PILKINGTON

Pilkington **SaniTise™**

Handling and Processing Guidelines

NSG GROUP

Product description

Pilkington **SaniTise**™ is a glass product with a transparent photocatalytic coating that provides antimicrobial properties and activity against enveloped viruses when exposed to UV. It is a pyrolytic coating with good scratch resistance and durability, and in most glass processing circumstances it can be treated the same as ordinary float glass. It is also available on a grey and green glass substrate, for the additional benefit of solar control. Handling and maintenance instructions are the same for Pilkington **SaniTise**™ Clear, Pilkington **SaniTise**™ OW, Pilkington **SaniTise**™ Grey and Pilkington **SaniTise EverGreen**™.

Pilkington **SaniTise**™ achieves full activity upon exposure to UV light. It can be naturally activated through exposure to daylight, with the activation time being dependent upon glazing construction. Alternatively, it can be used indoors when it is irradiated with artificial UV light, for example at a wavelength of 254 nm. Either UVA or UVC radiation can be used to activate the coating.

Pilkington **SaniTise**™ can be single glazed or incorporated into an insulating glass unit (IGU) with the antimicrobial coating on either of the external surfaces. In a double glazed unit (DGU) typically the coating will be positioned on surface #4, the inner most surface of the inner pane of glass.

Pilkington **SaniTise**™ can be used in almost any application, providing that there is sufficient UV light, including:

- Outdoor monolithic applications such as bus stops;
- External building facades with the Pilkington **SaniTise**™ coating on an outside surface of an IGU, either surface #1 or surface #4 (DGU) or #6 in a triple glazed unit (TGU);
- Transport applications with the Pilkington **SaniTise**™ coating on the inner surface;
- Internal applications such as screens and partitions, when irradiated with artificial UV light.

Pilkington **SaniTise**™ is classified as a Class A coated glass in accordance with EN 1096. It is therefore important that this coated product is handled and processed in accordance with good practice. It must be glazed following NSG Group recommendations to obtain maximum benefit from its unique antimicrobial properties.

Silicone and silicone oils are contaminants and should be kept away from the coated surface throughout the fabrication, installation process, and during any subsequent maintenance.

Handling and Processing

1. Delivery and Storage

There are a number of measures that we have put in place to protect Pilkington **SaniTise**™ during delivery and storage. They are as follows:

- The glass and coated surfaces of stock sheet products are protected with an interleaving material. This helps to prevent moisture staining and abrasions between the individual sheets;
- For additional protection during handling, cover the coated surface with standard plastic wrap. This can be removed immediately after installation to avoid the risk of thermal breakage;
- To ensure adequate protection of the coated surface a range of transport pads have been tested and approved for cut sizes or assembled IGUs, they should be used during storage and transportation;
- Pilkington **SaniTise**™ is generally delivered on stillages in pack quantities, exactly the same as clear glass of similar thickness and size. It can be supplied with the coating facing in or out of the pack;
- When offloading and storing, care should be taken to avoid damage to the coated surface, as well as the edges;
- The glass should be stored in dry conditions, stacked upright and fully supported following normal good practices. For more information, please consult NSG Group.

2. Handling

Suction cups can be used on the coated surface. However, they should be clean, dry, and must not slide on the surface. Always ensure that silicone oil is not present on the suction cup.

Suitable clean glass handling gloves should be used.

The coated surface must not be marked with adhesive labels or wax crayons as subsequent removal may be difficult. If the glass requires some form of identification it should be placed on the non-coated surface. If it is necessary to identify the glass on the coated side, the mark must be at the very edge of the glass, outside of the IGU vision area.

3. Coating Detector

Pilkington **SaniTise**™ coating can be identified using a hand-held detector on the coated surface.

4. Edge Deletion

Pilkington **SaniTise**™ coating is always on the outer surface of an IGU (surface #1 or surface #4 (DGU) or #6 (TGU)) and does not require edge deletion.

5. Cutting

To prevent coating damage from glass particles, we recommend that Pilkington **SaniTise**™ be cut with the coated surface facing up. Care must be taken if straight edges, metal tape measures, cutting bars or cutting sticks are used on this surface.

Wear gloves and aprons to protect the coated surface from contact with belt buckles or metal studs. Care should be taken with watch straps and other jewellery.

Gloves should be clean and checked to ensure that they do not leave prints on the coated surface.

When cutting the glass automatically, cutting wheel pressure and break-out settings will be very similar to those used for float glass. If needed, fast dispersive lubricant should be used. No change in wheel type is required, however wheel life may be shortened, even with hand cutting.

The glass should be processed with the coated surface face up. Therefore, special attention should be paid to any parts of the process which involve contact with the upper surface to ensure that they do not mark the coating.

Hand scoring of the glass on the coated side may feel different to that of float glass.

6. Washing

Pilkington **SaniTise**™ has a hard, durable coating applied to the surface during float glass manufacture. As with any coated glass product, care should be taken while washing to prevent damage. It is essential to ensure that no metal, e.g. cleaning equipment, comes into contact with the coated surface.

7. Machine Washing

There should be no difficulty in machine washing Pilkington **SaniTise**™ using the washer manufacturer's recommended set-up instructions for a given glass thickness.

Ensure adequate water flow through all nozzles and use the recommended water temperatures. Make sure the brushes are in good condition and are set at the correct height and not rotating when the glass is stationary. Ensure air knives and filters are clean.

For best results, the Pilkington **SaniTise**™ surface should be transported through the washer with the coating away from the glass support rollers. This will minimise any contact with the coating that could necessitate further spot cleaning.

Where possible use the washing machine manufacturer's recommended glass cleaning detergent. Final rinsing should be with clean de-ionized water (conductivity: less than 30 µmS/cm) heated to at least 40°C.

Under no circumstances should abrasive cleaners, hydrofluoric acid, fluorine compounds or strong alkalis be used on the coated surface.

8. Washing/Spot Cleaning

Pilkington **SaniTise**™ can be cleaned and maintained by hand. A mild, non-abrasive detergent (i.e. one that does not contain solids in suspension), and water solution is recommended.

Abrasive cleaners must not be used.

To wash the coating, apply the solution to the glass with a clean, soft cloth, sponge or pad and rinse thoroughly with clean water. Dry the glass by wiping with a soft, lint-free cloth. Take care to ensure that no abrasive particles are trapped between the glass and the drying device otherwise coating damage may occur.

Dilute ammonia or alcohol-based window cleaners may be used for spot cleaning. **Steel wool or razor blades must not be used** on the Pilkington **SaniTise**™ surface.

9. Laminating

Standard PVB or EVA interlayers will block the transmission of the majority of UV light and prevent the photocatalytic coating from functioning. Standard PVBs should therefore not be used in combination with Pilkington **SaniTise**™, unless the coated surface is directed towards a UV light source. Specialist PVBs with high UV transmittance can be used with Pilkington **SaniTise**™.

Pilkington **SaniTise**™ is suitable for lamination by either PVB autoclave or cast-in-place processes. To preserve its antimicrobial property, it should be laminated with the coating outward, away from the interlayer.

Laminating processes should not normally damage the Pilkington **SaniTise**™ coating. Avoid excess interlayer material adhering to the coated surface as this may be difficult to remove completely.

Note:
When referring to Pilkington **SaniTise**™ it includes Pilkington **SaniTise**™ Clear, Pilkington **SaniTise**™ OW, Pilkington **SaniTise**™ Grey and Pilkington **SaniTise EverGreen**™.

10. Toughening

Once cut to size, Pilkington **SaniTise**™ can be heat strengthened or toughened. Like float glass, the coating should be washed and dried before carrying out either of these processes.

The coated surface must be visibly clean before entering the heat treatment furnace and should be face up in the furnace to minimise the chance of coating damage. You may process the glass with the coating face down provided furnace rollers are clean and no skidding or sliding of the glass occurs as it is transported through the process. This orientation will be necessary, when a toughened glass is required which has a frit or coating applied to the other glass surface.

The coating should not be put down onto castor rollers. The abrasive scrubbing action of pivoting castors will leave deposit marks that can be difficult to remove.

Do not overheat Pilkington **SaniTise**™ during the heat strengthening or toughening process, as this can damage the coating and destroy its antimicrobial action. Overheating will normally be characterised by excessive distortion in the glass. To eliminate this problem a cooler glass temperature should be used during the process.

The heat strengthening and toughening parameters used for processing Pilkington **SaniTise**™ have similar settings to those used for Pilkington **Optifloat**™ of equivalent thickness.

11. Insulating Glass Units

The uncoated float glass surface of Pilkington **SaniTise**™ is compatible with a range of sealants including hotmelt butyls, polysulphides, polyurethanes and 2-part silicones. Silicone and silicone oils are contaminants and should be kept away from the coated surface throughout the fabrication.

In the event of sealant spillage onto the coated surface, a soft cloth soaked in methylated spirits or acetone should be used to remove the sealant while still wet (any health and safety requirements for using these chemicals should be followed). If sealant is allowed to dry the same method is recommended for its removal, but the task will be more difficult.

Under no circumstances should razor blades, steel wool or abrasives be used.

When assembling the unit, make sure there is no metal contact with the coated surface and once the IGU is complete, ensure the coated surface is protected from mechanical damage such as scratching.

12. Other Processing

Any additional processing steps that introduce shading to an IGU may decrease the exposure of the coating to UV light, and have a detrimental effect on the antimicrobial performance. This includes:

- lead and/or colour overlay, with the antimicrobial coating on surface #1 or #4 (DGU) or #6 (TGU);
- adding components such as Georgian bars within the airspace of the IGU, with the antimicrobial coating on surface #4 (DGU) or #6 (TGU).

If considering the above, we recommend increasing the UV exposure through artificial UV light should be considered.

If the impact of the decreased UV exposure on the antimicrobial performance has been acknowledged and considered, the following points should also be noted:

- Lead and/or colour overlay can generally be applied to the Pilkington **SaniTise**™ coated surface. However, Pilkington **SaniTise**™ will only retain its antimicrobial behaviour on the uncovered surface. Lead should be patinated or treated with **Leadshield**™.
- Take care with any tools used to apply the lead effect or overlay and ensure they do not indelibly mark the coated surface. It is the responsibility of the unit manufacturer to ensure anything applied to the coated surface is compatible with the Pilkington **SaniTise**™ coating and will not have a detrimental effect.
- The appearance of components such as Georgian bars inside the airspace of the IGU may change slightly when viewed through the coating, compared with clear float glass.

13. Appearance

It is the responsibility of the processor to carefully inspect Pilkington **SaniTise**™, both before and after processing. (Glass not rejected by the processor during inspection and prior to processing will be considered acceptable by NSG Group). Glass should be inspected upon delivery. NSG Group will not accept rejection once glass has been processed.

14. Merchanting/Redistribution

When packing Pilkington **SaniTise**™ for transport with the coating exposed, a fine even distribution of powder interleavant or a standard paper interleavant should be used.

When securing to pallets or transit frames, no strapping or other means of retention should come into direct contact with the coated surface.

Note:
When referring to Pilkington **SaniTise**™ it includes Pilkington **SaniTise**™ Clear, Pilkington **SaniTise**™ OW, Pilkington **SaniTise**™ Grey and Pilkington **SaniTise EverGreen**™.

Installation

1. Glazing Locations

Pilkington **SaniTise**™ achieves full activity upon exposure to UV light. Natural daylight is a source of UV light, with UV transmission dependent on variables including:

- orientation, angle of installation, shading,
- latitude, weather,
- time of year, time of day.

Average activation times can be estimated for any particular construction using solar irradiance data for different locations and times of the year. Please contact your local NSG Group representative.

Alternatively, Pilkington **SaniTise**™ can be used indoors when it is irradiated with artificial UV light, for example at a wavelength of 254 nm. Either UVA or UVC radiation can be used to activate the coating.

Glazing with Pilkington **SaniTise**™ under an overhang or in a situation where daylight cannot reach it, may result in insufficient activation for the product to obtain its antimicrobial property.

Pilkington **SaniTise**™ will be most effective when the surface is kept clean and is not overwhelmed with material. Cleaning routines are complimentary to the antimicrobial functionality of Pilkington **SaniTise**™. After cleaning, the coating should be rinsed with clean water to ensure full removal of any cleaning chemicals and residues. It will take period of time, dependent on the UV irradiance on the surface, for the coating to become activated again.

If Pilkington **SaniTise**™ is used on surface #1, the external surface of the outer pane of glass, salt can be naturally deposited on to the coated surface in coastal areas. It can then dry and crystallise. The amount will depend on how close the installation is to the sea, wind direction, weather conditions and the glazing aspect. As salt is inorganic, it is not broken down by the photocatalytic action of Pilkington **SaniTise**™. Although some deposits will be washed away by rainfall, it may not be enough to remove all of them and hosing may be required. During a dry spell or for especially heavy contamination consumers may wish to lightly hose or wash down the glass. This will make Pilkington **SaniTise**™ considerably cleaner than non coated glass in the same circumstances, with the additional benefit of not having to manually dry the glass.

If the installation is in an area of exceptionally hard water (i.e. greater than 180 ppm combined content of calcium carbonate, $CaCO_3$ and magnesium carbonate, $MgCO_3$) then rinsing water should be softened with a domestic water softener or by the addition of detergent (a couple of drops of dishwashing detergent) to a litre of water.

2. Glazing

To differentiate each surface, all insulating glass units are supplied with a NSG Group label applied to the non-Pilkington **SaniTise**™ side. A hand-held detector can also be used to identify the coated side.

When glazing a clean, dry, gasket glazing system or a system that uses non-setting oil-free glazing compounds should be used. The gasket should be of high quality and free of any form of silicone oil lubrication.

The use of silicone oil-containing lubricants on gaskets must not be used. Dry gaskets or those lubricated with glycerine oil or talc can be used as alternatives. However, the Pilkington **SaniTise**™ coating can be expected to break down some oils and lubricants over time.

Silicone sealants can exude oil or plasticisers containing silicones. These materials are very difficult to remove from the glass and Pilkington **SaniTise**™ coating. They are usually only visible when the glass/coating is wet, and even then, they are only noticeable by the different water droplet formation when compared with non-contaminated glass.

Only use glazing sealants that do not leach silicone oils onto the glass or coated surface. For general wet sealing, use the correct grade of sealant and for butt jointing and weather sealing in structural glazing systems, use the recommended alternative non silicone based product.

When glazing into frames do not use glazing tapes that contain oil (e.g. silicone and/or paraffin wax). Putty is compatible with single glazing applications, but it is not an appropriate glazing material for IGUs or laminated glass.

Where the glass is adjacent to new or existing lead flashings, or other sheet lead applications such as cladding or roofing, white carbonate run-off from the lead can stain Pilkington **SaniTise**™ as it would ordinary float glass. Apply patination oil or **Leadshield**™ to both sides of the flashing when it is new, to minimise this effect. **Leadshield**™ is a trademark of British Lead Mills.

It is the installer's responsibility to ensure that the above recommendations are adhered to.

When Pilkington **SaniTise**™ is glazed into a building, care must be taken during any further construction. Protect the coating from site contamination such as welding, rusty deposits, cement, plaster products or adhesives. Care should also be taken to ensure that alkaline leach-out from concrete, etc. does not occur. For advice on remedial action to remove contaminants, please refer to NSG Group datasheets.

After building work is complete, the glass should be cleaned by rinsing with water to remove all traces of dust or abrasives which may have accumulated during construction. Then apply a cleaning solution (a mild detergent and water solution is recommended) onto the coated surface. Gently rub the wetted coated surface with a clean, lint-free towel or cloth and wipe nearly dry. Any moisture remaining on the surface will evaporate to leave a clean surface.

The use of a squeegee on the coated surface is not recommended. If a squeegee is used then particular care must be taken to prevent dirt particles from becoming trapped under the blade and dragged across the coating and also to stop any metal parts from contacting the surface.

3. Repeat Orders, Colour Deviation

Production tolerances can cause slight colour deviations between different batches. These are minimal within a production run. Where glass will have to be supplied over a longer period for the same project, please indicate to the manufacturer so they can minimise colour deviations.

4. Removal of Silicone Contamination

In the case of silicone contamination on the Pilkington **SaniTise**™ surface, attempts to remove any silicone must be regarded as remedial action and no guarantees over the effectiveness of silicone removal can be provided, as this is dependent upon a wide number of factors including amount, time on surface and the nature of the silicone contamination.

In this instance the use of a silicone remover may be able to improve the appearance and performance. However, this is remedial action and no guarantees over the effectiveness of the treatment can be provided.

5. Recycling

Pilkington **SaniTise**™ can be recycled as float glass. Nevertheless, all country regulations should be followed for the disposal of the glass.

6. Customer Information

Ensure all Pilkington **SaniTise**™ customers are provided with the appropriate brochure detailing maintenance and cleaning advice.

CE marking confirms that a product complies with its relevant harmonised European Norm.
The Declaration of Performance for each product, including declared values, can be found at www.pilkington.com/CE

NSG GROUP

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