

Balustrade Maintenance & Upkeep

Frameless Glass Balustrade Stainless Steel or Aluminium Handrail

Glass Options

- * Clear Toughened Glass
- * Tinted Toughened Glass
- * Laminated Clear Toughened Glass
- * Tinted or Special Order Glass
- * Laminated Clear Glass
- * Laminated Tinted Glass

Frameless Glass Balustrade systems are many and varied the use of a variety of clear to tinted and even obscure toughened single or laminated glass makes it a versatile balustrade.

Cleaning

Instructions to all trades and individuals

Always follow manufacturer's installation and cleaning instructions.

It is recommended that glass be protected from contamination caused by building materials and methods during construction as this will greatly simplify the glass cleaning task at the end of the project. If the glass is not protected during construction then the glass and frames should be cleaned frequently during construction.

Construction dust, leach ate from concrete and rusting from steel can contribute to the formation of mild chemicals, which may stain or otherwise damage the glass.

Glass should be cleaned using only cleaning materials which are free of grit and debris (to avoid scratching and marking of the glass surface).



Glass retention systems

- Powder coated Aluminium Frame
- Anodized Aluminium Frame
- Stainless Steel Retention System

Only detergents and cleaning solutions which are recommended for cleaning glass should be used. Mild detergents are preferable.

Extra care is necessary where high performance reflective glass is installed. The coated surface can be susceptible to stains and scratches and therefore requires vigilance during the full construction process.

Temporary screens should be installed if welding, sandblasting, floor sanding, cuffing or other potentially damaging construction practices takes place near the glass.

Glass installations which are adjacent to concrete (e.g. concrete slab floors) require extra care and cleaning due to the abrasive nature of concrete dust.

All tradesmen should be advised to be aware of damaging glass and windows and to leave in place any materials protecting the window or glass.

Toughened glass

The cleaning of toughened glass requires special care. The glass surface opposite the standards compliance stamp may, as a consequence of the manufacturing process, have pick up on the surface. Pick up is a deposit of very small particles of glass which are fused to the glass surface. A cleaning method which does not dislodge these particles should be employed otherwise scratching of the glass surface may result. Blades or scrapers have been known to dislodge 'pick up' from the glass surface. A soft cloth, which will not dislodge 'pick up', should be used. It is suggested that professional cleaners consult with their suppliers as to the suitability cleaning equipment, materials and methods.

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Special Products

The following Viridian products require specific procedures. Click on each to download supporting material.

- [Renew](#)
- [Comfort Plus](#)
- [Comfort Save](#)
- [Sol Tech](#)
- [Energy Tech](#)
- [Enviroshield Performance](#)

What Not To Do

Do not use cleaners which contain Hydrofluoric or Phosphoric acid as they are corrosive to the glass, surface.

Do not clean glass when the glass is hot or in direct sunlight

Do not allow cleaning solutions to contact the edges of Laminated glass, Insulating Glass units or Mirrors.

Do not store or place other material in contact with the glass. (This can damage the glass or create a heat trap leading to thermal breakage).

Abrasive cleaners, powder based cleaners, scouring pads or other harsh materials should not be used too clean windows or other glass products.

Avoid causing extreme temperatures changes to the glass as this may lead to thermal fracture of the glass, i.e. do not splash hot water on cold glass or freezing water on hot glass.

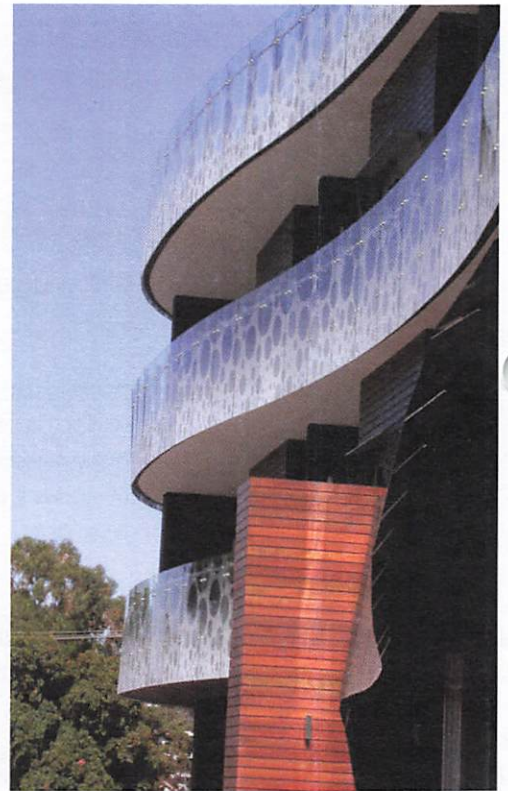
Some tapes or adhesives can stain or damage glass surfaces. Avoid using such materials unless they are known to be easily removed.

If Damage Occurs!

If glass is damaged or broken on-site ensure that experienced glaziers are engaged to rectify the situation. Glass can be a safety hazard if not handled properly.

Note to the Painter

Paint spots have been traditionally removed using a sharp razor blade. The use of a blade can be in some cases cause damage to the glass. As an alternative investigate solvents or graffiti removal materials, ensure that they will not damage the glass. If blade or scraper is used then the risk of damage can be reduced by using a scraper which has a clean edge and is held at an angle of 30 degrees to the glass. Consult the supplier of the blade or scraper as to how it is best used to clean glass. However, surface coated modified or tinted glass requires special care. Seek cleaning advice from your local merchant



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Care of Mirrors

Mirrors require special care in cleaning. To clean mirrors, simply wipe over the surface with a few drops of Methylated spirits on a damp cloth. Polish surface dry with a lint free cloth. Some proprietary glass cleaners, if used to excess can cause damage to the silvering as can excessive amounts of water. Make certain when cleaning the face of the mirror that there is no contact with the silver backing, particularly at the edge of the glass and be careful to keep any moisture away from the paint backing of the mirror. Do everything possible to ensure that the cleaning cloths used are free of any abrasives.

About This Cleaning Advice

This information is offered as a general guide only and specific advice should always be sought from a reputable glazier or professional window cleaner before undertaking any cleaning. This guidance does not preclude the use of other methods, materials or equipment, however the user should undertake careful evaluation and make suitable enquiries of the suitability of alternative methods, materials or equipment, before using them.

Whilst Viridian has made every effort to ensure the accuracy and effectiveness of this information, Viridian makes no representation as to the accuracy or effectiveness of the information and takes no responsibility for any loss, damage or injury which may be caused as a direct or indirect result of the use of this information.

1. Do not clean Glass in direct sunlight as the cleaning solution can dry before you can get the window clean. This could leave streaks on the glass.
2. Before pulling out all of the cleaners and supplies, take a dampened towel and wipe the glass, glass retaining channel, or frame to remove any excess dirt and grime. This makes it easier to get the glass clean and sparkling.
3. The easiest way to clean glass that is to take glass cleaner and paper towels or a lint-free towel to clean the glass. Be sure to change out towels as they get damp and dirty. This will help to prevent streaking .
4. The use of black and white recycled newspaper rather than towels to wipe glass is possible. Another thing that you can use is coffee filters.
5. A mixture of vinegar and water in a spray bottle can be used in place of the glass cleaner.
6. Alcohol based Methylated Spirit can help to remove oily based marks from glass.
7. Seraphic Silk Screen painted toughened glass
8. **Balustrade glass not accessible from outside.**

The use of a squeegee to clean Balustrade Glass is very easy effective.

1. Dampen glass to remove or loosen dirt and grime
2. Using mild detergent or water soluble glass cleaner, wash Glass and then squeegee off.

Cleaning the inside and outside of the balustrade glass, use different cleaning strokes on each side. Wipe the outside vertically and the inside horizontally so that you can tell which side you need to re-wipe easily and quickly.

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Stainless Steel Care & Maintenance

Introduction

The attractive and hygienic surface appearance of stainless steel products cannot be regarded as completely maintenance free. All grades and finishes of stainless steel may in fact stain, discolour or attain an adhering layer of grime in normal service. To achieve maximum corrosion resistance the surface of the stainless steel must be kept clean. Aluline always use 316 marine grade stainless but cleaning schedules to be carried out regularly, good performance and long life will be achieved. Frequency and cost of cleaning of stainless steel is lower than for many other materials and this will often out-weigh higher acquisition costs.

Why Maintenance is Necessary

Surface contamination and the formation of deposits are critical factors which may lead to drastically reduced life. These contaminants may be minute particles of iron or rust from other non-stainless steels used in nearby construction and not subsequently removed. Industrial, commercial and even domestic and naturally occurring atmospheric conditions can result in deposits which can be quite corrosive. An example is salt deposits from marine conditions.



Working environments can also create more aggressive conditions, such as the warm, high humidity atmosphere above indoor swimming pools. These environments can increase the speed of corrosion and therefore require more frequent maintenance. Modern processes use many cleaners, sterilisers and bleaches for hygienic purposes. All these proprietary solutions, when used in accordance with their makers' instructions are safe, but if used incorrectly (e.g. warm or concentrated) can cause discolouration and corrosion on the surface of stainless steels. Strong acid solutions (e.g. hydrochloric acid or "spirits of salts") are sometimes used to clean masonry and tiling of buildings but they should never be permitted to come into contact with metals, including stainless steel. If this should happen the acid solution must be removed immediately by copious water flushing.

On Going Maintenance

Advice is often sought concerning the frequency of cleaning of products made of stainless steel, and the answer is quite simply "clean the metal when it is dirty in order to restore its original appearance". This may vary from once to four times a year for external applications or it may be once a day for an item in hygienic or aggressive situations. In many applications the cleaning frequency is after each use.

Balustrade Maintenance & Upkeep

Cleaning Methods

Stainless steel is easy to clean. Washing with soap or a mild detergent and warm water followed by a clean water rinse is usually quite adequate for domestic and architectural equipment. An enhanced appearance will be achieved if the cleaned surface is finally wiped dry. Specific methods of cleaning are as in Table 1.

Sections below give passivation treatments for removal of free iron and other contamination resulting from handling, fabrication, or exposure to contaminated atmospheres, and pickling treatments for removal of high temperature scale from heat treatment or welding operations.

Passivation Treatments

- Grades with at least 16% chromium (except free machining grade such as 303), 20-50% nitric acid, at room temperature to 40°C for 30-60 minutes.
- Grades with less than 16% chromium (except free machining grades such as 416), 20-50% nitric acid, at room temperature to 40°C for 60 minutes.
- Free machining grades such as 303, 416 and 430F, 20-50% nitric acid + 2-6% sodium dichromate, at room temperature to 50°C for 25-40 minutes.

Precautions

Acids

Acids should only be handled using gloves and safety glasses. Care must be taken that acids are not spilt over adjacent areas. All residues must be flushed to a treated waste stream. Always dilute by adding acid to water, not water to acid. Use acid-resistant containers, such as glass or plastics. If no dulling of the surface can be tolerated a trial treatment should be carried out; especially for pickling operations. All treatments must be followed by thorough rinsing.

Solvents

Solvents should not be used in confined spaces. Smoking must be avoided when using solvents.

Chlorides

Chlorides are present in many cleaning agents. If a cleaner containing chlorides, bleaches or hypochlorite's is used it must be afterwards promptly and thoroughly cleaned off.

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Stainless Steel Care & Maintenance

Table 1

Problem	Cleaning Agent	Comments
Routine Cleaning All finishes	Soap or mild detergent and water (Preferably warm)	Sponge, rinse with clean water, wipe dry if necessary. Follow polish lines.
Fingerprints All finishes	Soap and warm water or organic solvent (egg acetone, alcohol, Methylated spirits)	Rinse with clean water and wipe dry. Follow polish lines.
Stubborn Stains and Discolouration. All finishes.	Mild cleaning solutions, egg. Jif, specialty stainless steel cleaners.	Use rag, sponge or fibre brush (soft nylon or natural bristle. An old toothbrush can be useful). Rinse well with clean water and wipe dry. Follow polish lines.
Lime Deposits from Hard Water.	Solution of one part vinegar to three parts water.	Soak in solution then brush to loosen. Rinse well with clean water.
Oil or Grease Marks. All finishes.	Organic solvents (egg. acetone, alcohol, Methylated spirits, proprietary "safety solvents"). Baked-on grease can be softened beforehand with ammonia.	Clean after with soap and water, rinse with clean water and dry. Follow polish lines.
Rust and other Corrosion Products.	Rust stains can be removed by adding one part of nitric acid to nine parts of warm water. Leave for 30 to 60 minutes, then wash off with plenty of water, and flush any drains thoroughly. See also previous section on Passivation.	Rinse well with clean water. Wear rubber gloves, mix the solution in a glass container, and be very careful with the acid. (see Precautions for acid cleaners)
Routine Cleaning of Boat Fittings.	Frequent washing down with fresh water.	Washing is recommended after each time the boat is used in salt water.
Scratches on Polished (Satin) Finish.	Slight scratches - use impregnated nylon pads. Polish with scurf's dressed with iron-free abrasives for deeper scratches. Follow polish lines. Then clean with soap or detergent as for routine cleaning.	Do not use ordinary steel wool - iron particles can become embedded in stainless steel and cause further surface problems. Stainless steel and "Scotch-bright" scouring pads are satisfactory.

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Aluminium Care & Maintenance

Aluminium is now by far the most common material used in exterior construction features such as shop fronts, curtain walls, window frames and doors. This is due to its many enduring features, which allow architects to use the metal in so many varied and contrasting ways. Aluminium has a natural beauty and lustre and its surface can be treated in various ways to produce differing effects i.e. anodising, painting etc.

But if Aluminium is not kept in good condition by regular maintenance its surface finish can become spoiled over time. Usually this maintenance is no more than periodic cleaning. A fact which is often overlooked..

It is difficult to prevent dirt and grime from settling on exposed Aluminium surfaces but if cleaned reasonably frequently then only the mildest methods of washing will be needed to produce satisfactory results.

There are many ways to clean Aluminium, from using plain water to harsh abrasives and the type of cleaning that should be used is governed by the finish, degree of soiling, and the size, shape and location of the surface to be cleaned.



The following cleaning materials and procedures are listed in ascending order. When cleaning Aluminium you should start with the mildest method possible on a small portion of the object and progress to the harsher methods only if necessary. The first two can also be used to clean anodised Aluminium.

- Plain water
- Mild soap or detergent
- Solvent cleaning, e.g. kerosene, turpentine, white spirit
- Non-etching chemical cleaner
- Wax-base polish cleaner
- Abrasive wax
- Abrasive cleaner

After applying the cleaner, Aluminium should be washed down thoroughly with water and dried with a clean cloth. Try not to allow concentration of the cleaner at the bottom edges of the Aluminium.

If using proprietary cleaners the maker's recommendation should be obtained and followed carefully.

If abrasives are used then the appearance of the Aluminium finish may be altered. If there is a grain in the finish then cleaning should always be with the grain.

Regular cleaning of the surface with the correct materials will ensure an everlasting product.

The Aluminium oxide that forms on the surface of Aluminium is a self protecting surface and removal of this allows more to form, in

Glass Cleaning Recommendations (Excerpts from Glass associations' of Australia and North America)

The recommendations in this section of the publication can be used for Commercial as well as residential glass products.

These recommendations should be followed to reduce the opportunity of damage to glass surfaces during cleaning.

Aluline's Recommendations

One of the common mistakes made by non-glass trades people, including glass cleaning contractors, is their use of razor blades and other scrapers on a large portion of the glass surface. Using metal blades to scrape a glass balustrade clean carries a large probability for causing irreparable damage to glass.

Aluline recommends that metal blades never be used to remove material from glass surfaces. Any use of a metal blade or other inappropriate or destructive cleaning techniques is at risk of the owner/cleaner voiding Aluline's and/or glass suppliers warranty on the glass.

Glass Processing Technicality

During manufacturing and processing, glass surfaces are exposed to a number of processes and materials, which can leave residue on the glass surface. During the manufacturing of the float glass, coated glass, tempered and toughened glass, the surfaces are exposed to vacuum cups, rollers, packaging material (paper, cardboard, foam, cork etc.), glass production labels and balustrade frame manufacturer's labels.

These materials that come into contact with the glass surfaces during glass processing, balustrade fabrication and installation can leave a residue on the glass that is not visible under normal viewing conditions. These residues may become visible when moisture is present on the glass (i.e. rain water, condensation, etc.) and is not considered to be a glass defect and glass should not be replaced because of this condition.

Proper Procedures For Cleaning Architectural Glass Products

Architectural glass products must be properly cleaned during construction activities and as part of a routine maintenance in order to maintain visual and aesthetic clarity. Since glass products can be permanently damaged if improperly cleaned, glass procedures and fabricators recommend strict compliance with the following procedures for properly cleaning glass surfaces.

Do not use cleaners which contain Hydrochloric or Phosphoric acid as they are corrosive to the glass surface.

Do not clean glass when it is Hot or in Direct sunlight.

As dirt and residue appear, interior and exterior glass surfaces should be thoroughly cleaned. Concrete and mortar slurry which runs down (or is splashed on) glass can be especially damaging and should be washed off as soon as possible. Before proceeding with cleaning determine whether the glass is clear, tinted/painted/seraphic or reflective. Surface damage is more noticeable on reflective glass as compared with the other glass products. If the reflective surface is exposed, either on the exterior or interior, special care must be taken when cleaning, as scratches to the reflective glass surface can result in coating removal and a visible change in light transmittance. Cleaning glass in direct sunlight should be avoided at all times and jewellery and watches should be removed before cleaning.

Cleaning should start at the top of the glass working down also at the top of the building working down so as to reduce the risk of leaving residue and cleaning solution on glass at the lower levels.

Cleaning during construction activities should begin with thoroughly soaking the glass surfaces clean water and soap solution to loosen dirt or debris. Using a mild, non-abrasive commercial window washing solution, uniformly apply the solution to the glass surfaces with a soft brush, strip washer or other non-abrasive applicator. Immediately following the application of the cleaning solution, squeegee should be used to remove all of the cleaning solution from the glass surface. Care should be taken to ensure that no metal parts of the cleaning equipment touch the glass surface and that no abrasive particles are trapped between the glass and the cleaning materials. It is also advisable that workers engaged in the cleaning of glass remove all hand jewellery and watches. All water and cleaning solution residue should be dried from framed balustrade gaskets, sealant and the frames themselves to avoid the potential for deterioration of these materials as a result of the cleaning process.

Proper Procedures For Cleaning Architectural Glass Products (cont.)

It is strongly recommended the glass washers clean a small area or balustrade panel, then stop and examine the surface for any damage to the glass and/or reflective or other coating. The ability to detect certain surface damage, i.e. light scratches, may vary greatly with lighting conditions. Direct sunlight is needed to properly evaluate a glass surface for damage. Scratches that are not easily seen with a dark or grey sky may be very noticeable when the sun is at a certain angle in the sky or when the sun is low in the sky.

The glass industry takes extreme care to avoid glass scratches by protecting all glass surfaces during glass manufacturing and fabrication, as well as during all shipping and handling required to deliver the glass to the end user. A large percentage of damaged glass results from non-glass trades working near glass. This will include painters, renderers, tilers, concreters, iron workers, plasterers, carpenters and others who are part of the construction process. They may inadvertently lean tools against it or splash materials or grinder/welding sparks onto it or clean the glass incorrectly, any of which can permanently damage the glass.

One of the most common mistakes made by non-glass trades people, including glass cleaning contractors, is their use of razor blades or other scrapers on a large portion of the glass surface. Using 50, 75, 100, 125 mm and larger blades to scrape glass balustrade clean carries a large probability for causing irreparable damage to glass.

The entire industry of glass manufacturers, fabricators, distributors and installers neither condones nor recommends widespread scraping of glass with metal blades or knives. Such scraping will often permanently damage or scratch the glass surfaces. When paint or other construction materials cannot be removed with normal cleaning procedures a new 25 mm razor blade may need to be used only on non-coated glass surfaces. The razor blade should be used on small spots only. Scraping should be done in one direction only. Never scrape in a back and forth motion as this could trap particles under the blade that could scratch the glass. This practice may cause hairline concentrated scratches, which are not normally visible when looking through the glass, but may be visible under certain lighting conditions.

Quick Reference

Below are things to Do when cleaning Glass	Below are things to Not Do when cleaning Glass
Do clean glass when dirt and residue appear	Do Not start cleaning before reading all of this document
Do determine if coated glass surfaces are exposed	Do Not scrapers of any size or type for cleaning glass
Do exercise special care when cleaning coated glass surfaces	Do Not allow dirt or residue remain on glass for an extended period of time
Do avoid cleaning tinted and coated glass surfaces in direct sunlight	Do Not begin cleaning glass without knowing if a coated surface is exposed
Do start cleaning at the top of glass working down	Do Not clean tinted or coated glass in direct sunlight
Do soak glass surface with clean water and soap solution to loosen dirt and debris	Do Not allow water or cleaning residue to remain on the glass or adjacent materials (sealant or frame)
Do use a mild, non-abrasive commercial window cleaning solution	Do Not begin cleaning without rinsing excessive dirt and debris
Do use a squeegee to remove all the cleaning solution	Do Not use abrasive cleaning solutions or materials
Do dry all cleaning solution from balustrade gaskets sealants and frames	Do Not allow metal parts of cleaning equipment to contact the glass
Do clean small section of glass and check to see if procedures have caused any damage	Do Not wear hand jewellery or metal watch bands when cleaning glass
Do be aware of and follow the glass supplier's specific cleaning recommendations	Do Not trap abrasive particles between the cleaning material and the glass surface
Do caution other trades against allowing other materials to contact the glass	Do Not allow splashed materials to dry on the glass
	Do Not other trades lean tools on the glass surface



Note

Major glass manufacturers such as those listed below recommend:

General Cleaning products:

1. Windex Glass & Surface (Clear liquid, not Blue), produced by S.C. Johnson and Son
2. A mixture of 1 part Vinegar 10 parts clean water
3. In addition to the above products , commercially available vinegar-based glass cleaners have generally demonstrated an ability to provide a clean, streak free glass surface.
4. Most reputable glass manufacturers Do Not recommend the use of ammonia-base and alcohol-base glass cleaners because these products tend to leave visible streaks.

Sources:-

G James, Glass cleaning Guide

PPG Glass Technical Document TD-144, 142

Viridian 2011 Architectural Glass Specifiers Guide and Pilkington ATS-144 Technical Information

The information in this guide is current at the time of publishing. It is intended as a guide only and Aluline recommends you check with your manufacturer or glass supplier to obtain specific cleaning instructions for your glass products. Aluline accepts no liability for any damage or loss that may arise from the use of this guide or the information contained within.

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27 September, 2013

Probuild Constructions (Aust) Pty Ltd
Level 10
580 St. Kilda Road
Melbourne, Vic, 3004

Attn: Sash Ghanavati

PROJECT: Precinct, 601 Victoria Street, Abbotsford, Vic

Balustruct Pty Ltd confirms that the aluminum sliding privacy screens at the abovementioned project have been installed in accordance with AS1170.1

Balustruct Pty Ltd confirms the provision of a 7 year warranty period from the date of Certificate of Occupancy, which covers the installation and workmanship of the sliding privacy screens.

All warranty claims must be authorized by Balustruct Pty Ltd before any remedial work is undertaken.

Should you require any further information, please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Mark Brierty", written over the typed name.

Mark Brierty

Director

Operations Manual

Precinct Apartments

Single Fixed Screen

This is a permanent fixed non moveable screen.

Clean by using a damp cloth and warm soapy water.

Double Screen

This is two screens in their own individual tracks, the outermost screen 1 is a permanent fixed screen and acts as stop for screen 2 by a tag located in the centre. This will open out to the width of the fixed screen only. Its stacked position (closed) is directly behind screen 1, so it looks like 1 screen from the front. Screen is moved by grabbing either the side profile of the screen or (in the case of 1800mm H balustrade balconies) the handle provided.

Clean by using a damp cloth and warm soapy water.

Tripple Screen

This is 3 screens in their own individual tracks the outer most screen 1 is a permanent fixed screen and acts as a stop for screen 2+3 by a tag located in the centre. This will open out to double the width of fixed screen only. Its stacked position (closed) is directly behind screen 1, so it looks like 1 screen from the front. Screen is moved by grabbing either the side profile of the screen or (in the case of 1800mm H balustrade balconies) the handle provided.

Clean by using a damp cloth and warm soapy water.

Maintenance

The maintenance of these screens is very simple but needs to be carried out on a regular basis to ensure full operation.

Regular Checks on all running gear, this includes top and bottom wheels, handles and tags.

Ensure bottom tracks are clear of any obstructions that could potentially effect the sliding operation.

No chemicals are to be used in the cleaning process

Regards



Balustruct

Dulux Powder Coatings Duralloy® XT

AU_DP01825

Product Code	272 Line
Approval	Meets and/or exceeds requirements of AS3715, BS6496.

Description

Duralloy® XT is a TGIC free, tough thermosetting powder coating that exhibits decorative and durability characteristics suitable for interior and exterior product applications combined with excellent overall performance.

Features And Benefits

- 7 year film integrity warranty *
- 7 year colour warranty *
- Lower temperature cure
- Wide product range
- No solvents or emissions
- Guaranteed performance on correctly pre-treated aluminium
- Very good colour retention
- Cost savings on energy or increased line speeds
- Extensive selection of colours
- Less waste and pollution to the environment

Uses

Duralloy® XT was developed primarily for use on extruded aluminium, including window and door joinery, and extruded aluminium panel work on class 1 & 10 Residential buildings. Duralloy® XT is also suitable for use in many applications over a variety of substrates, including mild steel and aluminium.

Precautions And Limitations

- Duralloy® XT is only available in colours which meet Dulux Powder Coatings pigmentation criteria. Strong, bold colours may not necessarily meet these criteria and should be referred to Dulux Powder Coatings before specifying.
- As a result of possible wide application variations and stoving conditions, some products and colours may show variation between Dulux Powder Coatings prepared samples and production applied material. Therefore, it is the applicator and/or their customer's responsibility to ensure the product conforms to their requirements.
- For optimum performance ensure recommended dry film thickness is obtained.
- Not recommended for use in highly corrosive environments such as severe marine or industrial locations.
- Not recommended for components which are exposed to constant temperatures exceeding 120°C.
- Excessive bending or post fabrication may cause cracking of the pretreatment and powder coating. Specifiers are advised to discuss post fabrication techniques with Dulux prior to commencing such fabrication.
- Please refer to the Duralloy Performance Warranty for conditions & limitations which effect the warranties described in this data sheet.

Performance Guide

Exterior Durability	Very good resistance to weathering.	Salt	Excellent salt spray resistance over pre-treated aluminium. (3000 hours ASTM B117)
Heat Resistance	Excellent resistance to 120°C continuous service conditions.	Water	Excellent resistance to 38°C/100% humidity for 1000 hours on pre-treated aluminium.
Solvent	Resistant to alcohol and white spirits.	Abrasion	Very good resistance to abrasion.
Acid	Resistant to spills of dilute acid. Avoid contact.	Alkali	Resistant to spills of dilute alkali. Avoid contact.

Typical Properties																
Gloss Level	30 98%		Coverage	Theoretical spreading rate at recommended film thickness: A												
Shelf Life	12 months when stored below 25°C/dry conditions.		V.O.C Level	Nil												
Colour	A range of stock and made to order solid & pearl colours.															
Meets GBCA VOC Requirement?	Yes. Dulux Powder Coatings: • Contain no harmful volatile organic solvents • Free of heavy metal pigments such as lead, cadmium, arsenic & mercury • Proven low temperature curing technology • Produced with stringent Safety, Health & Environmental policies and standards • Developed with consideration of life cycle analysis, to guide our suppliers and the materials we use • Manufactured in facilities where significant energy and resources employed in production, are measured with aggressive reduction targets in place • Produced and used with minimal waste Consequently, Dulux ® Powder Coatings are a prime consideration for projects where air quality standards have been set, such as 4, 5 & 6 Green Star Rating Projects.															
Film Build (microns)	Minimum 50 microns, Maximum 110 microns		Clean Up	Dust or vacuum loose powder. Avoid use of compressed air.												
Application Method	Electrostatic Spray		Specific Gravity	1.52 - 1.59 @ colour												
Flexibility	Limited < or = 80 inch/lb Avoid post fabrication or refer to		Pencil Hardness	Min F												
Knoop Hardness	Min 15		Cross Hatch Adhesion	No removal Chemical												
Chemical Resistance	<table><tr><td>Mortar</td><td>Resistant</td></tr><tr><td>White Sprits</td><td>Resistant</td></tr><tr><td>Ethanol</td><td>Resistant</td></tr><tr><td>Xylene</td><td>Slight softening/limit contact</td></tr><tr><td>Methyl Ethyl Ketone</td><td>Softens/avoid contact</td></tr><tr><td>Ethyl Acetate</td><td>Softens/avoid contact</td></tr></table>				Mortar	Resistant	White Sprits	Resistant	Ethanol	Resistant	Xylene	Slight softening/limit contact	Methyl Ethyl Ketone	Softens/avoid contact	Ethyl Acetate	Softens/avoid contact
Mortar	Resistant															
White Sprits	Resistant															
Ethanol	Resistant															
Xylene	Slight softening/limit contact															
Methyl Ethyl Ketone	Softens/avoid contact															
Ethyl Acetate	Softens/avoid contact															
Cure Schedule	Metal Temperature (°C) 210 200 180		Time (minutes) 4 mins 5 mins 8 mins	Comments												

Application Guide

Surface Preparation	- Surfaces should be prepared according to AS1627.6-2003 Section 3 to achieve a conversion coating corresponding to Class 1. Chemical supplier recommendations should also be adhered to, as appropriate. Suitable pre-treatment includes: - Aluminium: Chrome chromate or green chromate/phosphate (refer AS1627.6-2003) - Ferrous metals: Abrasive blast (SA 2.5) / Zincshield™ powder primer (refer Zincshield™ Data Sheet), or Zinc phosphate or Iron phosphate (refer BS6497) - Zinc Coated Steels (eg. Galvanising): Zinc Phosphate or chromate (refer BS6497) - Stainless Steel: Suitable metal blast. Recommended maximum blast profile of 25 microns
Application Procedure And Equipment	1a) For fluidised bed, ensure uniform fluidisation of powder. Fluidised powder should resemble "simmering liquid". Aged or compacted powder may require pre-conditioning for several minutes to fluidise evenly. 1b) For box feeders, ensure probe is fully inserted in powder and operated as per manufacturer's recommendations. Box feeders are not suitable for the application of pearlescent and metallic finishes. 2) Apply by electrostatic spray. 3) Cure as per recommendations outlined above. Metal temperatures in excess of 210°C should be avoided due to the possibility of colour change or thermal degradation of the polymer. 4) Test for cure of the coating by contact with a drop of Corsol PGMA (available from Dulux Powder Coatings) for 30 seconds. Surface should be wiped dry and immediately checked for softening. Only slight surface softening should occur. Electrostatic spray NOTES: * Light colours may require a higher minimum film build for optimum coverage and colour consistency. Theoretical spreading rate at recommended film thickness: A coverage rate of 8 - 10 sqm/kg corresponds to 80 microns cured film thickness assuming no loss. Practical spreading rates will vary due to such factors as method and conditions of application and surface profile and texture.

Care And Maintenance

As a general rule, cleaning of externally located powder coating surfaces must take place every six months. Where salts/pollutants are more prevalent such as seaside, industrial and geothermal areas, a cleaning program should be carried out more frequently.

THREE STEPS TO CLEANING POWDER COATED SURFACES

1. Remove loose deposits with a wet sponge (avoid scratching the surface by dry dusting).
2. Using a soft clean cloth and a mild detergent in warm water, clean the powder coating to remove dust, salt or other deposits.
3. Always rinse after cleaning with fresh water to remove any remaining detergent.

WARNING

In some cases, strong solvents recommended for thinning various types of paints and also for cleaning up mastics/sealants are harmful to the extended life of the powder coated surface. These solvents should not be used for cleaning purposes and will render the warranty void if used. If paint splashes or sealants/mastics need to be removed then the following solvents can be used safely: Methylated Spirits, White Spirits, Ethyl Alcohol, Isopropanol.

Health And Safety

MSDS Number	10489	Safety Precautions	The MSDS is an integral part of using this product as it contains information on the potential health effect of exposure, personal protective equipment needed and other relevant SH&E information. For detailed information, refer to product label and the current Chemical Data Sheet (No. 10489) is available through Sales and Customer Service Offices. Phone: Australia:- 13 24 99
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In the case of emergency, please call 1800 033 111

Transport And Storage

Package Weight	20 Kg	Shipment Name	Not dangerous goods. No special transport requirements.
Flash Point	N/A	UN Number	N/A
Dangerous Goods Class	N/A		

Disclaimer

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The data provided within the Duspec system is correct at the time of publication, however it is the responsibility of those using this information to check that it is current prior to specifying or using any of these coating systems.

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Please note that this document is only valid for 60 days from the date of issue.

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