



Pilkington **Optitherm**[™]

1. Product description

Pilkington **Optitherm**[™] is a range of off-line coated, neutral-coloured, low-emissivity products that provide high thermal insulation when used as a component glass in Insulating Glass Units.

Pilkington **Optitherm**[™] meets the requirements of the European Standard EN1096-3 Class C 'Glass in building – Coated glass'.

Pilkington **Optitherm**[™] can only be used in Insulating Glass Units. The coating for Pilkington **Optitherm**[™] should normally be on glass surface #3 (counting from the outside). The coated surface of Pilkington **Optitherm**[™] can be identified by using a coating detector near the edge of the glass.

As off-line coatings can be easily damaged if not handled correctly it is important that handling and processing is carried out in accordance with good practice, as described throughout these guidelines.

2. Product range

The Pilkington **Optitherm**[™] range offers a variety of performance options and is available on various substrates. Please contact your local sales representative for more information.

3. Delivery and storage

Pilkington **Optitherm**[™] is normally arranged on stillages so that the uncoated surface of each sheet faces outwards. The orientation of the glass should be checked when unpacking.

The last sheet in a pack is 4 mm Pilkington **Optifloat**[™] Clear which serves to protect the coated sheets. For coated laminated glass, the last sheet in a pack is normally an uncoated Pilkington **Optilam**[™] of 6.4 mm thickness. All sheets are separated with an interleaving powder.

Pilkington **Optitherm**[™] must be unloaded and stored in dry and well-ventilated conditions, stacked upright and fully supported in a safe manner. The glass should be stood on edge strips of wood, felt or other relatively soft material, and care should be taken when unloading glass packs to ensure that plates in the pack do not move.

Pilkington **Optitherm**[™] has a storage shelf-life of six months from the date of delivery provided adequate storage conditions are met. Packs should be stored where the relative humidity does not exceed 70% and the ambient temperature does not fall below 15°C.

Significant temperature fluctuations during storage, that may lead to condensation should be avoided. Delivered packs should be allowed to acclimatise before opening, to help avoid condensation and potential damage to the coating.

Toughened cut sizes

Storage of delivered toughened cut-sizes of Pilkington **Optitherm**[™] should not exceed three weeks. These products will be supplied wrapped in a protective sealed plastic sheet with desiccant bags inside. Do not remove the protective wrapping until immediately before the sheets are to be used.

4. Handling

Since the coated surface can be damaged if not handled correctly, precautions are necessary when unloading glass packs to ensure no movement of the sheets in the pack.

Individual sheets should be moved using automatic equipment capable of lifting plates with clean suction cups on the glass side only.

No labels or markings should be applied on the coated side of the glass.

When handling the glass, clean dry glass handling gloves must be worn at all times to avoid leaving fingerprints or otherwise contaminating the surface. Operators should be aware that any contact with hard materials is likely to result in damage to the coated surface.

If marks are present on the coating after handling, careful attempts can be made to remove them using a solvent such as IPA and a soft clean tissue.

During processing, cut sizes should be handled at the edges, where the coating has been or will be edge deleted. For large pieces, sucker frames fitted with clean covers may have to be used on the coated surface where there is no alternative.

When internally transporting cut sizes, a wide range of separating pads, clean, non-alkaline paper or cardboard strips may be used to prevent transit damage to the coating. Separating pads should only be applied around the very edges of the glass.

5. Cutting

Sheets of Pilkington **Optitherm**[™] must be loaded onto the cutting table with the coated surface uppermost. Automatic cutting is the preferred option using a quick evaporating cutting oil. When breaking out glass sheets, care should be taken so that the coating is not damaged. Fine glass splinters on the glass surface should be removed carefully.

Immediately after cutting, a sufficient amount of the original interleavant powder often remains in place to protect adjacent glasses from damaging the coating, nevertheless we recommend that cut sizes are separated by cork pads or other suitable separation materials.

6. Edge deletion

Prior to manufacturing Pilkington **Optitherm**[™] sheets into Insulating Glass Units, the coating must be edge deleted to ensure good adhesion of the unit seal. The edge deletion process is ideally undertaken on-line (when cutting). The width of the edge deletion depends on the depth of the Insulating Glass Unit seal.

7. Washing

Before assembly into Insulating Glass Units, Pilkington **Optitherm**[™] should be washed through a multi-stage automatic washer using heated, demineralised, neutral pH water and soft cylindrical brushes. The brush fibre diameter should be no greater than 0.15 mm. A pre-rinse before entering the washing machine is advantageous.

Initial and intermediate washing stages should preferably use deionised water, heated to a maximum of 40°C and with specific conductivity $\leq 30 \mu\text{S/cm}$. Fresh deionised water with specific conductivity $\leq 10 \mu\text{S/cm}$ should be used at the final wash stage.

The washing machine should be designed so that the conveyor never stops with glass underneath the washing brushes, otherwise coating damage may occur. When using washing machines that were not initially designed for coated glass there may be a need to modify, raise or remove brush sections, barriers and internal drive rollers.

Washing is a critical part of the process and therefore careful attention should be given to regular maintenance routines and adjustments. Detergents should not be used in the water.

8. Insulating Glass Units

Before Insulating Glass Unit assembly, Pilkington **Optitherm**[™] should be handled and washed according to the methods and criteria described in sections 4 and 7.

The coated surface of Pilkington **Optitherm**[™] should always face the cavity of an Insulating Glass Unit and normally be on glass surface #3 (counting from the outside). To achieve better thermal insulation, the cavity in the Insulating Glass Units can be filled with an inert gas such as argon.

Suitable sealants and dessicants should be used in accordance with manufacturers recommendations. The adhesion of most sealants, including hot melt butyls, polysulphides, urethanes and two part silicones will be as expected for clear uncoated glass when applied to the edge deleted portions of the coated glass.

Appropriately designed racks should be used for the safe transportation of Insulating Glass Units incorporating Pilkington **Optitherm**[™]. The Insulating Glass Units should be separated by cork pads or other suitable separation materials to prevent transport damage.

Insulating Glass Units must not be stored in direct sunlight or rain. If stored outside, the stack should always be covered with an appropriate opaque wrap to prevent breakage of glass due to overheating and water damage.

Care should be taken to avoid damage to the glass edges during transportation, storage and installation. Insulating Glass Units incorporating Pilkington **Optitherm**[™] should be glazed in accordance with National Standards or Codes of Practice.

9. Overview of processing times



10. Appearance

A customer inspection should be performed on receipt of a delivery and any defects must be reported immediately. Claims for defects identified after processing cannot be accepted since it is the responsibility of the customer to carefully inspect Pilkington **Optitherm**™ during each processing stage. In the case of any claims, both samples and the batch number of the affected glass will be required.

Production tolerances can cause slight colour deviations between different batches. These are minimal within a production run. For projects where the coated glass has to be supplied over a longer period and therefore several coating runs, this should be indicated to the manufacturer to ensure that colour deviation is minimised.

These processing guidelines refer to the use of our coated glass products in a standard insulating glass process.

In the case of any other treatment of coated glass products, e.g. lamination, heat strengthening, toughening, processing of toughened or heat strengthened glass to insulating glass units, or where surface modifications are made to coated glass, it may be necessary to perform further processing steps.

Any such further processing that is used is solely the responsibility of the respective processors. We are unable to specify standard parameters for the systems of any third-party processors. We therefore strongly recommend that you carry out production tests in order to determine suitable settings for the respective production facilities for processing the coated glass products.

Should it be necessary to transport processed coated glass plates for insulating glass units production (e.g. to another manufacturing facility), we recommend using suitable packaging materials and glass spacers such as "Fleece".

If required, we will gladly assist you.

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, "Optitherm" and "Optifloat" 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



Pilkington Group Limited

European Technical Centre

Hall Lane – Lathom Nr Ormskirk L40 5UF – United Kingdom

marketing.communications@nsg.com

www.pilkington.com

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