



Pilkington **Activ SunShade™**
Additional Handling and Processing Guidelines



Pilkington **Activ SunShade™**

In general, Pilkington **Activ SunShade™** is processed as per normal coated glass; however, as this product has a coating on either side of the glass, one of the coated surfaces must face down. Therefore, we have produced the following instructions to help you.

General Product Description

Pilkington **Activ SunShade™** is a durable, toughenable dual coated product which combines self-cleaning and solar control. It must be handled with care, and glazed in accordance with the Pilkington **Activ™** installations guidelines.

Pilkington **Activ SunShade™** incorporates both the Pilkington **Activ™** self-cleaning coating (made on-line) and the neutral or blue solar control coating (added off-line) on a single sheet of glass. The solar control coating is deposited in an off-line vacuum process onto the uncoated face of Pilkington **Activ™**. It is a robust coating classified as a Class B coating in accordance with EN 1096. As such, it exhibits good mechanical and chemical durability during normal processing operations.

It is possible to damage the coatings and care must be taken during processing.

Pilkington **Activ SunShade™** **must be processed with the Pilkington **Activ™** coating face down during processing. The Pilkington **Activ™** coating can be damaged** and should be protected from sources of scratching and abrasion, particularly during the cutting and break-out steps. Similar care should be taken to ensure sources of abrasion do not come into contact with the neutral solar control coating.

The Pilkington **Activ SunShade™** product should always be incorporated into an insulating glass unit and glazed within a drained and ventilated glazing system. When framed with all edges covered, edge stripping of Pilkington **Activ SunShade™** is not required. For application requiring exposed edges, such as stepped or butt-jointed units, the neutral solar control coating should be edge-stripped. The products should be glazed so that the Pilkington **Activ™** coating is positioned on surface 1 (i.e. the outside of the building) and

the solar control coating positioned on surface 2 (i.e. the inner face of the outer pane). Only in this configuration will the maximum benefits from the product's self-cleaning and solar control properties be gained. To maintain these properties it is also important that handling and processing is carried out strictly in accordance with good practices as described later.

Handling & Processing

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Delivery and Storage

- Pilkington **Activ SunShade™** is delivered on stillages in pack quantities and in a manner consistent with that of clear glass of similar thickness and size. It is always delivered with the solar control coated surface to the inside of the pack. Please note that the innermost glass of each pack will be a cover plate, usually 4 mm Pilkington **Optifloat™** (not coated). This is to avoid damage to the coating from pack separators.
- The annealed products are protected by PMMA powder (lucite) interleaved between plates. This absorbs any moisture that may develop in the pack during transportation.
- As with Pilkington **Optifloat™**, Pilkington **Activ SunShade™** should be unloaded and stored in dry and well-ventilated conditions, stacked upright and fully supported following good practice. The glass should be stood on edge strips of wood, felt or other relatively soft material. Please remember that the coated surfaces can be damaged so care is necessary when unloading glass packs to ensure that plates in the pack do not move.
- Pilkington **Activ SunShade™** **has a recommended storage shelf-life of 6 months** from date of delivery provided adequate storage conditions are met. As a general guide, it is recommended that packs are stored with relative humidity not exceeding 70%, nor should the room temperature be allowed to fall below 15°C.
- Before using a pack during cold weather, time should be allowed for the pack to acclimatise

to the ambient temperature. This will help avoid condensation and potential damage to the coated sheets.

- The solar control properties of Pilkington **Activ SunShade™** mean that a certain amount of solar energy is absorbed by the coating which could result in thermal stresses through heating of the glass. Although the stresses are frequently lower than the critical level, care should be taken to store the glass away from direct sunlight.

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Coating Detection

- The two coated faces can be differentiated using the latest version of the handheld Pilkington **Activ™** detector to identify the Pilkington **Activ™** coating.

- When manual handling is required clean cotton or cloth glass-handling gloves should be worn to prevent fingerprints and provide hand protection. Wherever possible, the sheets should be handled at the edges. When unloading or transporting individual cut size sheets or off-cuts, foam and cork pads or paper interleaving should be used to prevent damage to the coating (although this isn't necessary between cutting and edge working). It is generally recommended that 'harp rack' type storage and transport is not utilised for dual coated glass due to the increased risk of scratching one or both of the coated faces.
- Wax crayons or inks of any kind should not be used to mark either of the coated surfaces. Adhesive labels can be applied to the Pilkington **Activ™** surface provided a suitable low-tack adhesive is used. Alternatively, apply identification marks to the edge-deleted region of the neutral solar control surface.

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Handling

- As Pilkington **Activ SunShade™** is dual coated, some additional precautions are necessary when handling it. Wherever possible, individual plates should be moved using automatic equipment fitted with **suction cups or equivalent in contact with the Pilkington Activ™ side only.**
- Suction cups used on the Pilkington **Activ™** coated surface must be clean, dry, in good condition and should not slide on the surface. More frequent sucker inspection and maintenance may be required to maintain good condition. The use of 'hair net' type sucker covers is also recommended (although these should comply with local Health & Safety guidelines). Care should also be taken to ensure that any sucker release compressed air supply is adequately filtered to remove traces of oil. If necessary, suction cups can be used on the neutral solar control coated surface. It is recommended that 'hair net' type covers are used at all times and are replaced at regular intervals.

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Edge Stripping

- Edge stripping of the neutral solar control surface is not required for applications where all edges of the unit will be covered.
- For applications involving an exposed edge, such as stepped units or butt-jointed systems, edge stripping of the neutral solar control surface is required. The edge stripping process can be undertaken on-line or off-line. The off-line process is normally carried out using a 130 grade dry wheel, pressure of 21-26 N, and edge stripping width of 10 mm. However, it may be necessary for processors to make adjustments to their own equipment to ensure effective coating removal.
- The Pilkington **Activ™** coating is always glazed as surface 1 and does not require edge stripping.

Note:

When referencing Pilkington **Activ SunShade™** this includes Pilkington **Activ SunShade™** Blue, and Pilkington **Activ SunShade™** Neutral.

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Cutting

- Pilkington **Activ SunShade™** must be loaded onto the cutting table with the solar control coated surface uppermost, and should be cut in this position only. As the Pilkington **Activ™** coated surface will be face down during transport, cutting and break-out stages, extra care must be taken to ensure that potential sources of scratching are removed during these stages. Prior to cutting Pilkington **Activ SunShade™**, the cutting and break-out tables should be cleaned to ensure they are free of glass shards which might damage the Pilkington **Activ™** surface. It is recommended that a vacuum cleaner is used although thorough brushing of the table may be adequate. The table should also be monitored during cutting to ensure that glass shards do not build up as the plates are cut. Transport rollers and belts should also be well maintained and free from sources of metallic abrasion.
- As the neutral and blue solar control coating will be face up, automatic cutting is the preferred option. In instances where edge stripping is required, it is recommended that this occurs at the same time as cutting. If manual cutting is used then care must be taken with straight edges, metal tape measures, cutting bars or cutting sticks when placing them on to the coated surface, as some marking or scratching will inevitably occur. During break-out, top surface positioning or snapping wheels should not come into contact with the coating.
- A dry wheel cut is preferred for scoring the glass prior to break-out. However, a minimal amount of water-soluble cutting lubricant with a fast evaporation rate may also be used. Cutting oil should also be employed if excess splintering is observed during scoring. This will reduce glass shard accumulation on the cutting table. When cutting the glass automatically, cutting wheel pressure and break-out settings will be very similar to those used for float glass. Cutting wheel life, even with hand cutting, may be shortened but no change in wheel type is required.
- Operators should wear appropriate glass-handling gloves and aprons to protect the coated surface from contact with belt buckles

or metal studs and care should be taken with watch straps or other jewellery. Gloves should be clean and checked to ensure that they do not leave prints on the coated surface.

- Wooden or plastic break-out bars are the preferred option. If metal bars are employed the glass should be carefully examined after break-out for signs of metallic abrasion.
- When unloading or transporting cut glass the original interleavant powder will continue to provide protection. If there is some loss of interleavant powder, cork pads or paper interleaving should be used.

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Machine Washing

- As with any coated glass product, care should be taken while washing to prevent damage to the Pilkington **Activ SunShade™** coated surfaces. It is essential to ensure that no metal, e.g. cleaning equipment, comes into contact with either coated surface. The following recommendations are given for machine, hand and spot cleaning of Pilkington **Activ SunShade™**.
- Pilkington **Activ SunShade™** should be washed using a vertical or horizontal multi-stage automatic washer employing soft brush rollers with a bristle diameter of no greater than 0.15 mm. There should be no difficulty in machine washing Pilkington **Activ SunShade™** using the washer manufacturer's recommended set-up instructions for a given glass thickness. This includes adequate water flow through all nozzles, using recommended water temperatures, brushes set at the correct height and not rotating when the glass is stationary and clean air knives and filters.
- Water quality is important for washing of all coated products. Hot (40-55°C) de-mineralised water should be used with no additives (detergents) in the water. It is essential that the water quality indicated is achieved at all process stages and equipment is maintained to manufacturer recommendations. It is recommended that the pre- and initial rinse stages should be maintained at a specific conductivity of no greater than 30 µS/cm. The final rinse should be with deionised water with a specific conductivity not exceeding 10 µS/cm. However, the glass processor should determine an acceptable level for his specific process.

- The glass should pass through the washer with the neutral solar control coating uppermost and away from the transport rollers. The washing machine should be designed so that if the conveyor stops with glass under the brushes, then those brushes stop rotating, otherwise coating damage will occur.
- Irrespective of measured water quality, it is important that all washers are subjected to a regular programme of routine maintenance in accordance with manufacturer's recommendations. This should include regular examination and maintenance of the transport system to remove potential sources of damage to the Pilkington **Activ™** coating.
- If a vertical washing machine is used, all of the requirements described above also apply. In addition, entry and exit brushes and flaps and internal drive or guide rollers may need modifying or re-setting.
- Under no circumstances should abrasive cleaners, hydrofluoric acid, fluorine compounds or strong alkalis be used on the coated surface.
- After washing, the glass should be appropriately racked and separated with cork pads in readiness for transit between process stages.

Hand Washing / Spot Cleaning

- Both coated faces of the Pilkington **Activ SunShade™** product can be cleaned by hand to remove spot contamination. 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/clean the coatings apply the solution to the glass with a clean, soft cloth, sponge or pad and rinse thoroughly with clean water. It is recommended that plates are then passed through an automatic washing machine after hand cleaning to ensure proper drying of the surfaces.
- Steel wool or razor blades must not be used on either of the coated faces.

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Edge Working

- **Glass must be presented to the edge working process with the neutral or blue solar control coated face uppermost.**
Automatic transport and edge working of

Pilkington **Activ SunShade™** is preferred, particularly horizontal diamond wheel grinding systems or vertically loaded automatic cross-belt arissing using proprietary equipment. Water lubrication both before and after grinding is highly beneficial with either method.

- The coated glass must be transported through the process in such a way that drive belts have no (or minimal) contact with the coating. If unavoidable, this contact should only be within 10 mm of the glass edge.
- If the glass cannot be processed by one of the fully automated systems described above then it is possible to cross belt ariss the glass. However, wet belts will have to be used in order to minimise both surface damage and contamination to the coatings. Rinsing the coated surface after arissing will also be beneficial.
- The coated glass must not be permitted to stop under any drive belts, wheels, or rollers during the edge working stage. Otherwise the coating may be damaged.
- Usual precautions for glass processing should be taken; gloves should be worn during edge working to avoid contamination by fingerprints.
- Ensure general maintenance of the equipment is carried out. Water tanks should be emptied and cleaned regularly (at least once a week) to reduce risks of glass powder build-up. Transport and transfer belts should be kept clean. Transport systems through the edging equipment, particularly castor rollers, should also be maintained to ensure there are no worn areas that may damage the Pilkington **Activ™** coating.
- After edging, glass should be processed immediately through the washing machine and, if further processing is required, but will not be carried out immediately, wash and dry the panes so that deposits of glass powder do not dry on the glass surfaces.
- After any edge working process, the glass should immediately be racked, separating panes by either cork pads at the top corners and an air space at the bottom, and/or clean, vertically positioned cardboard spacers.
- It is suggested that after edge-working, the glass panes are always visually checked for damage.

Note:

When referencing Pilkington **Activ SunShade™** this includes Pilkington **Activ SunShade™** Blue, and Pilkington **Activ SunShade™** Neutral.

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Toughening

- Pilkington **Activ SunShade™**, can be thermally toughened after it has been cut to size. However, before carrying out this process, the coating should be washed and dried. As with most coated products convection furnaces are preferred but not essential.
- When handling the glass, clean cotton or cloth gloves should be used to prevent contaminating the coating surface with hand or fingerprints, which could be burnt into the surface during these processes. The coated surface must be visibly clean before entering the heat treatment furnace.
- **The neutral or blue solar control coating should be face up in the furnace to minimise the chance of coating damage.** It is important to ensure that furnace rollers are clean and no skidding or sliding of the glass occurs which may cause marking of the Pilkington **Activ™** surface. Extra care should be taken when the coated surface is placed against castor rollers as these can frequently be worn unevenly and can leave deposit marks that can be difficult to remove.
- Because different toughening furnaces have differing operating conditions, it is recommended that processors establish those conditions most suited to their own plant as with any 'new' product. It is recommended that furnace conditions normally used to thermally toughen Pilkington **Activ™** are used as a starting point. It may then be necessary to make slight changes to the toughening conditions. The flatness, shape, fragmentation and stress should be regularly checked after toughening according to the required local standards.
- Care must be taken not to overheat Pilkington **Activ™** during the heat strengthening or toughening process, as this can damage the coating and reduce its self-cleaning 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. Please note that it is difficult to measure the glass temperature of a coated product by using a pyrometer on the coated (uppermost) surface. Shape, fracture and appearance of the coating should

be regularly checked rather than relying on measured glass temperatures.

- Immediately after toughening, glass should be racked appropriately, using cork pads where necessary.
- Since correct toughening only slightly affects the optical properties, energy transmission and absorption characteristics of the coating in comparison to annealed glass, both annealed glass and toughened glass may be used on the same façade with no visible compatibility problems.

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Insulating Glass Units

- **During fabrication of insulating glass units the Pilkington Activ™ coating should be face down against the transport mechanism.** Again, care should be taken to ensure that the unit fabrication line is in good clean working order to prevent damage to the Pilkington **Activ™** surface. Transport rollers should be examined for signs of ageing and excessive hardening and to ensure no metallic contact is made against the coated surface. The press region of the line should also be inspected regularly and any areas of glass contact cleaned thoroughly.
- During assembly the spacer bar is placed on the first glass as normal. This first glass will have the Pilkington **Activ™** coating facing into the rollers so that it is on the outside of the finished IGU. The second glass is positioned on the spacer bar and pressed. The IGU is completed by filling the edge with sealant. Most conventional sealants including Hot Melt Butyls, Polysulphides, Urethanes and Silicones can be used, as is the case for clear glass. Units can be gas filled as normal with no effect on the coating. Suitable sealants and drying agents should be used in accordance with the general recommendations for the particular gas used. When assembling the unit make sure contact with the neutral solar control coated surface is kept to a minimum. Metallic contact should especially be avoided.
- Units can be sealed using either automatic or manual sealant application. In both cases it is recommended that contact be made to the uncoated float pane of the unit.

If this is not possible and contact must be made to the Pilkington **Activ™** surface, then clean rubber contact suckers should be used. These should be inspected and cleaned regularly and the use of 'hair net' type sucker covers is recommended. Care should also be taken to ensure that any sucker release compressed air supply is adequately filtered to remove traces of oil.

- In the event of sealant spillage onto the Pilkington **Activ™** 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.
- Once the insulating glass unit is made, care should be taken to ensure the Pilkington **Activ™** coated surface is protected from mechanical damage such as scratching, particularly from metallic sources.
- It is recommended that any unit identification labels should be attached to the non-coated float pane. Should this not be possible then labels can be attached to the Pilkington **Activ™** coating provided a suitable low tack adhesive is used. Wax crayons or inks should not be used on the coated surface.

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Other Processing

- Adding other components, such as Georgian Bars, inside the airspace of the insulating glass unit will not affect the solar control coating. However, the appearance (colour) of these components may be changed slightly when viewed from outside, through the coating, compared with clear float glass.

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Appearance

- Glass should be inspected upon delivery. It is the responsibility of the processor to carefully inspect both the Pilkington **Activ™** coating

and the neutral solar control coating before and after processing (glass not rejected by the processor during inspection and prior to processing will be considered acceptable by Pilkington). Pilkington will not accept rejection once the glass has been processed.

- No attempt should be made to remove scratches and/or abrasion marks on the Pilkington **Activ™** coating as coating damage will occur.

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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 for a project over a longer period, it should be indicated to the manufacturer to ensure that colour deviations are minimised.

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Glazing

- Once assembled into an IGU, please ensure glazing guidelines for Pilkington **Activ™** are followed (see separate guidelines). **In particular, avoidance of contact with silicone which can mask the self-cleaning performance.**

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Product Range

- **Stock**
Pilkington **Activ SunShade™** is available in annealed form in jumbo and LES (3210 mm x 2250 mm) in 4 mm and 6 mm thicknesses.
- **Toughened**
The Pilkington **Activ SunShade™** product can be toughened by processors, following the guidelines detailed in section 10.

This publication provides only a general description of the products. Further, more detailed, information may be obtained from your local supplier of Pilkington products. It is the responsibility of the user to ensure that the use of these products is appropriate for any particular application and that such use complies with all relevant legislation, standards, codes of practice and other requirements. To the fullest extent permitted by applicable laws, Nippon Sheet Glass Co. Ltd. and its subsidiary companies disclaim all liability for any error in or omission from this publication and for all consequences of relying on it. Pilkington and "Activ", "SunShade", "Optifloat", are trademarks owned by Nippon Sheet Glass Co. Ltd, or a subsidiary thereof.

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



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