

CUSTOMER TECHNICAL MEMO # 291

Subject *Invisi-Gard Wedge Shrinkage*

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Over the years we have received sporadic reports from customers regarding the Invisi-Gard wedge shrinking after being installed for some time.

We have conducted some in house testing and our supplier Marco Extrusions has also conducted some research and testing.

The laboratory findings have confirmed that the wedge will shrink if the temperature exceeds 75°C.

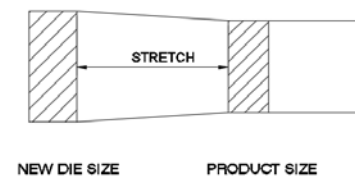
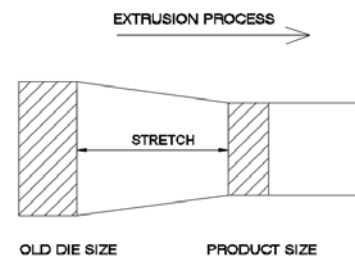
For the shrinkage to occur, there are a number of factors which must align to create such temperatures. This usually consists of a dark coloured door, completely unshaded, and normally western facing. The part of the door most prone to shrinkage is the bottom rail, as it is more likely to be exposed to the direct sunlight for longer periods of time. In these specific conditions, up to 25mm per meter shrinkage has been observed.

Why is this happening?

The plastic extrusion process is very similar to that of aluminium in the way that it is stretched to achieve its final size.

When the plastic is heated up to its critical temperature, the plastic starts to revert back to its 'pre stretched' state. This process is also commonly seen in glazing wedges which are extruded in the same way.

In order to limit the amount of reversion occurring, our supplier has cut a new die which is much closer in size to the final product. This means that the amount of stretch required to maintain the tolerances will be reduced. As per diagram on the right



While shrinkage has been reduced to its absolute minimum, it cannot be eliminated due to the nature of the product. Shrinkage of up to 1% in length is still expected to occur in specific conditions.

Wedge Performance

While the wedge is shrinking in length, the profile of the wedge is actually trying to grow in thickness as it tries to revert to the larger shape from which it was originally stretched from. Therefore clamp pressure will actually increase, so there is no negative impact in regards to performance. The issue is purely the aesthetics of small gaps at the corners.

If you have any questions please do not hesitate to contact your local Alspec Area Manager.