CASE STUDY

Intumescent Silicone Graphite Coating





Background

Flame resistant materials and components are a critical element of any construction or building safety project. It is the ability of these materials to resist ignition when exposed to a naked flame that essentially safeguards property and lives. Whilst many construction materials have some natural resistance to fire, additional materials such as coatings can be applied or installed to restrict the spread of flames, enabling people more time to evacuate a property in the case of a fire. This is commonly referred to as passive fire protection.

Technical Solutions for Outstanding Performance

Problem

Whilst flame resistant construction materials have been used to enhance building safety since the 19th century, fire protection requirements bound by legislation and relevant standards have constantly evolved. This has placed more demands on the construction industry when it comes to the fire performance technology used in buildings, and for product developers and designers to create the next best thing or concept.

For example, a coating that provides a surface with a class 1 fire rating would stop the spread of flames across the surface. A coating that provides a class 0 fire rating would do this too but would also restrict the amount of heat released from a surface if it were to catch fire.

The choice of which rating needs satisfying normally depends on building regulations and location of installation or application. However, in light of growing safety concerns due to tragic incidents, and the ever-increasing size and sophistication of property designs, preferences often lie with the best in fire protection products. This is where Itac makes things happen!



Itac's Solution

Itac have manufactured and supplied an intumescent silicone graphite coating as a form of passive fire protection on fabrics for over ten years. Intumescent coatings are paint-like solutions that expand to form an insulating layer when exposed to fire.

Although polyurethane is widely used for intumescent coatings, silicone is often the chosen polymer due to its nontoxic properties and better performance when exposed to very high temperatures. The silicone in Itac's coating is capable of withstanding temperatures of 300°C to 400°C and acts as a binder to hold the graphite in place on the outside of the fabric. The presence of the graphite allows the intumescent phase to take place upon contact with a naked flame. The protective barrier that forms on the fabric pushes the flames away from direct contact with the face of the fabric providing that critical safeguarding mechanism of stopping the spread of flames and restricting the intensity of heat.

Working Together to Make Things Happen!

Outcome

Itac's product has been used in many prestige new build and refurbishment projects throughout the UK and the rest of the world. Our expertise and support throughout the formulation, sampling, up-scaling, and qualification processes has enabled our client's products to achieve a class 0 fire rating. This has provided them with peace of mind that they are delivering the ultimate in fire protection and allowing more innovation in building design for their clients.

Supporting our client's business objectives and ambitions is what Itac do best. Together, we make things happen!

We would be pleased to hear about any of your current or future application challenges. Please call 01204 573736 or email info@itac.uk.com and we will ensure your enquiry is promptly dealt with.



