

To help protect against fire, reach for the water-based

Recent advances in fire protection technology have been rapid and impressive – but there are risks and responsibilities attached. John Gordon, General Manager of Nullifire Limited looks at today's new generation of intumescent coatings.

“The best tools can never compensate for poor workmanship. They simply empower the skilled to achieve the right result.”

Whoever said that made an important point. Technological progress is all very well, but it still requires the user to be diligent about using the correct techniques – and that becomes an even more crucial mantra when public safety and human lives are ultimately at stake.

Intumescent fire protection technology is one such example. In the past – as with most conventional decorative and protective coatings – the products in most common use were oil- or solvent-based. When water-based paints made their first appearances, there were some false starts, unimpressed professional end-users, and a legacy of doubt about their effectiveness that took many years to eliminate. The established, oil-based ways were still the best, it seemed – and they did the job.

Today, it's a different story. Water-based intumescent systems have long since overtaken their solvent-based predecessors, and now dominate the sector. There are several good reasons to welcome this trend. The usual advantages of an environmentally-friendly water-borne product all apply:

- low emissions of Volatile Organic Compounds [VOC]
- no solvent entrapment (a contributor to Sick Building Syndrome)
- reduced health hazards to personnel during application, enabling usage in confined spaces, incl. on site
- quicker-drying, for earlier job completion
- non-hazardous classification for waste disposal purposes

Using less to do more

Underlying all these familiar benefits is the technological trend of 'using less to do more'. Certain intumescent products now offer greater performance while using smaller coating thicknesses. But, inevitably, such impressive claims give rise to scepticism in some quarters.

Nowadays, specifiers and designers carry greater burdens of statutory responsibility and potential liability than in the past. Accordingly, they have to be even more circumspect in checking their facts before making important decisions. Regulators and enforcers of standards are also required to be suitably cautious as a matter of routine. This has all meant that questions are inevitably raised about the reliability and claimed performance of these thinner-coating products. The cost advantages, not least in application times and labour costs, cannot be allowed to obscure the vital need to deliver protection that is, beyond any doubt, completely reliable.

The fact is that the higher the technology, the greater the need for equally high standards in its application, and thorough checks of the end result. This puts pressure, in turn, on those who evaluate these products and systems. For intumescent coating systems, it is these expert conclusions – about wet and dry volume solids, minimum application thickness, char levels, and about protective performance timescales – that will ultimately be relied on by specifiers, contractors & property owners.

Winning confidence

So how to overcome the doubts and win that essential confidence? Supported by Warrington Fire and BRE Fire & Security, manufacturers and suppliers of intumescent coatings came together to discuss these and other challenges facing the industry – including new, more stringent European regulations, approvals and standards.

This collective effort led to the establishment of The Intumescent Coatings Forum [ICF] – who have issued guidelines for 3rd party assurance of quality and performance. This imposes new rigors and procedures on testing laboratories, and specifies the methodology member manufacturing companies must follow for assessment and presentation of data. ICF members have also agreed that all products must be independently certified to ensure consistent quality.

This offers specifiers, contractors and building owners unprecedented reassurance. ICF approval means reliability and peace of mind: that products will perform as intended and that the specified thickness will deliver the required level of protection. It is also confirmation that products are manufactured to a consistent quality above the standard required by the industry.

The remaining key decision is to assess the required level of protection. Assessment of time needed to ensure evacuation of all occupants from the building, according to its size, layout and function, can be balanced against application cost considerations. The Nullifire S707 system is currently the only water-based product meeting ICF requirements that offers fire protection for 30, 60, 90 & 120 minutes.

The ICF initiative is ensuring that the best 'tools' for intumescent fire protection are available and identifiable. The final responsibility is to ensure that correct application is consistently achieved.