



The ClearShield Eco-System[®]

- Glass Renovation
- 'Non-Stick' Protection
- Maintenance

The ideal solution when ordinary glass cleaning is no longer effective.



Ritec offer a unique and specialist service for the renovation, 'non-stick' protection and maintenance of glass.



01 Contamination during construction
 02 Silicone run-off
 03 Hydrocarbon pollution
 04 Residential glass
 05 Sandblasted glass
 06 Shanghai World Finance Center - ClearShield® applied to the glass in the factory prior to installation
 07 The surface of glass is not smooth

Glass renovation brings glass back to a pristine, 'as-new' appearance.

The award-winning ClearShield Eco-System® renovates glass to its original quality and appearance and upgrades it to 'non-stick' ClearShield Eco-Glass® which is always easier to clean and looks like new for longer.

With over 40 years of track records, the ClearShield Eco-System® is proven to protect glass surfaces and helps to avoid the following problems:

New build and refurbishment

- delayed certification on glazing handover
- costly replacement to upgrade glazing during refurbishment
- remedial work for chemical attack caused during construction
- unsatisfactory final clean or call-backs

Operational Maintenance

- difficult to reach glazing
- deployment and maintenance of access equipment
- unsatisfactory window washing – persistent deposits and staining
- glass quickly becomes dirty after cleaning
- dissatisfied owners and occupiers

The build-up of contaminants causes many problems and will chemically attack the surface of unprotected glass, sometimes irreversibly.

There are a number of situations where contaminants can attack glass, creating different problems:

- **Glass contamination during construction**
 Splatter from concrete, plaster and mortar, cement dust and other construction materials stain unprotected glass and are difficult or even impossible to remove 01. Glass replacement may be a solution but of course is costly in terms of both time and money.
- **Glass contamination from the environment**
 Once glass is installed, typical contaminants such as concrete and silicone sealant run-off 02, hydrocarbon pollution 03, traffic fumes, tree sap and bird droppings can attack the surface, leaving an unattractive appearance.
- **Interior glass contamination**
 Greasy, dirty deposits such as fingermarks, nicotine, bacteria and cooking vapours are unsightly, unhygienic and difficult to remove. Moisture vapour, hard water deposits and chlorine combine to etch the glass in environments such as shower enclosures, swimming pools and leisure facilities.

The solution to all of these problems is renovation carried out by Ritec's specialist application teams with the ClearShield Eco-System®.

When regular cleaning is no longer effective, renovation effectively removes contaminants – both organic and inorganic – that have not yet etched the glass during the corrosion process 04.

Even the toughest contamination – for example from harsh marine environments – can be removed successfully. The surface is restored for enhanced clarity and a pristine 'as-new' appearance.

Glass protection retains the 'as-new' appearance of glass.

Immediately after renovation, the glass surface is sealed and protected by ClearShield®, upgrading it to ClearShield Eco-Glass®. Working like 'non-stick' cookware, ClearShield Eco-Glass® looks newer for longer, reduces maintenance costs and increases satisfaction for owners and occupiers.

For all exterior and interior glass, including sandblasted glass 05, ClearShield Eco-Glass®...

- resists staining and discolouration
- is always easier to clean and keep clean
- typically halves the frequency of cleaning

In addition:

- treated sandblasted glass resembles the satin appearance of acid-etched glass for a higher quality appearance
- protected glass will not return to a heavily contaminated or stained condition again provided simple maintenance procedures are followed
- the performance of glass treated with ClearShield® is guaranteed
- by taking the initiative and specifying ClearShield® protection before glass becomes contaminated, the renovation process is avoided altogether 06

How it works

The surface of glass is not smooth and consists of microscopic peaks and potholes 07. Organic and inorganic contaminants fill these potholes and some react chemically with the glass, firmly bonding to the surface. Because of this, cleaning glass becomes more difficult.

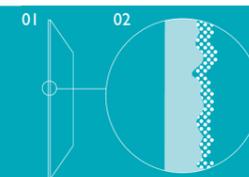
When applied to ordinary glass, ClearShield® cross-links to form a strong chemical bond that gives the glass durable 'non-stick', easy-clean protection, upgrading the glass to ClearShield Eco-Glass® 08. ClearShield® is completely transparent, chemically inert, non-hazardous and UV stable. Unlike a coating, ClearShield® is a unique glass surface treatment that becomes part of the glass so will not peel, discolour or crack. It is also not reliant on sun or rain to perform.

ClearShield Eco-Glass® prevents contaminants from bonding onto its surface and limits further damage caused by corrosion and chemical attack. It performs like new for many years by following the recommended after-care programme.

The ClearShield Eco-System® is easily re-applied when the protection starts to degrade. In this way, protection is provided for the life of the glass.

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- 01 Glass surface
- 02 Magnification of glass surface treated with ClearShield®





The ClearShield Eco-System® is versatile and is applied on interior or exterior glass on a range of buildings, either on-site or in the factory.



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09 Lloyd's of London
10 Grand Hotel Tijuana (after and before)
11 P&O Cruises Britannia

The ClearShield Eco-System® in use

ClearShield Eco-System® on-site applications include glass in residential buildings, shops, offices, hospitals, restaurants, hotels, theme parks, railway stations, airports and ships. Below is a small selection of completed projects (a list of references is available on request).

Lloyd's of London Building 09

The owners of the Lloyd's Building found that paint on the frame around the atrium was shedding and plating onto the glass and was beginning to adhere to the surface. This made cleaning extremely difficult. The glass was successfully renovated and protected with the System. Today, the paint still flakes but thanks to ClearShield® is easily wiped off and conventional cleaning methods are still sufficient to maintain the glass.

"We are very impressed with the System, it has been extremely beneficial to our facilities management operation and we intend to carry on with the aftercare regime."

The Assistant Manager to Lloyd's Building Facilities Manager

Grand Hotel Tijuana 10

The hotel, consisting of two towers, was celebrating its 30th anniversary. Although the interiors were maintained to a high standard, the exterior glass looked opaque and tired. Various glass cleaners, detergents and even abrasive products were tried but all were ineffective. The hotel subsequently found out about the ClearShield Eco-System® and requested a test treatment. Impressed with the results, the System was specified to both of the towers.

"It is our privilege to highly recommend their product and service, we are now proudly celebrating our 30th anniversary with beautiful shining buildings."

Grand Hotel Tijuana Operations Manager

P&O Cruises Britannia 11

This £473m ship is one of many cruise ships treated with the ClearShield Eco-System® over several decades. The upgraded glass provides protection from sea spray and other corrosive elements.

Specialist applicators from Ritec Marine Services in the Netherlands, a subsidiary of Ritec International, travelled to Italy to treat over 14,700m² of glass on board *Britannia*. This included all the windows, sliding doors, cabin glass and other exterior glass. The ship's bridge glass was also treated to enhance visibility and safety, especially in inclement weather.

"We are proud to have firmly established Ritec Marine Services as a key partner of P&O for glass surface treatments. We continue to grow our business with this prestigious customer and this magnificent project continues to reinforce the relationship between the two companies."

Head of Ritec Marine Services, Netherlands



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ClearShield® is manufactured in the UK by Ritec International Ltd an ISO 9001:2015, ISO 14001:2015 Company



Glass and Glazing Federation