



security engineering

Established in the UK for more than 40 years, Apex services many major global companies and organisations as a glazed fire systems designer, manufacturer and supplier.

Apex have built up an enviable reputation within the construction and glazing industries for products of the highest quality and workmanship.

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security glazing

## APEX DOUBLETHERM GLAZING SYSTEM

An efficient and cost effective glazing solution for all situations

# DOUBLETHERM

There are many instances when the thermal insulation of a building could be improved by replacing the existing windows but this is not practical either due to the excessive cost or heritage reasons.

A system which utilises the existing windows and single glazed glass and transforms them to sealed double glazed windows could prove to be an ideal solution. Such a system is the Apex Doubletherm system, which has been tried and tested successfully for many years in the colder Scandinavian climate.

The Doubletherm system was developed in Sweden 20 years ago and is now used all over Scandinavia in houses, offices and government buildings – with a great deal of success. This unique system bonds an additional glass to an existing window pane using a patented technique.

This process will form a conventional double glazed unit using the existing window glass at your location, just like one normally produced in a factory. This makes the Doubletherm system extremely suitable for achieving double glazing at locations where original frames cannot be replaced, such as Listed Buildings, or where the replacement of existing window frames is prohibitively expensive but it is still a requirement to save energy or reduce noise.

This system is equally suitable for use on wooden or steel windows. The Doubletherm system can be used for different purposes to improve the environment of a building.



## WHY CHOOSE DOUBLETHERM GLAZING?

### ADVANTAGES OF THE DOUBLETHERM SYSTEM

In summary, the Doubletherm system is quick to install, clean and very cost-effective when compared with replacing existing windows and frames. It reduces energy usage in buildings by increasing the thermal efficiency of the windows.

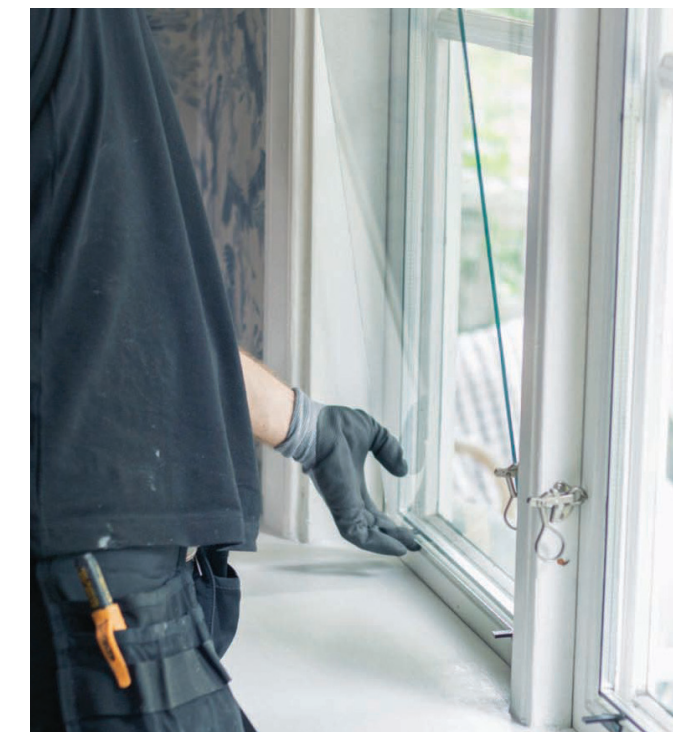
- Good thermal and noise insulation achieved, substantially lowering overall U values, meaning huge reductions in carbon emissions
- Existing windows are transformed into sealed double glazed unit, retaining the existing frames
- Low cost of installation compared with replacing a whole window and frame to install new double glazing
- Installation takes place from the inside, and is not influenced by the weather. There is also no need for scaffolding or ladders
- No disturbance to internal decorative finishes
- Only 45 minutes' installation time per window
- Installation is a 'silent' operation, therefore normal activities can continue
- Guaranteed for 10 years
- Payback period typically less than 5 years
- External appearance of building preserved
- Eliminates asbestos disturbance in old putty
- No land fill for old frames or glass

### WHERE TO USE THE DOUBLETHERM SYSTEM

The Apex Doubletherm system can be used on most existing single glazed wooden or steel windows.

It is ideal for maintaining the external appearance of a building with heritage windows, but is also suitable for most commercial and residential type properties.

We can advise suitability if we are sent some images of the existing window.





# TRADITIONAL SINGLE TO DOUBLE GLAZING INSTALLATION



# DOUBLETHERM INSTALLATION

Thermal spacer frame,  
fitted internally.



We will visit your site and take the measurements of the existing window frames. The details will be processed by the factory where the metal spacer frame and new window glass will be produced.

For thermal insulation, special 4mm Low E energy glass will be used. For noise insulation, 6.4mm or 8.8mm acoustic laminated glass is used.

The existing window is thoroughly cleaned. The new window pane is then bonded to the inside of the existing glass using our patented method to ensure condensation will not form between the panes.

Finally, trims will be added to complete the installation.





# SAVE ENERGY

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Save energy by insulating windows to reduce heat loss in winter. The Doubletherm system has been independently tested at Glasgow Caledonian University in partnership with English Heritage, who tested similar 1930's steel window frames.

The results showed a reduction in U values to  $1.6\text{Wm}^{-2}\text{K}^{-1}$ , resulting in greatly increased thermal efficiency. This compares with a U value of around  $5.8\text{Wm}^{-2}\text{K}^{-1}$  for a typical single glazed window.

You can save even more energy by using Low E coated glass for the new window, to reflect heat from the outside. In summer, about 50% of the sun's warmth can be reflected back outside the building.

# NOISE INSULATION

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Since there are many different spacers (from 6mm to 24mm), it is possible to leave different voids between the two windows. It is also possible to choose from different thicknesses of glass.

All of this means the problem of external noise can be reduced dramatically.

The Doubletherm methodology is ideal for transforming single glazing but can also be used on existing double glazing, to triple glaze a window, thus reducing noise still further and keeping external noises outside.

Patent: Grundels, Sweden No. 006068951

