

Adhesive consideration - designing with production in mind

The April 2019 issue of [*Design Products & Applications*](#) magazine is now available, and it contains a piece from our Technical Manager, Kevin Cook, entitled [*Adhesive Consideration – Designing with Production in Mind*](#).

In 2018, the New South Wales Government faced embarrassment after ordering \$2 billion worth of new trains that were too wide for the tunnels. To solve the issue, the Government body managing the rail system was forced to relax its safety standards and modify ten tunnels so that the new trains could run. Similarly, many product designers find they need to make significant adjustments when they reach the production stage. Kevin discusses the benefits of designing with production in mind when thinking about bonding and adhesive selection. Click on the image to read more.

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Feature: Adhesive consideration

Designing with production in mind

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When a design engineer requires an adhesive to bond one substrate to another, they can save time, money and effort by designing with production in mind. During the design process, it is common to produce a prototype 3D model, using a variety of methods. The prototype will be tweaked, adjusted and improved until it matches form, fit and function requirements. However, if the designer hasn't considered how the prototype will be scaled up into a saleable product, they could run into problems. The designer could be forced to adapt their product, or the environment the product is going into, for it to be functional.

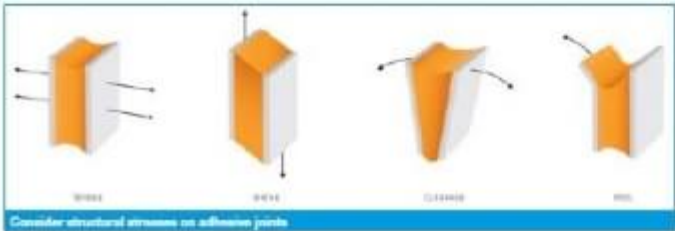
Intertronics recommends that the design

engineer thinks about moulding, bonding and dispensing from the outset. Working with an adhesives specialist early on paves the way for a project to be completed smoothly and without hold ups.

Materials

The designer should use the same substrate in the prototyping and testing of a product as will be used in production to ensure consistency. Considering adhesion from the outset can help the designer to make an appropriate substrate choice. If they do not, they may not be able to use their first choice of substrate, which can call for an entire redesign.

The designer must firstly consider how the joint will provide the right support for the structure, particularly if it is a structural component. An exposed or unsupported joint may be weak, regardless of whether an appropriate adhesive choice is made or not. The designer should also think about where the product will be manufactured, as for example a cyanoacrylate adhesive would not cure successfully in a cleanroom, as the humidity in the air would be too low.



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