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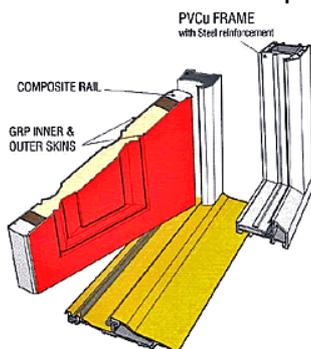
Product Information

Composite Doors – Issues with Movement in Direct Sunlight

The Construction of a Composite Doorset Assembly

A composite doorset is made up of the following components:-

- Outer doorframe made from PVC, Timber or Composite Material
- GRP door leaf made from fibreglass reinforced plastic skins, timber and PVC framing with polyurethane foam core
- Glazing cassette system or glass frames made from a plastic material such as PVC, ABS or syn-res
- Double or triple glazed insulated glass unit
- Hardware comprising locks, hinges, sill, letterplate, doorviewer, etc



These components are fitted together with screws and sealants to product a functional doorset, that when installed into the structural opening correctly, will perform as required:-

- ✓ Open and close with minimal effort
- ✓ Offer the required level of security
- ✓ Protect against the elements by offering the required level of airtightness and watertightness.

Movement in Direct Sunlight

As the doorset assembly is made up of a variety of different elements, some of which are different types of plastic, the doorset is prone to movement. Each material reacts in a different way to heat therefore each element of the doorset will expand and contract at differing rates.

Doors with the external face finished to a dark colour or shade will be prone to more movement than those finished to a light shade.

Movement is more likely to occur in Summer months when the heat from the sun is at its strongest. Therefore doors that are facing east will react more early morning whereas doors facing west are likely to react more during the evening.

The inside face of the door is often finished a lighter shade and is not exposed to direct sunlight. This means the internal face will be less prone to movement than the external face.

Effects of Movement

Doorsets can become harder to open and close when in full sunlight as the materials have expanded to a point where the whole doorleaf and frame are slightly larger and therefore the gaps are smaller.

As each different element of the doorset expands and contracts at different rates, components will rub together slightly which could result in noises which some may describe as cracking or knocking sounds.

Preventative and Corrective Measures

There is no course of action to prevent a composite doorset being prone to movement as it is the natural reaction of the materials to changes in temperature. However there are measures that can be put in place to reduce the effects of movement:-

- Ensure the doorset is installed such that the fitting tolerances between the door leaf and frame are maintained at an even 3mm all round.
- Ensure keeps/strike plates are set so the bolts engage close to the top of the keep pocket and centrally across to allow the door to move and still engage the lock.
- Loosen the cassette fixing screws slightly, whilst maintaining the external weatherseal to allow the plastic in the cassette room to expand without rubbing tight up to the fixing screws.
- Ensure the external glazing cassette does not directly touch the door face or glass by applying thicker sealant with good expansion properties.

It must be noted that whilst measures such as these may reduce reaction to movement they cannot prevent its occurrence and therefore eliminate the effects entirely.