any roofing material that does not have the structural integrity to support a person walking on the roof.

Catchpit: A stormwater device, that is commonly located on roadside kerbs, comprised of a grate, small chamber and sediment trap.

Clear Roofing: Any type of roofing that is made from fiberglass, perspex or polycarbonate to enable light transmission.

Competent Person: A person who has the training or experience to carry out a task.

Concrete Tile: Concrete based roof tile profiles.

Containment: A method used to stop contaminated water entering the stormwater system.

DecraMastic: An historical Brand of mastic coated metal tiles. It is now a generic term that is used to describe all bitumen coated metal roofs. Asbestos was used in the manufacture of some of these tiles prior to 1983. These roofs can be Treatment Cleaned by Professional Operators, but they must be tested by an IANZ accredited laboratory (to determine the presence Asbestos) before any maintenance work can be undertaken.

Dew Point: The temperature point, which causes moisture to form on a cool surface.

Downpipes: A pipe connected to a gutter to move water to a lower roof or the stormwater system. Downpipe spreaders are often attached to downpipes that discharge on to a lower roof.

ECIA: Exterior Cleaning Industry Association

Edge Protection: A safety system installed at the roof edge to prevent a fall over the edge of the roof.

Encapsulation: A process where a coating system or product is used to cover another product.

Fasteners: Any nail, screw or rivet used to secure cladding and roofing products.

Fibrolite: The brand name and generic term for a commonly used cladding and roofing material composed of fibres and cement. Earlier versions of this product used asbestos, which was banned in 1984.

Gutter Protection: A protection system designed to prevent organic debris accumulating in the gutter.

Gutter: A channel at the edge of a roof to convey water to the downpipes.

Hard Wash: Also called water blasting. The application of water at a high pressure to remove the buildup of ingrained dirt, grime, organic material and surface coatings from cladding, paving and roofing products.

Harness Systems: Fall Arrest and Fall Restraint Harness Systems are the minimum requirement for Operators when working at height and no other fall protection is in place, such as scaffolding or edge protection.

Longrun: Sheet based metal roofing profiles manufactured to site-specific lengths.

Maintenance: An action to preserve the good order of the cladding, paving or roofing product. This could be the periodic washing down of a property to remove accumulated dirt, grime and organic material.

Masking: A barrier applied to prevent the transfer of the coatings to another surface.

MBIE: Ministry of Business, Innovation and Employment

Membrane: A roof and gutter weatherproofing product made from fibreglass, bituminised sheet, rubber, vinyl, TPO or a liquid membrane.

Metal Tile: Metal based roof tile profiles available in a painted or textured (chip) finish.

Mobile Elevated Work Platforms: MEWP's are a mechanized mobile device, such as cherry picker or scissor lift, to enable working at heights.'

MOE: Ministry of Education

Moss and Mould Removal Products: Liquid cleaning solutions that are applied to kill organic material. The activation timelines and expected results for these products is variable depending upon their composition.

NIWA: National Institute of Water and Atmospheric Research

NZMRM: New Zealand Metal Roofing Manufacturers (also referred to as the MRM)

Penetration: A fixture such as a pipe, skylight, aerial, satellite dish, vent or chimney that goes through a roof or is attached to the roof.

PPE: An item of Personal Protection Equipment such as safety glasses, hearing protection, overalls, safety shoes, respirators, gloves, hard hats and high visibility clothing.

Pressure Wash: Is often undertaken in conjunction with cleaning products and is the application of water at a pressure (of up to 20.7 MPa, 3,000 PSI, or 207 BAR) that is sufficient to remove the buildup of dirt, grime and organic material from cladding, paving and roofing products without damaging the substrate.

Primer Coat: A coating layer that is applied prior to the Top Coat. It is generally used to support adhesion of the coating or paint system to the substrate.

Product Warranty (Guarantee): A commitment by the product supplier to remedy nonperformance of the product if an issue were to arise within a set period.

Repairs: Rectifying the cladding or roof to provide a suitable substrate for painting. This may include replacement or treatment to remove damage, which would detract from the visual performance of the substrate. Includes stopping leaks and water ingress that has been identified at the initial assessment.

Roof / Cladding Wash: A cleaning agent that is applied to the roof or cladding to aid the removal of accumulated debris such as moss and lichen.

Runoff: Any water that has run over the roof and discharged via the downpipes.

Scaffold: A system for keeping people safe when working at heights. Scaffolding must be installed by a competent person at less than 5 metres and by a certified person above this height.

Sealant: An extruded building product that provides a barrier to moisture ingress.

Soft Wash: A form of Pressure Washing that involves using water pressure (of up to 10.3 MPa 1,500 PSI or 103.5 BAR), cleaning products and a large water droplet nozzle to clean surfaces.

Stormwater System: A Council managed rainwater disposal system that collects discharge from downpipes, paved areas and roads.

Structure: The internal components that support the cladding and roofing products on a property such as the frames, rafters and trusses.

Substrate: The base product that coating and painting systems are applied too.

Terracotta Tiles: Clay-based roof tile profiles.

Top Coat: The last layer of a paint or coating system.

Treatment Cleaning Programs: Low pressure (of less than or equal to 345 kPa, 50 PSI or 3.45 BAR) cleaning programs designed to remove organic material from cladding and roofing products over time. Due to their low-pressure application, most Treatment Programs can be used to clean non-friable Asbestos products.

Though Treatment Cleaning Programs are sometimes referred to as Soft Washing the ECIA recognizes Soft Washing as a form of Pressure Washing. **To avoid confusion regarding this overlapping terminology the cleaning of Asbestos containing roofing and cladding products cannot be undertaken with water pressures of over 345 kPa, 50 PSI or 3.45 BAR.**

Valleys: The intersecting point of two internal sloping roof planes. This is usually made of metal and requires assessment prior to the coating process starting.

Viewing Distance: It is recommended that exterior cleaning work is viewed from a distance greater than or equal to 3 meters when assessing aesthetic performance.

Water Blasting: The application of water at a high pressure to remove the buildup of ingrained dirt, grime, organic material and surface coatings from cladding, paving and roofing products.

Water Harvesting: Collecting rainwater for future uses such as human consumption or for irrigation.

Workmanship Warranty (Guarantee): A commitment by the Exterior Cleaning Company to undertake work to a given standard and to remedy non-performance of the work if an issue arises with the work over a set period of time.

10. ECIA Members

The ECIA is composed of the Membership categories listed below.

The CoP, which can be freely downloaded off the ECIA website (ecia.co.nz), includes a list of current Members at the date the document was printed or saved.

Please refer to the Members websites for their depot locations and the regions, services and products that they offer.

10.i ECIA Membership Categories

The Exterior Cleaning, Fleet Washing and Related Industry Membership Categories are all composed of financial, voting Members who are actively provide Exterior Cleaning Services.

Associate and Individual Members are non-financial, non-voting Members with an interest in the water and discharge management objectives of the ECIA.

a) Exterior Cleaning Membership Category

- Deck, Carpark, Driveway, Pathway and Road concrete Sweeping and Cleaning
- Cladding Cleaning
- Window Cleaning Washing
- Gutter Cleaning
- Roof Cleaning Washing / Treatment

b) Fleet Washing Membership Category

- Mobile vehicle Cleaning
- Vehicle Cleaning Stations

c) Related Industry Membership Category

- Cladding Coaters & Painters
- Roof Coaters & Painters restorers

d) Associate Membership Category

- Related Businesses & Organizations
- Suppliers of Equipment, Product & Services

10.ii Members Directory

Region a) Kaitaia to Taupo

Region b) Taupo to Wellington

Region c) South Island

10.iii Associate Members Directory

Members Directory: Kaitaia to Taupo

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Partners in Property

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WELLINGTON & HUTT VALLEY

Members Directory: Kaitaia to Taupo

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THE FLEET CLEANING SPECIALISTS

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