

What is the best material for constructing Fume Cupboards?

There are several different materials that have been used by Fume Cupboard Manufacturers for fume cupboard carcasses and below is an analysis and comparison of performance.

Wood

This may seem strange to us in the modern times in which we live but some of the oldest examples of fume cupboards were basically wooden boxes with sliding sashes that were virtually identical to wooden sash windows.

The wood/glass combination worked reasonably well as the wood (often Oak or a similar hardwood) offered pretty good resistance to chemicals. The issues with the wood "moving" did cause issues with sashes becoming immovable and of course the work surface materials used were in some cases little more than chipboard with a coating. They also offered very little in the way of heat resistance.

Metal – Mild Steel (often with a coating of Epoxy or similar)

When Wood gave way to metal the benefits of a stable material and smooth-running sashes were welcomed. The issue however was (and continues to be) that many applications require the use of strong chemicals which of course attack the metal and rust sets in surprisingly quickly. The heat resistance is of course excellent.

Metal – Aluminium

Whilst Aluminium doesn't rust in the way that Steel does, it is very prone to corrosion and in many situations is no better than Steel. It is also quite expensive. The heat resistance is very good.

Metal – Stainless Steel

Stainless Steel is an excellent material in most applications but there are 2 reasons that prevent it from being the ideal material for every day applications. 1. There are several chemicals which can cause "pitting", 2. it is very expensive. The heat resistance is excellent and in some applications such as Radioactive material handling it is the material of choice.



Polypropylene

PP is an ideal material for constructing Fume Cupboards as it is not only highly chemical resistant in terms of corrosion, rust or staining but it is also considerably lighter, better for thermal insulation and of course requires no powder coating/painting.