

The smallest details

Andy Holland, technical marketing manager at Rapiertstar, explains why using the right fasteners is key to manufacturing windows and doors efficiently, profitably and to a standard that exceeds customer expectations

For the past 25 years, Rapiertstar has specialised in providing the highest quality fasteners to the UK and Irish door and window industries, with a continuous programme of new product development and fabricator support ensuring the market can make the most of these highly engineered solutions. Whilst we are 100% focused on fasteners, we know that they are easy to take for granted in a fast-paced production environment. But take a step back and look at which fasteners are being used across the factory, and there are almost always ways to improve ways of working that will improve the bottom line.

Despite being the smallest and lowest unit cost elements within a door or window, fasteners are crucially important for the long term structural integrity of the product. Don't get drawn into thinking that all fasteners are pretty much the same, just different sizes. This is certainly not the case.

Misunderstanding fasteners risks undoing advances in hardware and profile design that have the potential to achieve superior levels of quality, thermal performance and security. Anyone who has put a window or door through PAS 24 testing will know that there is no point in choosing a robust, highly engineered locking system or hinge if the screws are unable to fix it to the frame.

Choosing the right types of fastener

Fasteners for fenestration are usually manufactured from coated carbon steel or stainless steel. The recommended type of fasteners depends on the application, its location, the framing material and the warranty you want to offer.

As a rule, stainless steel screws – austenitic or martensitic – will outlast coated carbon steel because of the inherent difference in corrosion resistance offered by these different types of steel. So, in applications where a longer service life is demanded by the customer, perhaps backed with an extended warranty, it would be advisable to use austenitic or martensitic fasteners. In addition, only austenitic stainless steel screws are to be used with aluminium profiles – this is due to natural 'galvanic corrosion' that occurs between different types of metals.

Consider too that the atmospheric conditions are more corrosive in many areas. So if you are manufacturing windows and doors that will be installed in properties by the coastal areas or in busy urban areas, it is advisable to use austenitic or martensitic stainless steel fasteners.

Remember though, this does not mean that you should stop using carbon steel screws. In most cases they will be absolutely fine to use – just make sure stainless steel fasteners are used for appropriate applications or risk costly call-backs sooner than you think.

Passing the tests

A fastener's level of resistance to corrosion is established using salt spray testing, as is commonplace for all hardware. But, in the case of Rapiertstar, this is only one of eight core tests that every batch of fasteners goes through to ensure the products meet the highest quality standards and will stand the test of time.

This includes tests for ductility, to ensure the screw does not break easily, speed of insertion, the extent to which the fastener wobbles during insertion, and torque, which establishes whether the screw has optimal torsional strength and that design specifications are met and exceeded.

Knowing that fasteners have been tested by the most rigorous regime is important to provide peace of mind that they will match the quality of all the other components in the finished window or door. In addition, however, it also gives confidence that the fasteners will not cause any issues on the production line and help to ensure fabrication is smooth and efficient.

Streamlining production and supply chain

So, you've got the right types of fasteners for each application and you're confident that your fasteners have been thoroughly tested. Next up is making sure you are stocking the optimum range of products and that the fasteners are being applied correctly.

One of the ways that Rapiertstar helps fabricators to optimise manufacturing efficiency is to conduct regular fastener audits and provide technical support via recommended fixing manuals, which are specific to the various PVC and aluminium systems. The audits often reveal ways to reduce stockholding and simplify ordering. For example, you may be using two sizes of the same screw for two slightly different applications (say, 25mm and 30mm screws) when one size may be perfectly suitable for both tasks. Eliminate the need for one size and you could save time and money.

Recommended fixing manuals help fabricators to understand which fasteners should be used throughout the window or door construction. The technical diagrams included within them are often used as handy reference posters on workstations across the factory to provide a constant reminder of best practice.

Finally, don't underestimate the value of supply chain reliability. If the correct range of fasteners is not available to you when you need them in the right quantities at the right quality, you could end up with production downtime or, even worse, taking a risk by using the wrong fasteners as a short term substitute. Neither option will help your long term business success. www.rapiertstar.com

