



Pilkington **K Glass™ N**
Handling and Processing Guidelines

Pilkington **K Glass™** N

1. Product Description

Pilkington **K Glass™** N is a hard, on-line coated, neutral-coloured, low emissivity glass which provides improved thermal insulation to glazed windows. It has excellent scratch resistance and durability and in most circumstances can be treated the same as uncoated glass. However, it is still important that its handling and processing is carried out in accordance with good glass and glazing practices.

2. Product Range

Pilkington **K Glass™** N is available in a maximum pane size 6000 mm × 3210 mm and a nominal thickness of 3, 4, and 6 mm. Pilkington **Optilam K Glass™** N is also available in thickness 6.4 mm and upwards.

3. Delivery & Storage

Glass should be stored in dry conditions, stacked upright (between 3 and 6 degrees) and fully supported in a manner which prevents the glass from deflecting or toppling. It should be stood on edge strips of wood, felt or other relatively soft materials.

The glass is a coated product and should be treated as such. Care should be taken whilst offloading and during storage to avoid marking the surface.

Like other Pilkington glass products, the glass surfaces are protected with an interleaving material that resists moisture staining and abrasions between the individual panes.

Pilkington **K Glass™** N is generally delivered on stillages in pack quantities and in a manner consistent with that of clear glass of similar thickness and size. It is presented with its coated surface outermost. This is identified by a single, low-tack adhesive label (specially designed to minimise contact with the coated surface) applied to the extreme edge of the outermost plate of each pack.

When delivered in endcap sizes, the coated surface is also identified on the outside of the package.

4. Coating Detector

The Pilkington **K Glass™** N coating and its presence in insulating glass units can be identified using a simple hand-held detector, available from: Bohle UK is Unit 7 Fifth Avenue, Tameside Park Ind Est, Dukinfield SK16 4PP, tel: +44 161 342 1100.

It is recommended that, when fitting insulating glass units incorporating Pilkington **K Glass™** N, installers should demonstrate to the client both the presence and position of the coated surface, using the appropriate detection device.

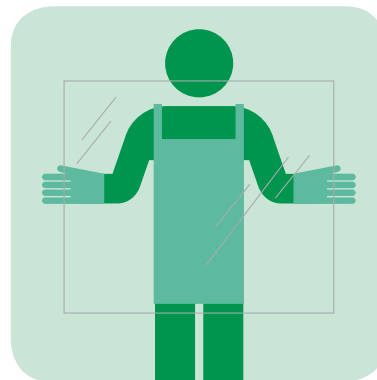
5. Handling

The coated surface is hard and not easily damaged so no particular precautions are necessary in unloading.

However, because the coated surface is microscopically textured, it should not be marked with adhesive labels or wax crayons, nor should suction cups or metal objects be dragged across the surface. (Suction cups can be used on the coated surface, but these must be in good clean condition).

Whilst these actions will not damage the coating, any material deposited as a consequence may subsequently prove difficult to remove. Therefore, any form of identification should always be on the uncoated surface.

It is recommended that a risk assessment is undertaken to identify the hazards to people during handling. Always use the correct personal protection equipment when handling glass including eye protection, safety footwear, cut-resistant apron, cuffs and gloves.



6. Merchenting/Redistribution

When packing Pilkington **K Glass™** N for transport with the coating exposed, a fine even distribution of interleavants, or alternatively a standard paper interleavants, should be used.

When securing to pallets or transit frames, ensure that the strapping or other means of retention does not come into direct contact with the coated surface.

7. Edge Stripping

Edge stripping is not required for Pilkington **K Glass™** N.

8. Cutting

The glass should be cut with the coated surface facing up. Care must be taken if straight edges, metal tape measures, cutting bars or cutting sticks are placed on this top surface, as metal marking may occur (see Washing).

Operators should wear 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. Contact with metal can result in metal deposits on the coating.

Cutting wheel pressures and break-out settings on automatic cutting machines will be very similar for uncoated glass, and if lubricant is used this should be of a water soluble type.

When cutting on the coated surface, either automatically or by hand, wheel life may be somewhat shorter, but no change in wheel type is needed from those used with uncoated glass of the same thickness. However, scoring may feel slightly different when cutting on the coated surface by hand. As the glass should be processed coated surface up, special attention should be paid to any parts of the process which involve contact with the upper surface (e.g. the method of tracking the score) to ensure that they do not mark the glass.

Gloves should be clean and any rubber-type gloves should be checked to ensure that they do not leave prints on the coated surface.

9. Washing

Pilkington **K Glass™** N has a hard, durable coating applied to one surface during manufacture. However, as with any coated glass product, care should be taken while washing to prevent damage to the coating. The following recommendations for washing Pilkington **K Glass™** N apply to machine washing, hand cleaning, and spot cleaning.

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

Machine Washing

Remove labels before washing the glass. Standard multi-stage automatic washing machines, using hot water and detergents such as those for uncoated glass, are also suitable for the washing of Pilkington **K Glass™** N, provided they are cleaned and maintained in accordance with the manufacturers recommendations. Cleaning can be further improved by pre-spraying the glass with a glass cleaning fluid. The glass must be passed through the washing machine so that the coated surface is not against the rollers.

Hand Washing/Spot Cleaning

When hand cleaning, we recommend the use of standard glass cleaners (except those containing solids in suspension), together with a lint-free towel, either paper or cloth.

Abrasive cleaners should not be used as they can cause bright or dark spots which may only be seen under certain lighting conditions. Using a standard glass cleaner will remove marks made by plastics and acrylics.

For organic deposits which may have been abraded onto the coated surface, use the appropriate solvent.



Do not use a razor blade, wire wool or any other metal item to remove stubborn marks. These will leave metal particles on the coating that appear as scratches. Where this occurs inadvertently, these marks may be removed using weak solutions of acids. However, this should be regarded as an extraordinary remedial action, requiring particular advice and taking account of any health and safety issues.

10. Laminating

Pilkington **K Glass™** N is suitable for lamination by either PVB autoclave or cast-in-place processes. In either case it must be laminated with the coating outboard, away from the interlayer, to preserve its low emissivity property.

The Pilkington **K Glass**[™] N coating will not normally be damaged by either laminating process. However, care should be taken to avoid excess interlayer material adhering to the coated surface, as this may be difficult to remove completely (see Washing).

Use separators in the autoclave that do not leave residue or mark the surface of the glass.

11. Toughening

Pilkington **K Glass**[™] N is usually toughened with its coated surface uppermost and with its short edge leading into the furnace.

Toughening furnaces of different manufacture and different furnace models from the same manufacturer will have differing heating/quenching regimes. Therefore, it is recommended that processors consult their furnace manufacturers to establish those conditions for toughening which are most suited to their particular plant and to maintaining the properties of Pilkington **K Glass**[™] N. In general, lower rather than higher furnace temperatures and a longer heating cycle will produce satisfactory results. If furnace balance is available then an increase over that used for clear float should be beneficial.

12. Insulating Glass Units

To date Pilkington **K Glass**[™] N has been tested and found to be compatible with a range of sealants, including Hot Melt Butyls, Polysulphides, Urethanes and Two Part Silicones.

There is no requirement for edge-stripping. However, it is important to confirm that the glass is effectively cleaned and that full sealant adhesion is developed to the coated surface. The responsibility for this rests wholly with the unit manufacturer.

In any case, do not allow aluminium or steel spacers to drag across the coated surface when assembling the units, otherwise a metal deposit will be left on the coating (see Washing).

The coated surface should usually face the cavity of a double glazing unit and ideally be glass Surface 3 (counting from the outside), in order to maximise passive solar gain in winter and also to ensure uniform external appearance of units glazed adjacent to one another.

However, the U value of similarly constructed double glazing units, each incorporating one pane of Pilkington **K Glass**[™] N, is the same regardless of whether the coated glass is positioned as the inner or outer pane.

Pilkington **K Glass**[™] N may be incorporated as the outer glass of a double glazing unit, whilst incorporating a Pilkington Texture Glass as the inner pane, without detriment to the thermal insulation properties of the unit. Any discernible difference in external appearance which may otherwise occur as a result of incorporating Pilkington **K Glass**[™] N as the outer pane will be nullified as a consequence of the Pilkington Texture Glass inner pane.

For improved thermal insulation, it is possible to combine Pilkington **K Glass**[™] N (coating on Surface 4) in a double glazing unit with Pilkington **Suncool**[™] (coating on Surface 2). The unit can achieve a U_g value of 0.9 W/m²K. For further information on the use of the Pilkington **K Glass**[™] N Range in Surface 4 applications, please visit our website www.pilkington.com/global

Secondary Glazing

Whilst the most effective use of Pilkington **K Glass**[™] N is in hermetically sealed double glazing units, this does not preclude its use in secondary glazing – provided the coated surface is glazed to the cavity.

With secondary glazing it is not possible to achieve a peripheral seal which will totally exclude entry of moist air to the glazed cavity – particularly as the secondary sash is repeatedly opened or removed and replaced for maintenance/cleaning (see Washing).

There may be some occasions therefore, when the moisture from such air will be precipitated in the form of condensation on the cavity glass surfaces of the secondary glazing construction, temporarily affecting emissivity and U value for the period it is present on the coated surface.

Whilst measures such as ventilating the glazed cavity to the outside may be taken to minimise the likelihood of this, they are imprecise and therefore their effectiveness in any particular case may be difficult to predict.

The Pilkington **K Glass**[™] N coating and its presence in insulating glass units should be identified by the application of a sticker to the appropriate unit surface at the time of manufacture.

13. Appearance

It is the responsibility of the fabricator to carefully inspect Pilkington **K Glass**[™] N, both before and after fabrication. Glass not rejected by the fabricator during inspection prior to fabrication will be considered acceptable by NSG Group.

Pilkington **K Glass**[™] N is classified as a Class A coated glass in accordance with EN 1096-2 : Glass in building – Coated glass – Part 2: Requirements and test methods for class A, B and S coatings.

14. Transportation & Storage of Insulating Glass Units

Care should be taken with the manufactured insulating glass unit to ensure adequate protection of the coated surface. Spacers or interleaving material should be used during storage and transport. The coated surface should also be covered with standard plastic wrap if additional protection is required.

The edges of the glass should not be damaged during transportation, storage and installation.

15. Repeat Orders, Colour Deviation

Production tolerances can cause slight colour deviations between different batches. These are minimal within a production run. In the case where glass for a project will have to be supplied over a longer period this has to be indicated to the manufacturer to ensure that the colour deviations are as minimal as possible.

16. Leading and Coloured Overlay

Where possible lead and/or colour overlay should be applied to the other glass in a double glazing unit even if this means that the Pilkington **K Glass**[™] N coated surface will be on Surface 2. However, if lead and/or colour overlay is to be applied to the Pilkington **K Glass**[™] N coated surface (where this is considered necessary for the manufacture of a coloured decorative leaded unit, incorporating both Pilkington **K Glass**[™] N and a Pilkington Texture Glass), it will reduce the insulating effect of the Pilkington **K Glass**[™] N coated surface in relation to the proportion of its surface covered by the lead and/or coloured overlay. Care must be taken that any tools used to apply the lead effect or overlay do not indelibly mark the coated surface.

It is the responsibility of the unit manufacturer to ensure that lead and/or coloured overlay to be applied to any surface of an insulating glass unit is compatible with that surface and will not have any detrimental effect upon the surface, or any other component used in the manufacture of the unit.

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, "K Glass" and "Optilam" are trademarks owned by Nippon Sheet Glass Co. Ltd, or a subsidiary thereof.



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



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