



### **1. Product description**

Pilkington **K Glass™** A 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 should be remembered that Pilkington **K Glass™** A is a comparatively high-value product and therefore, it is all the more important that its handling and processing is carried out in accordance with good glass and glazing practices.

In appropriate frames, Pilkington **K Glass™** A can help windows meet the requirements of building regulations in the UK, for example Part L1B in England and Section 6 (Energy) of the Technical Handbook in Scotland. In addition, Pilkington **K Glass™** A can help windows to achieve Window Energy Rating band A (dependent upon frame).

### **2. Product range**

Pilkington **K Glass™** A is available on a clear float substrate in 4 mm and 6 mm with a maximum pane size of 6000 mm × 3210 mm.

### **3. Delivery & storage**

Glass should be stored in dry conditions, stacked upright (between 3 and 6 degrees) and fully supported to prevent the glass from deflecting or toppling. It should be stood on edge strips of wood, felt or other relatively soft materials. Care should be taken whilst offloading and during storage to avoid marking on the coated surface.

Pilkington **K Glass™** A surface is protected with an interleavable material that resists moisture staining and abrasions between the individual panes. It is generally delivered on stillages in pack quantities and in a manner consistent with that of clear glass of similar thickness and size.

Pilkington **K Glass™** A is presented with its coated surface outermost, 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™** A coating and its presence in Insulating Glass Units (IGU) can be identified using a hand-held detector, available from:

Bohle Ltd, 5th Avenue,  
Tameside Industrial Park, Dukinfield, Cheshire,  
SK16 4PP, tel: 0161 342 1100.  
([www.bohle-group.com](http://www.bohle-group.com))

We recommend that when fitting IGUs incorporating Pilkington **K Glass™** A, 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.

As the coated surface is microscopically textured, it should not be marked with adhesive labels or wax crayons since any material deposited may subsequently prove difficult to remove. We recommend any form of identification should always be on the uncoated surface.

Suction cups may be used on the coated surface, but they must be in good, clean condition. Suction cups or metal objects should not be dragged across the surface.

We recommend 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™** A 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 any other means of retention does not come into direct contact with the coated surface.

## **7. Edge deletion**

Edge deletion is not required for Pilkington **K Glass™** A.

## **8. Cutting**

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 the top of the coated surface, as metal marking may occur (see Washing).

Contact with metal can result in metal deposits on the coating, therefore we recommend operators wear clean gloves and aprons to protect the coated surface from belt buckles or metal studs. Care should also be taken with watch straps or other jewellery and the coated surface. 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. Lubricant if used should be water soluble.

When cutting on the coated surface, either automatically or by hand, wheel life may be somewhat shorter, but no change in wheel type is required from those used with uncoated glass of the same thickness. Scoring, however, 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™** A has a hard, durable coating applied to one surface during manufacture. 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™** A 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™** A, 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 since 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. After Pilkington **K Glass**<sup>™</sup> A has been cleaned it may be considered a reasonable precaution for operatives to wear clear cotton safety gloves during further handling prior to unit assembly.

### **10. Laminating**

Pilkington **K Glass**<sup>™</sup> A 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 properties.

Pilkington **K Glass**<sup>™</sup> A 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).

We recommend the use of separators in the autoclave that do not leave residue or mark the surface of the glass.

### **11. Toughening**

Pilkington **K Glass**<sup>™</sup> A can be toughened with the coated surface uppermost or in contact with the furnace rollers. For best results in both orientations, we recommend that the short edge should lead into the furnace.

When toughening Pilkington **K Glass**<sup>™</sup> A with the coated surface in contact with the furnace rollers, in order to avoid overheating which could damage the coating, we recommend that the heating convection is switched off and both the temperatures and heating times are reduced. When toughening with the coated surface down we recommend that furnace rollers are cleaned regularly and free of contaminants.

Furnace settings used to toughen uncoated glass such as Pilkington **Optifloat**<sup>™</sup> Clear (of the equivalent thickness) can often be used when toughening Pilkington **K Glass**<sup>™</sup> A in this orientation. Convection should not be used and further temperature or heating time reductions may be required to obtain the optimum optical quality and avoid overheating. Toughening furnaces from different manufacturers and different furnace models from the same manufacturer will have differing heating/quenching regimes. Individual furnace manufacturers should be consulted to advise of the optimum conditions prior to toughening.

In general, lower rather than higher furnace temperatures and a longer heating cycle will produce satisfactory results. If furnace convection is available then an increase over that used for clear uncoated glass should be beneficial when toughening with the coating uppermost.

## 12. Insulating Glass Units

To date Pilkington **K Glass™** Range 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-deletion, 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.

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 face the cavity of an IGU 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.

The U value of similarly constructed IGUs, each incorporating one pane of Pilkington **K Glass™** A, is the same regardless of whether the coated glass is positioned as the inner or outer pane.

Pilkington **K Glass™** A may be incorporated as the outer glass of an IGU, 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™** A 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™** A (coating on Surface 4) in a double glazing unit with Pilkington **Optitherm™** S1 Plus (coating on Surface 2). The unit is branded as Pilkington **energiKare™** Advantage and can achieve a U value of 0.9 W/m<sup>2</sup>K. For further information on the use of the Pilkington **K Glass™** Range in Surface 4 applications, please consult the Pilkington **energiKare™** Advantage 'Cleaning Guidelines' or visit our website [www.pilkington.co.uk](http://www.pilkington.co.uk)

### Secondary glazing

Whilst the most effective use of Pilkington **K Glass™** A is in hermetically sealed double and triple IGUs, this does not preclude its use in secondary glazing.

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 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.

We do not recommend the use of Pilkington **K Glass™** A in single glazing applications in colder climates.

The Pilkington **K Glass™** A coating and its presence in IGUs should be identified by the application of a label to the appropriate unit surface at the time of manufacture. Labels are available by emailing [pilkington@respond.uk.com](mailto:pilkington@respond.uk.com) or calling our customer contact centre on 01744 692000. Alternatively they can be requested via **My Pilkington™**.

### **13. Appearance**

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

Pilkington **K Glass™** A is classified as a Class A coated glass in accordance with BS EN 1096-1 'Glass in building – Coated glass'.

### **14. Transportation & storage of IGUs**

Care should be taken with the manufactured IGU 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. For projects where glass has to be supplied over a longer period, this should be indicated to the manufacturer to ensure that colour deviation is minimised.

### **16. Leading and coloured overlay**

Where possible lead and/or colour overlay should be applied to the other glass in an IGU even if this means that the Pilkington **K Glass™** A coated surface will be on surface 2.

If lead and/or colour overlay is applied to the Pilkington **K Glass™** A coated surface (where this is considered necessary for the manufacture of a coloured decorative leaded unit, incorporating both Pilkington **K Glass™** A and a Pilkington Texture Glass), it will reduce the insulating effect of the Pilkington **K Glass™** A 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 applied to any surface of an IGU 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.

### **17. Glazing**

IGUs incorporating Pilkington **K Glass™** A should be glazed in accordance with BS 8000: 1990: 'Workmanship on building sites – Part 7. Code of practice for glazing' and BS 6262: 1982, current issue of the Glass and Glazing Federation Data Sheet 4.2 (System Description and Glazing Considerations for Insulating Glass Units) and appropriate glazing material manufacturer's technical specifications.



This publication provides general guidance as to best practice with regard to the handling, processing and glazing of Pilkington K Glass™ A. It does not however constitute any representation or warranty with respect to the product, its performance or its suitability for any application. Pilkington United Kingdom Limited hereby disclaim all liability howsoever arising from any error in or omission from this publication and for all consequences of relying on it. Pilkington, "K Glass", "Optifloat", "Optitherm" and "energiKare" are trademarks of the Pilkington Group.



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The Declaration of Performance for each product, including declared values, can be found at [www.pilkington.com/CE](http://www.pilkington.com/CE)



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