http://www.doubleglazing.com/

DOUBLE GLAZING

Things you need to know before buying double glazing

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How To Use This Zero Stress Guide

If you're planning to change your windows or doors you need to be aware of your legal obligation to meet certain standards in the government's Building Regulations. In particular, energy efficiency is something that needs a lot of attention and dictates which installations you can have in your home.

With plenty of other factors to take into account too, it is necessary to be equipped with the information you need, which is why this guide will be a useful reference point. It not only gives you the background to the demands of the Building Regulations but also details the benefits of double glazing as well as guiding you through the various design options. We advise you on everything from what to look for in a supplier to how to care for your windows.

There are warnings of pitfalls to avoid and bookmarks to websites that will provide more detail on aspects of the project in which you are especially interested. In short, we invite you to benefit from our expertise and make the whole experience as straightforward as possible. Of course, no project is 100% stress-free but if you follow our advice you'll come as close to it as humanly possible. Furthermore, get it right and you can look forward to enjoying the benefits of your double glazing for many years to come.

10 Things You Need To Know Before You Buy A Double Glazing

1. Double glazing is subject to strict Building Regulations – make sure you adhere to them

2. Safety, security and energy conservation will be enhanced

3. Your chosen style should complement and enhance your property

4. Cheaper prices often come at the expense of fewer opening windows

5. Check whether PVCu windows are fully welded or if parts of it are mechanically fixed

6. Get up to four quotes before taking a decision and check suppliers' guarantees

7. Secondary glazing is a cheaper and equally efficient option for sound insulation

8. Double glazing will cut energy bills by around 10-12% annually

9. Check whether windows have any special 'easy escape' or 'fire escape' features.
Special hinges can be fitted to help with this but are not usually standard items and increase the cost

10. DIY is an option – but only for the competent and confident.

So You're Thinking About Replacing Windows?

There are many reasons for changing your windows and/or doors and, unless you get it drastically wrong – either by choosing a style that is unsympathetic to your home or by doing it 'on the cheap' and ending up with an inferior product – you will improve the look and increase the value of your property.

Existing windows and doors need repair
When old, timber-framed windows are suffering from rot it is often more-cost-effective in the long run to replace them rather than paying out for regular patching, filling and repainting.

To improve the appearance of your home replacing shabby, old-fashioned windows and doors with new styles and shapes will significantly change and improve the look of your home and give it 'kerb appeal'.

To improve security
Burglary is on the increase and doors and windows are a common entry point. Many PVCu window systems incorporate extra security features including special locks to protect your home.

For better protection from the elements
If your curtains flutter in the breeze, you get a chill from window draughts or rain leaks in and around your windows it not only detracts from your comfort but also leaves the fabric of your home open to weather damage.

To reduce noise pollution
If you live on a busy road where traffic noise is an irritation, the installation of double-glazed windows will significantly decrease the amount of noise transmitted through your windows.

For increased energy efficiency
The latest double glazed windows offer much better insulation than conventional single glazed windows. This helps to retain heat so you can turn down the heating a degree or two and save on fuel bills without compromising your comfort.

TOP TIP:
Look for extra security features including special locks

PVCu is the low maintenance option

Benefits Of Double Glazing

Whatever your particular reason for wanting to install double glazing you will enjoy the following benefits:

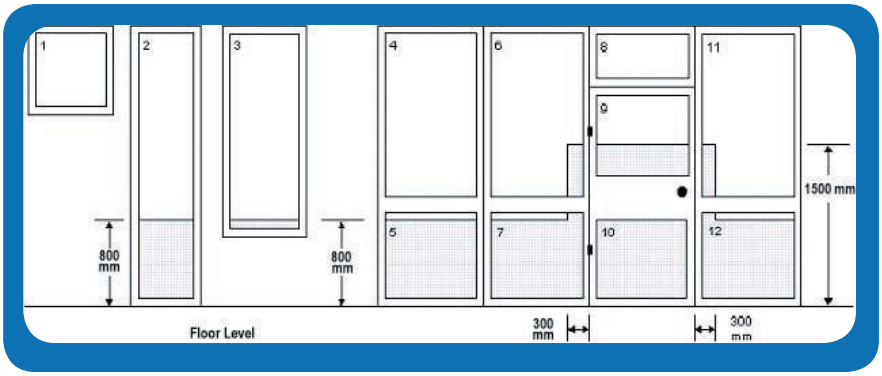
Safety
Traditional single pane windows are made from a single sheet of regular glass. When this is hit it is likely to shatter into long, sharp, dangerous shards. Double glazing, on the other hand, offers a greater degree of safety on breaking – a fact that is especially important for families with young children.

It is possible to further improve the of the double glazing by using security glass, toughened glass or shatterproof glass. Indeed, UK law on low-level glazing applications in so-called 'critical locations' stipulates this.

The legal requirements (BS 6206) apply to all domestic glazing installations whether new build, replacement or refurbishment.

Such critical locations include:
- Doors – any glazing or part of glazing in a door, which is between the finished floor level and a height of 1500mm above the floor level
- Side panels to doors – and glazing or part of glazing, which is within 300mm of either side of a door edge and which is between the finished floor level and a height of 1500mm above the floor level
- Windows, partitions and walls – any glazing or part of glazing, which is
between the finished floor level and a height of 800mm above the floor level.

In the diagram only glazing units Nos. 1, 4 and 8 fall wholly outside the 'critical location' and need not comply with BS 6206.



Energy conservation
Modern homes can lose as much as 25% of their heat through the windows. The installation of low-emissivity glass (Low-E) allows the sun's heat and light to pass through the glass into the building, but blocks heat from leaving the room, thereby considerably reducing heat loss. This not only leads to savings on energy bills but also to maintaining a higher temperature within the home. Sitting by a large, double glazed picture window is a great deal more comfortable on a cold winter night.

Benefits Of Double Glazing

Double glazing can drastically change the appearance of the home but it doesn't have to spoil it. If you are involved in a restoration, a good, reputable contractor will work with you to find a product that will complement and enhance the architecture of the property.

Security
The window frames and locking systems on double glazed windows make it a great deal harder for intruders to gain entry to your home – an important consideration in these days of increased crime rates.

Secondary glazing
Internal secondary double glazing can be a cost-effective solution if the main window is essentially sound and in good condition but there is a requirement to improve thermal and/or noise insulation.

Secondary glazing is manufactured from slim, unobtrusive white enamelled aluminium profiles, usually with single glazing. Double lazing is also available for specialist applications. These units replicate the design of, and are installed inside the main, or primary, window.

TOP TIP:
Double glazed windows have frames and locking systems designed for ultimate security

The product range includes:

- Vertical sliders for sash windows, with a tilting and removable sash facility for ease of cleaning
- Horizontal sliders with removable sashes for 'picture' type casement windows
- Hinged units for narrow casements, doors and French doors or windows. Sashes can be lifted off
- Lift-out units for use when only occasional access is required to the main window
- Fixed units, usually only used to insulate glass panels within doors.

Secondary double glazing is suitable for all conservation areas and, subject to listing detail, listed buildings.

Please see:
www.windowstoday.co.uk/secondary_glazing.htm

Triple glazing
Triple glazing introduces an additional pane of glass into the unit. This gives even greater sound and heat insulation so is extremely practical for those who live in a built-up area, near a busy road or close to anything that causes significant sound pollution. There will also be greater energy savings from triple glazing although the cost is typically 20 – 40% more than double glazing. Generally speaking there are not many suppliers of triple glazing in the UK.

Replacement Windows Building Regulations

Thanks to world-wide agreements to reduce energy consumption, there are now strict regulations covering replacement windows.

All replacement window installations in England and Wales are subject to Document L of Building Regulations which affect, in particular, the minimum levels of insulation that replacement windows must have when fitted in the home. These levels of insulation are measured as U values. The lower the U value, the better the insulation level. In future what was in the past referred to as 'normal' double-glazing - i.e. two pieces of glass separated by a spacer bar – is very unlikely to conform to building regulations. To get the required level of insulation it is almost certain some sort of Low E glass (typically Pilkington K in the UK – although there are other brands) will have to be used. It may also be necessary for the sealed double glazed units to be gas-filled (probably Argon).

FENSA self-certification scheme
With so many replacement windows being installed it was agreed that the industry could adopt a self-assessment method for administering the many thousands of window installations that are now subject to Building Regulations. What this means is that it is not always necessary for a building control officer to inspect each installation or for companies to make separate Building Regulations applications.

TOP TIP:
The lower the U value, the better the insulation

A contractor registered with the FENSA (Fenestration Self-Assessment) self-certification scheme is approved to carry out the work in accordance with relevant regulations without inspection by the council and will inform FENSA when installation has been completed.

Random inspections of completed work are carried out
If you are not using a FENSA registered contractor or if you are doing the work yourself then you will need to arrange for building regulation approval. This will mean that you must be able to confirm that you have met a number of criteria. You will be responsible for paying for the Building Regulations application and should check with your local council for costs. The time taken to obtain approval will depend on the local authority concerned.

In addition to Building Regulation consent you must ascertain whether or not planning permission or conservation area consent is required. Your local council can advise you on this.

For further details see
www.doubleglazing-uk.co.uk/

Replacement Windows Building Regulations

Scotland's Building Standard Part J requires an even higher performance level from windows than that specified in England and Wales. Replacement windows and doors in Scottish homes are expected to achieve U values 10% lower than those in England and Wales, which means a difference of 0.2 of a U value. Soft coat Low-e glass with a 16mm cavity containing an inert gas will be necessary in most cases.

This means that in most existing dwellings, replacement windows will need to have a U value of not more than:
- 1.8 for windows made of plastic or wood
- 2.0 for windows with metal frames

Windows also need to comply with all other appropriate aspects of the technical standards to the Scottish Building Regulations – e.g. emergency escape, safe-cleaning, safety glass and ventilation.

More information is available at:
www.scotland.gov.uk/ResourceDoc/217736/0095436.pdf

Selling your home
When you sell your property, surveyors will ask for evidence that any replacement glazing installed after April 2002 complies with the new Building Regulations. There are two ways in which you can prove compliance:
- A certificate showing that the work has been done by an installer who is registered under a FENSA, CERTASS Limited or the British Standards Institution self-certification scheme

or

- A certificate from the local authority saying that the installation has approval under the Building Regulations.

If there is any doubt, a glass analysis gauge can be used to establish whether or not the correct glass has been used.

Note that this only applies when windows have been replaced – original windows are not subject to this scrutiny.

Also see: www.windowstoday.co.uk/fensa1.htm

TOP TIP:
Proof of compliance is required when you sell your home

Replacement Windows Building Regulations

The Kyoto Protocol signed at the earth summit in Japan resulted in the British Government, among many others, signing up to reduce carbon dioxide emissions to pre-1990 levels. The British government is committed to achieving this and to continue to reduce emissions which cause global warming. One of the ways in which to achieve these targets is by insulating homes to reduce their energy requirements.

It is estimated that domestic properties use about 25% of the energy consumed in the UK. In recent years the Building Regulations have had a new section called Section L or Document L covering the conservation of fuel and power. Every few years Document L is reviewed and the conservation requirements are increased.

The impact on housing is significant. A few years ago Building Regulations required all houses to be built with double glazing and limited the window areas. Anyone wanting large windows had to take appropriate measures such as fitting Pilkington K into them. As the Document L screw is tightened, a whole series of changes affecting cavity wall insulation, loft space insulation and floor insulation are being introduced.

Exceptions to new Doc L

- Conservatories are exempt provided they are separated from the rest of the building (for example by doors) or they are unheated
- Historic buildings are merely expected to 'achieve the best they can' although any improvement in thermal efficiency is welcomed
- Broken sealed units can be replaced 'like for like' (the regulations apply to the entire window replacement)

TOP TIP:
Broken sealed units can be replaced 'like for like'

Energy Saving Recommended Scheme
Currently, manufacturers/organisations voluntarily submit their windows for energy efficiency accreditation. This is now very important to the organisations as consumers are more aware of energy saving products and this is continuously increasing with many people so much more conscious of the financial and environmental benefits.

The Energy Saving Trust supports the British Fenestration Rating Council's (BFRC) domestic window energy rating scheme (WER) by accrediting any window rated 'band-C' or above, helping consumers to readily compare the energy efficiency of competing products using a recognisable mark/grade for everyone to understand.

The BFRC's WER scheme is based on the whole window. The higher the BFRC rating indicates a more thermally efficient window. The window is given a rating of A-G BFRC bands of the window energy label. It is this band that provides the basis for energy saving recommended certification. So it's very important for organisations to ensure their products are assessed and manufactured to the highest grade.

Also please see: www.windowstoday.co.uk/energy-saving-windows.htm

Maintenance

Everything lasts better if it is well looked after and given the right kind of TLC. Double glazing is no different – an annual 'spring clean' will keep your windows in good working order.

While PVCu and aluminium frames are virtually maintenance-free they do need a little attention as outlined below:

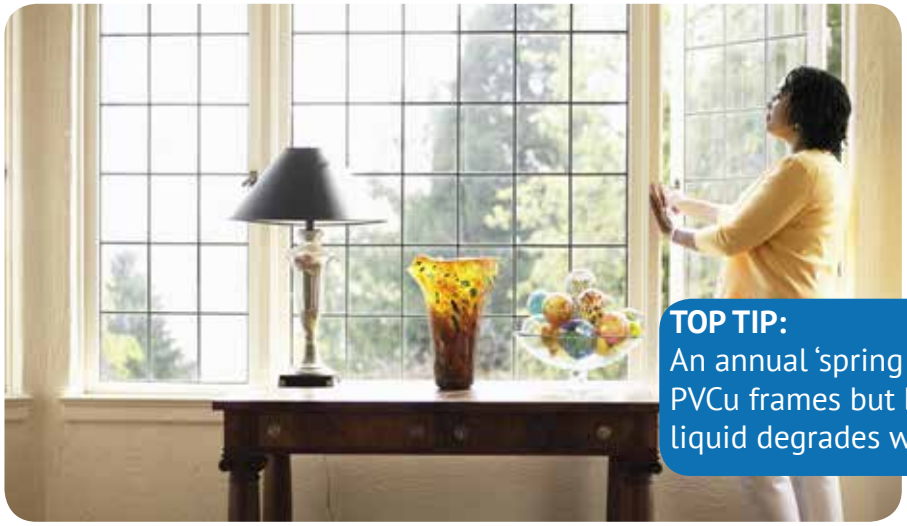
- Conservatories are exempt provided they are separated from the rest of the building (for example by doors) or they are unheated
- Hinges and mechanical parts such as locks will need an annual clean and light lubrication
- Do not use oil to lubricate squeaky hinges (or any nylon moving parts), use a furniture aerosol wax spray instead, which contains silicon
- Never use washing-up liquid in the water when cleaning your windows as it attacks and degrades the seals. Use a special cream cleanser to wipe down white PVCu (no abrasives should be used on wood grain), following the instructions on the container
- Keep sliding patio door tracks brushed clean of mud, grit and dust but do not lubricate the track
- Make sure there is a key in each room for undoing security-locking windows in the event of an emergency.
- Timber frames will need re-painting every three to five years or, if you are using hardwood, oil or varnish as appropriate.

- Silver aluminium can be cleaned with Solvol Autosol aluminium polish, available from motor accessory shops.

Touch up damaged white aluminium with Humbrol white paint

Scratches on double-glazed sealed units are bad news and can be dealt with by:
- Filling in the scratch in with a resin (try the kits sold in motor accessory shops to deal with windscreen scratches) that has the same refractive index as the glass, so the scratch no longer shows.
- Polishing the scratch out with a very fine abrasive such as Ceria (cerium oxide) or jeweller's rouge (iron oxide). Never use products like Brasso Duraglit or any kind of abrasive papers.
- If all else fails, replace the sealed unit.

www.thewindowman.co.uk/maintenance.htm



TOP TIP:
An annual 'spring clean' maintains PVCu frames but beware, washing up liquid degrades window seals

Buyer's Guide

Replacing windows on your property can change its visual appearance considerably. It's important to select a style that matches your property and enhances its looks, especially when fitting PVCu and aluminium designs to older properties. It often helps to look at similar, neighbouring properties to compare the effect of various replacement window types.

Planning permission is usually only required in the case of listed buildings and conservation areas or if, for example, you are converting a flat window into a bow or bay window. If in doubt, check with the planning department of your local authority.

Ensure that you will have an adequate number of opening windows. Some salesmen offer designs with very few openings. The simpler the design and the fewer the openings, the cheaper the windows will be. But the cost might end up higher than you think as inferior windows can turn out to be a bad investment and even lower the value of the property. It is not uncommon for potential property buyers to negotiate a reduced price on these grounds.

When buying PVCu windows you should enquire whether the windows are fully welded or whether some parts (transoms/midrails) are mechanically fixed. Mechanical fixing is generally a cheaper way of manufacturing and it is possible with wear and tear, especially on doors, that the mechanical (screw) fixing will split apart, weakening the frames and reducing performance.

While mechanical fixing is not necessarily a bad thing – especially if done correctly – preference should be given to fully welded structures, particularly if all other elements, such as price and quality of supplier, are similar. The only exception to this might be for wood grain-style PVCu frames when a mechanical fixing can look neater – especially with regard to how the 'grain' finish on the PVCu frames 'runs'. Your potential supplier can give you a detailed explanation of this.

When choosing your windows, look for the energy saving recommended logo. Like electrical equipment, window products are assessed on a rating of A to G, A being the most efficient. The assessment is based on the whole window, not just the glass or seals, and the grades are issued by the British Fenestration Ratings Council.

TOP TIP:
Choose a style to compliment your home and always check energy ratings

Buyer's Guide

Fitting double glazing in replacement windows will provide some insulation from noise. However if your primary motivation for fitting double glazing is to reduce sound then secondary glazing, in which a new single glazed frame is fitted in front of the existing (prime) window frame, will be more effective. The greater the gap between the two panes, the better the sound insulation.

It is prudent to enquire about the type of locks and security features being fitted to your windows and doors. Most modern double glazed replacement windows feature multi-point, espagnolette-type locking, which will also lock partially open in a 'night vent' position. It may be possible to upgrade to shoot-bolt locking or SAC bolt locks for additional security. Options for doors include the 'Entry Guard', a type of security chain that allows you to partially open the door and view visitors. Always enquire what comes as standard and what upgrades are available – it is often the case that for a little extra cost you can have a substantially better locking system.

There is much debate about internally beaded windows versus externally beaded windows on PVCu units. If the beads holding in the glass are on the inside of the window it will be more difficult for a burglar to remove the glass and enter your home. However, some suppliers of externally beaded windows will fit special glazing gaskets and double-sided tape to the frame and sealed unit in order to improve the security – some claim this elevates the security levels to those associated with internal beading. Always ask if the windows have any special 'easy escape' or 'fire escape' features. Special hinges can be fitted to help with this but these are not usually standard items and will increase the cost. Don't be tempted to skimp on this, though, as compromising on safety features is a false economy.

Finally, ask your supplier who will be responsible for 'making good' around the new frames when they are fitted. Most suppliers will include this as part of their work - but you should check.

www.bfrc.org

TOP TIP:
Make sure to enquire about security upgrades

Buyer's Guide

There are plenty of choices when it comes to finding a supplier – from large national companies that woo you with TV advertising to small local companies with a lower profile. There are good and not-so-good companies in both categories.

Before you make a decision, visit showrooms, research all of the alternatives in terms of product and style and get at least three estimates. As always, ask around among friends and relatives to seek recommendations. Look out, too, for installations being carried out in your neighbourhood and watch the progress – once the work is done you could visit the house and ask the owners what their impressions of the windows and installers are. Remember that any type of building work can throw up unforeseen problems – if this was the case, did the supplier rise to the challenge and sort it out quickly and effectively?

Another option is to look on a website like Quotatis that lists suppliers who have been monitored and vetted. Customer comments are included as well as assessment of qualities like workmanship, reliability and punctuality.

Always ask your supplier how long the delivery will be and have this written into your contract. Also request an estimate of how long the work will take to complete once installation begins. Most companies will require a deposit when you place the order. Try to negotiate as low a percentage as possible – 10% is usual. You should avoid paying larger deposits than this unless your work is unique/ bespoke, such as 'one off' timber window designs. It is not unreasonable in these circumstances for suppliers to require higher holding deposits.

Also ensure that a fair percentage is withheld until the work is finished to your complete satisfaction.

Check out the guarantee and exactly what it covers. Many companies now offer 'insurance backed' guarantees which are actually insolvency guarantees and only become effective if the company goes out of business. Most guarantees will give a 10-year cover on the frames but you may find that the cover for the double glazed unit is five years. Complications can be avoided if you ensure that a potential supplier is specific about these issues – and puts it in writing.

Don't automatically go for the cheapest price and when comparing 'like with like' take into account how long the company has been established and the quality of its guarantees. You may find two suppliers using the same brand of PVCu extrusion and the same Pilkington glass. However if one is a window fitter doing 'private work' at the weekends you should bear in mind that his 10-year guarantee may be worth significantly less than that from a more established company with a supporting infrastructure.

TOP TIP:
Get at least four estimates, and always use a service like Quotatis. Make sure to check guarantees carefully

Choice of Materials

PVCu
PVCu, uPVC, PVC-U, and PVCU all essentially refer to the same substance. The most popular choice, this is an excellent material which has the advantage of needing little or no maintenance. The least expensive of all the available materials, it is most popular in white but is also available in mahogany and oak wood-grain styles.

Problems with discoloration are negligible and most suppliers will provide warranties against this. The design of the windows varies from company to company but points to look for include: Internal or externally-glazed windows – an option offered by most PVCu systems. Internally-beaded windows, where the glass is held in from the inside, are generally deemed more secure and burglar-resistant. However, there are also perfectly satisfactory externally-beaded PVCu systems on the market. Many feature either internal wedge gaskets or a double-sided tape that firmly fixes the external bead.

TOP TIP:
PVCu is a good budget option

Thickness of PVCu wall – most PVCu systems for window and door construction are 'multi-walled' with internal reinforcement provided by either aluminium or galvanised steel box section. Wall thickness can vary from system to system, most being around 3mm or 3.5mm. In general the thicker the walling, the stronger the section. Ask your supplier to show you a sample section and establish whether the frames are fully reinforced. Be aware, too, that the greater the number of internal walls, the greater the strength of the building.

Depth or thickness of frame – the depth of frame extrusion can vary from as low as 50mm to more than 70mm, although most are in the 60-65mm range. This, too, has an effect on the structural strength of the window or door.

Note that PVCu is unacceptable to planners for use on listed buildings, nor is it popular with planners in conservation areas.

Choice Of Materials

Timber
A more expensive material, hardwood is the choice of those seeking a traditional design with an authentic look and is a particular favourite for use in listed buildings or period properties. It has the twin benefits of being suitable for the recreation of virtually any traditional design or feature, while incorporating the contemporary advantages of double glazing.

Hardwood is available in a variety of stains such as mahogany and light oak, as well as various painted finishes and, while it does require periodic maintenance, this is not an onerous task thanks to modern paints and stains. As with PVCu, the frame thickness will affect the structural strength. It is also important to ascertain which jointing method is used – most suppliers use a traditional mortice and tenon joint but other systems do exist.

TOP TIP:
Aluminium is the best choice for commercial locations

'Frame thickness determines structural strength'

Aluminium
This shares many of the features of PVCu, although aluminium is more expensive and does not provide such efficient insulation.

When double glazed windows first became popular in the late 1960s aluminium was the usual choice of material due to its strength and durability. It is more resistant to warping, twisting or sticking when subjected to the elements. It is also virtually intruder-proof and neither absorbs water nor rots or rusts.

Its popularity declined with the arrival of the cheaper PVCu. However, aluminium remains an excellent choice for commercial locations and any circumstances in which strength is an important factor. It is advisable, if choosing aluminium, to specify frames with a thermal break as this improves the insulation properties.

Aluminium windows can be fitted as 'direct fix' – i.e. directly against the brickwork or, alternatively (and more often) into a hardwood sub frame.

Choice Of Materials

Sash windows
Replacement sliding sash windows are also available but are usually more expensive than the more common casement style windows.

They are made in both PVCu and timber. The main difference between PVCu and the more traditional timber box sash window is the method of holding the sashes in position. Instead of weights, pulleys and a cord, a pair of sophisticated spring and spiral balancers provides the sash retention and can carry weights of up to 40kg.

The traditional glazing bar arrangement may also be replicated on PVCu by concealing the glazing bars within the double glazed unit or by surface-mounting the bars onto the external faces of the unit.

One of the biggest advantages of timber sliding sash windows is the ability to replicate any period design feature. Although this necessitates the use of a specialist joinery company with associated cost implications.

One of the biggest advantages of timber sliding sash windows is the ability to replicate any period design feature.

Design Issues

There are a number of issues worth considering regarding the design of your replacement windows.

Sight lines
Most modern replacement windows have smaller areas of glass wherever there are openings (sashes) fitted. Where the frames are fixed the glass area will be larger. This creates an unequal 'sight line' which is quite normal and acceptable to most people.
However on a lot of older properties it was more common to have an equal sight line making it impossible to tell from the outside which windows opened and which did not. Fitting 'dummy sashes' or 'dummy openers' into the frames created this equal sight line.

Some consumers prefer an unequal sight line to avoid the overall bulkier appearance that is a feature of an equal sight line – which, incidentally, adds to the cost. However, an equal sight line is recommended for properties with Georgian and leaded light window designs so that rectangles/squares can be matched in size.

Another option is vertical equal sight lines, in which fixed windows are always positioned above fixed windows and opening windows are always above opening windows. Suppliers can give more information on this.

Gaskets
Most companies have traditionally fitted black gaskets as, in the past, it was not always possible to get a matching white nor to offer a colour-fast guarantee. Advances in technology have changed this situation and increasing numbers of companies now offer both options. White gaskets can often appear grubby and show up dust and dirt and this may be an important consideration is you live close to a major road.

An alternative to white gaskets is the 'low profile' black gasket which is very slim and less obtrusive. However, it is recommended that you choose white gaskets on white PVCu panelled doors.

Neighbours
Unless you live in splendid isolation in a rural location any changes you make to your home will have an effect on the overall appearance of your street. For example, if two semi-detached houses have replacement windows both will be enhanced if the same style is used on each. Conversely, adopting different styles can spoil the appearance of both – and possibly devalue them, too.

Types Of Glass

There are a number of options when it comes to choosing the glass in your double glazed unit – from plain to patterned, coloured, stained and a number of 'speciality' glasses. Your choice will depend on your house style, your budget, your taste and the position of the window.

Low E Glass
Low-e glass stands for low emissivity glass. This glass varies from normal clear glass in that one side of the glass has a special metal coating, technically known as a low emissitivity, or Low-e coating. Low-e glass is a type of insulating glass, which increases the energy efficiency of windows by reducing the transfer of heat or cold through glass. That means in the winter your house stays warmer, and in the summer it stays cooler.

There are two types of Low-e (low emissivity) glass available - Pyrolytic (hard coat) is considered to be a medium performer, and sputtered (vacuum deposition or soft coat) is considered to be the highest performer.

Pilkington K Glass™ (A brand of Low-e glass)
The most common is Pilkington K Glass™ which has high light transmission and appears virtually the same as clear float glass. It is the microscopic coating that makes the big difference to its performance. Glass in a window absorbs heat then radiates it again on the colder, outside, surface.

Pilkington K's low emissivity coating on the surface that faces into the air gap of the double glazing unit provides a poor radiator. The heat absorbed by the coated glass is inhibited from radiating across the air gap and then from the outer pane to the cold outside world. Instead the heat is reflected back into the room by the coating.

It works in a similar way to a sheet of reflecting foil placed behind a central heating radiator which bounces the heat back into the room. Heat losses through different materials can be compared by their U values. The higher the U value, the greater the heat loss through the material.

The U value of a single pane window is 5.6. Double glazing with ordinary glass has a U value of 2.8. Double glazing with Pilkington K Glass™ has a U value of only 1.9, considerably better than conventional double glazing, and as good as triple glazing. Because Pilkington K Glass™ is so neutral in appearance, it is recommended that its presence in a double glazing unit is confirmed on installation. This can be achieved by the use of a coating detector which unit manufacturers or installers should have available.

TOP TIP:
Choose a glass according to the position of your window and pick self cleaning glass for low maintenance

Types Of Glass

Self-cleaning glass
What took them so long? Pilkington Activ™ is the holy grail of glass. Its active coating, chemically bonded onto its outside surface, is designed to absorb the ultraviolet light given off by the sun. This absorption process causes a reaction on the surface of the glass, which breaks down and loosens dirt. Then, when it rains, the coating causes rain water to 'sheet' off the surface of the glass, which not only washes away the loosened particles of dirt, but also prevents the formulation of droplets, which cause streaks and make windows look dirty.

SGG PLANITHERM (A Soft Coat Low-e Glass)
This is a clear float glass, which has been coated with metallic oxides by magnetically enhanced cathodic sputtering under vacuum conditions.

This sputtered coating is highly reflective to long-wave heat radiation, otherwise known as a "low emissivity" or low-e coating. This greatly reduces heat loss and ensures that double glazed units incorporating SGG PLANITHERM provide excellent thermal insulation. SGG PLANITHERM is neutral in appearance and has a high light transmittance factor.

Neutral Appearance has these main benefits:
- No unsightly tint - Unlike traditional Low-e coatings that suffer from an unsightly yellow tint, SGG PLANITHERM looks very clear. This means your curtains or Georgian Bars will not look dirty or discoloured
- More light - less tint also means more light can enter the room, making it more comfortable and luminous
- No 'haze' effect - SGG PLANITHERM does not suffer from the unsightly tint commonly associated with traditional Low-e products

SGG PLANITHERM is a slightly more difficult product to locate than say the Pilkington Products, so you may have to ask your supplier to specially source it for you, if having a neutral appearance is very important to you.

www.windowstoday.co.uk/glass.htm

There are a number of options when it comes to choosing the glass in your double glazed unit

Going Down The DIY Route

It is possible to fit double glazing yourself and taking this course of action will enable you to save a considerable amount of money. However, unless you are proficient, highly competent and have all the right tools, it could be a disastrous decision.

The first thing you need to do is apply for Building Regulations approval from your local authority. Once this is granted you need to find a specialist supplier who can carry out a site survey. The cost should be reasonable and could prove to be a very sound investment.

The surveyor will advise you on what is appropriate for your property and your needs, give you guidance on openings and ventilation and outline any requirements for safety glass, fixed open trickle ventilation for gas appliances and fire escapes.

Equally importantly, all measurements and specifications will be the supplier's responsibility. All the extras – trims, packers and sealants, etc. – to do the job properly can be specified and included in the price. It is much cheaper and more efficient to get these from the supplier, who buys in at trade prices.

Things to consider when choosing a supplier:
- Don't buy solely on price
- Secure a 10-year product guarantee
- Check whether the supplier will deliver to, and offload at your home address
- Ensure there is a sound after-sales and advisory service
- Enquire whether telephone and on-site support is available if you come up against problems

Other points to consider when doing it yourself:
- Bow or bay windows are tricky and only for the extremely proficient
- Start with a confidence-boosting small downstairs window
- Fitting PVCu is completely different to fitting wooden frames
- Never rest glass sealed units on edge on concrete, as they are very likely to 'shell' and then crack as you handle or fit them
- Always secure your ladder firmly or, better still, get someone to hold it for you
- Think twice before tackling this task!

www.doubleglazing.com/category/diy-double-glazing/

TOP TIP:
DIY saves money but it's not for the inexperienced. You will also need Building Regulations approval

At A Glance Guidlines

General advice:
- It's a legal requirement to adhere to Building Regulations
- If in doubt, check whether you'll need planning permission
- If possible, view some installations done by your proposed supplier and talk to their customers
- Consider secondary glazing options
- Check for enhanced safety and security features
- The lower the U value the better the insulation
- Replacement windows must meet minimum insulation levels
- You will need proof of compliance when you sell your home
- Check supplier guarantees before you buy
- DIY is an option – but not an easy one!

Design tips:
- Choose a shape and style that will enhance the look of your home
- Think how your chosen style blends with neighbouring properties
- Inferior windows can devalue your property
- Check your proposed windows have sufficient openings
- Check energy ratings
- PVCu frames are the least expensive option
- Consider using a specialist glass.

DIY construction tips:
- Don't forget to apply for Building Regulations approval
- Choose a specialist supplier
- Have a site survey carried out by a professional – and take his advice
- Avoid bow and bay windows
- Start on a small window to gain confidence
- Think about whether you really have the necessary skills to tackle this project.

Maintenance tips:
- Use a furniture aerosol wax rather than oil to lubricate squeaky hinges
- Never use abrasive cleaners on PVCu conservatories
- Never use washing-up liquid on PVCu frames
- Aluminium polish bought at motor shops can be used as a cleaner for silver frames.

TOP TIP:
Choose a shape and style that will enhance the look of your home.

Appendix - Useful Sites:

http://doubleglazing.quotatis.co.uk/

www.quotatis.co.uk

www.doubleglazing.com

www.getdoubleglazingprices.co.uk

www.double-glazing.info

www.double-glazing-quotes.co.uk

www.localdoubleglazing.co.uk

www.doubleglazingnetwork.co.uk

www.ggf.org.uk/

www.bfrc.org

DG.COM