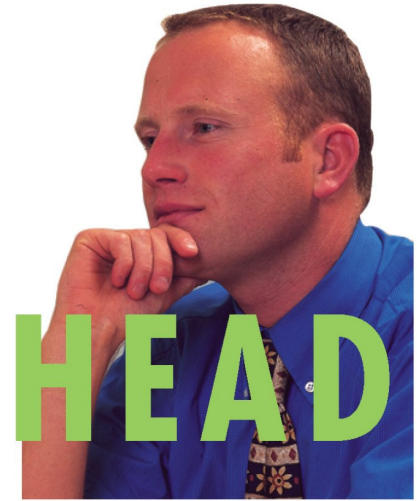




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In this Head2Head article, Ultraframe's technical support engineers, Bill Kenyon and Mick Rowley discuss problems that arise when the incorrect sealants are used by installers.



Through product innovation, Ultraframe has attempted to reduce the number of areas where sealant is required to the absolute minimum. However, in the one or two places on a conservatory that silicone sealant is required, it is vital that the correct material specification is made.

Occasionally we receive a direct call from a frustrated installer who is attempting to rectify water penetration. After quizzing him on how he had put the components together, we ask him if he can get a tube of silicone out of his van that he will have used on his roof and read back the properties on the label. Invariably, he states that it is high modulus and that's all.

This article is intended to explain why it is very important to use the correct type of sealant, what properties to look for and what will happen when the incorrect sealant is used

The properties of silicone/modified silicone sealants can be divided into two camps - firstly their adhesion \ curing \ setting properties and secondly their 'elasticity'

1. Adhesion \ Curing \ Setting Properties

It is essential to ensure that the silicone utilised will adhere to the material it is being applied to. There are two types, each with their own curing (setting) characteristics \ chemistry: -

a) Acetoxy cure- when curing this gives off an acid as a by product (acetic acid hence the vinegar smell) and is not suitable for use on such materials as plastic, PVC, glass and polycarbonate, because the acid that it releases can cause stress cracking of the adjacent components, undermining the bond. These are more suitable as a general purpose sealant i.e. sealing around sanitary ware.

b) Neutral cure - when curing this does not give off any acid as a by product to undermine the bond and so this is the most suitable for plastic, PVC, polycarbonate, aluminium and glass.

2. High and Low Modulus

This refers to the elasticity or conversely the rigidity of the silicone when bonded to a material.

a) High Modulus silicones require a high force to stretch them and will have a very poor elasticity, being a lot more rigid, and are ideal for sealing around bathrooms and

basins.

b) Low Modulus silicones require a low force to stretch them and will generally be ideal to accommodate expansion and contraction of plastic, PVC, polycarbonate, aluminium and glass.

When acetoxy high modulus silicones are applied to plastic, PVC, polycarbonate, aluminium and glass they will initially adhere, but in practice this seal quickly breaks down initiating a further site visit

Preparation

Preparation is the key to good adhesion. One of the main reasons why silicone does not appear to adhere is due to the lack of surface preparation. All pvcu, glass and aluminium products must be cleaned with an alcohol-based solvent; this should be applied with a cloth and then removed with another dry cloth to remove grease and dirt. When sealing to polycarbonate or glass ensure that the silicone bonds directly on to the polycarbonate or glass and not to either the breather tape/protective tape respectively.

If silicone fails to bond and can be peeled off when it has not adhered, the exposed silicone should then be examined for the presence of dirt and pitting - the likely cause of failure.

Good Practice

Installers should be checking that their low modulus neutral cure silicone conforms to BS5889 Type A (type B refers to high modulus silicones) and that it carries a 10 year guarantee (this preferably in writing from the manufacturer). Silicone with the above criteria have a life expectancy of between 20 - 25 years. The colour of silicone does not affect its adhesion or elasticity properties

Conclusion

As with most things in life "you get what you pay for". Ensure that your installers and sub contractors use low modulus neutral cure silicone. Cutting corners for the sake "of saving a penny for a hapeth of tar" will almost certainly increase your overall long term running costs with repeat returns to perform remedials and loss of future sales via recommends.

Ultraframe is launching a revised range of box gutter adaptors, one of the biggest changes to which is the incorporation of a "free" tube of modified sealant with each adaptor. Previously, installers had to use their own low modulus / neutral cure product but Ultraframe now supply Gutterbond, a proprietary product that can actually be used under water!

By supplying the correct sealant, Ultraframe is removing the potential for incorrect specification and eliminating call-backs.

Step 1 Apply a generous bead of Gutterbond



Step 2 Slide the boxgutter in place



Step 3 Once in position turn the toggle to fix the adaptor firmly in place.

