

Small-pane metal-framed casement windows are an English classic and a wonderful alternative to wood and plastic windows. Clive Fewins explains how to use them and comply with the current building regulations.

Small-pane metal-framed casement windows are a hardy perennial in English domestic architecture but they are little seen in new builds today, unless the house is a conscious imitation of a period style. When this is the case, the frames and casements are usually of steel, because architects still generally consider this the most elegant and economic means of achieving finely profiled glazing bars that are strong enough to hold in the glass.

More commonly the need is to repair, update and, if possible, insulate classic 1930s-style windows, in which the single-glazed panes are usually inserted in between 'H' and 'N' systems — both deriving from the classic horizontal framed steel windows found in the 1930s and pioneered by WF Crittall.



Metal Windows



The Crittall window company still produces Homelite L, an advanced version of the classic range, which is polyester powder coated for durability and retains the same slim sightlines. It has a U-value of 2.2, meaning that it conforms with the thermal insulation requirements for new windows. This window system is usually installed and maintained and, where necessary, repaired by specialist steel window companies. Depending on where you live, you will probably be able to locate one of these companies through the Steel Window Association. Member companies of the association are usually capable of refurbishing, upgrading and weatherstripping old steel casement windows.

Some member companies of the association often also have their own comparable

systems of small-pane steel windows, equally elegant in appearance, resistant to corrosion and to intruders, and requiring little maintenance. If you are replacing a worn out old steel system and your house is listed then you will not need to comply with Part L – the thermal insulation requirements – of the Building Regulations. However, if your house is unlisted and you are replacing steel windows or adding them to an extension, then you will need to comply.

This should not be a problem. If you have Crittall-style windows then you will find that most companies within their installation network have re-engineered their windows to create a deeper section that will take a 24mm unit with a 16mm cavity. The only compromise involved is an extra 10mm of steel round

the exterior to accommodate the increased depth of the glazing. Other companies have managed to make their casements conform with the tighter thermal insulation requirements by using an extra stepped bead on the inside of the steel frame. You will generally find that in order to meet with the latest requirements of Part L, in steel window frames you will be best off going for the centre pane U-value calculation of 1.2, rather than the whole frame requirement of 2.2 (in metal). Using this method of calculation the steel frame is not taken into consideration. Crittall has produced a very useful leaflet called *Your Guide to Compliance with Part L*. It explains that with a historic building of architectural merit, it should be possible to trade off increased insulation in other parts of the house against the window system.

If your need is for a metal system in a new traditional-style home, the best advice is to contact the Steel Window Association. That way you will probably find a supplier who can meet with the demands of Part L.

With advanced alloy systems such as the Vale Architectural Bronze Casement range, you will find that both the frame and the casements conform, but if you want a system like this, expect to pay at least 50 per cent more than you would for steel.

The problem with steel windows has always been one of a cold bridge at the point where the steel frame forms a direct contact between the cold air outside and the interior of the building. This is why aluminium was for many years more popular. However, although thermally broken aluminium has better insulation than steel, it relies on thicker sections because aluminium is a softer material and, size for strength, steel is better.

However, if you hunt hard enough for a small-pane aluminium system you might find one that suits your requirements. Traditionally the problem has been size of section — known in the trade as 'sightlines'. It is possible you might have to be prepared to compromise and go for a system in which the so-called 'glazing bars' do not do a real job but lie between the two panes of glass or are 'applied' to the outside of two panes of glass, so the casements would not therefore be genuinely small pane. ■



Architectural Bronze Casements — such as these by Vale (ABOVE) — offer a delicate alternative to steel and aluminium — perfect for the detailing necessary to make small panes attractive.



USEFUL CONTACTS: Steel Window Association: 020 7637 3571 www.steel-window-association.co.uk; Vale: 01476 564433; Clement Windows Group: 01428 643393; Council for Aluminum in Building: 01453 828851 www.c-a-b.org.uk; The Twentieth Century Society: 020 7250 3857 www.c20society.org.uk; **For details of how to measure the thermal performance of windows and guidance on the building regulations visit the website of FENSA www.fensa.co.uk** **Other websites that might prove useful are www.buildingconservation.com; www.periodproperty.co.uk**