

Technical Information Sheet 4

Low 'E' Glass

OVERVIEW

Low 'E' glass's are a group of glass products that are used in the manufacture of insulated glass units and are designed to meet the governments requirements on energy savings. There are two main types of Low 'E' glass, Hardcoat and Softcoat. Essentially both of these products aim to offer the same benefits for energy saving, but generally softcoat glass's offer superior performance to hardcoat products, however softcoat products are more difficult to handle and process. These products are designed for use only in insulated glass units, and if they are installed as single glazed they offer no energy benefits at all.

HARDCOAT LOW 'E' GLASS

These products are coated with a combination of various metal oxides which enhance the glass's ability to reflect radiant heat, thereby retaining warmth in a building. The nature of this type of coating means that it is permanently bonded to the glass surface and is impossible to remove, making the glass very easy to handle and process as there is very little difference between the way this is handled in comparison to normal float glass. These products are toughenable as a safety option, and some are also available in laminated versions. Examples of hardcoat products are Pilkington 'K', Pilkington KOW & Planibel A.

SOFTCOAT LOW 'E' GLASS

These products are also coated with a combination of various metallic oxides to enhance their ability to reflect long wave energy back into a room, however the coating is not bonded to the glass surface and as such this can make handling and processing very difficult. The coating itself is very soft, and any contact with the coating (such as with a bare hand or an ordinary glass glove) will mark the coating permanently. The glass can only be handled either using special gloves or very specialised equipment in order to avoid damaging the coating. The glass must also be edge deleted (have the soft coat removed around the edge on a specialised machine) before being made into insulated glass units. Also glass washing machines have to be adapted with special soft coat brushes in order to avoid damaging the delicate coated surface. Again these products are toughenable and some are available in a laminated form for safety reasons. Examples of softcoat products are Pilkington KS, Planitherm Total +, & Climaguard A+.

PERFORMANCE

Both hardcoat and softcoat products offer huge benefits in energy savings when compared to standard float glass's in insulated glass units. They offer much improved 'U' values, and although coated products can appear slightly tinted the light transmission of these units can be as little as 2 – 3% lower than a standard float unit, making such differences virtually invisible to the naked eye. However due to the coating, you may notice slight distortions in reflections on the coated surface.

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INSULATED GLASS UNIT MAKE UPS

The table below lists some example make ups available from N&C Glass along with their associated 'U' values, light transmissions and solar heat gain :

Unit Make Up – Double Glazed	Centre Pane U-Value W/m2k	Light Transmission	Solar Heat Gain (G-Value)	Indicative WER Rating *
4mm Climaguard A+ / 16mm spacer / 4mm Float	1.4	80%	71%	D/C
4mm Climaguard A+ / 16mm spacer & Argon / 4mm Float	1.2	80%	71%	B
4mm Climaguard A+ / 16mm spacer & Argon / 4mm Low Iron	1.2	82%	73%	A
4mm K / 16mm spacer / 4mm Float	1.7	75%	73%	N/A
4mm K / 16mm spacer & Argon / 4mm Low Iron	1.5	76%	78%	B/A
4mm KOW / 16mm spacer / 4mm Float	1.7	77%	74%	D/C
4mm KOW / 16mm spacer & Argon / 4mm Low Iron	1.5	78%	79%	A
4mm Planibel A / 16mm spacer & Argon / 4mm Float	1.4	72%	73%	B
4mm Planibel A / 16mm spacer & Argon / 4mm Low Iron	1.4	74%	78%	A
4mm Float / 16mm spacer / 4mm Float	2.7	82%	79%	N/A

This table shows just a few example make ups, for clarification on other make ups, please contact N&C Glass. *Please note indicative WER ratings are with warm edge spacer – please obtain the correct information from your system or trade frame supplier.

TRIPLE GLAZED UNITS

For even better performance, N&C Glass can also offer triple glazed units incorporating either hardcoat or softcoat glass's. With the correct make ups, U Values as low as 0.5 W/m2k can be achieved, meaning huge savings on energy bills. The following table shows some examples of high performance triple glazed units incorporating softcoat Low 'E' glass:

Unit Make Up – Triple Glazed	Centre Pane U-Value W/m2k	Light Transmission	Solar Heat Gain (G-Value)	Indicative WER Rating
4mm Float / 12mm Argon / 4mm Softcoat / 12mm Argon / 4mm Softcoat	0.8	74%	61%	A+
4mm Float / 12mm Krypton / 4mm Softcoat / 12mm Krypton / 4mm Softcoat	0.5	74%	61%	A+

For more information or details on other triple glazed make ups, please contact N&C Glass. Please note indicative WER ratings are with warm edge spacer - please obtain the correct information from your system or trade frame supplier.

ECO LITE SLIM UNITS

N&C Glass also offer a range of slim profile units incorporating softcoat glass's for use in the restoration of sash windows where building regulations will not permit the windows to be replaced with modern Upvc frames. These units are available in two types offering good U-Values and reduced sight lines meaning that they offer a true solution for the window restoration market. More information on this range is available from N&C Glass.

Unit Make Up – Ecolite Slim	Centre Pane U-Value W/m2k	Light Transmission	Solar Heat Gain (G-Value)
4mm Climaguard A+ / 4mm Krypton / 4mm Float	1.9	82%	70%
4mm Climaguard A+ / 4mm Special Gas / 4mm Float	1.6	82%	70%
4mm Climaguard A+ / 4mm Xenon / 4mm Float	1.5	82%	70%

Eco-Lite™ Slim units can offer sight lines as low as 5.5mm, for more information please contact N&C Glass.

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