LPCB news

BRE Global Response to 'Mist Conceptions'
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The BRE Trust watermist project referred to in FRM's 'Mist Conceptions' article was a research programme, involving industry partners, that aimed to provide information and experimental data about the mechanisms and critical parameters that may influence the effective performance of watermist systems. The project was designed to consider office type fires, or more broadly, a scenario representative of large commercial low hazard occupancy. This work was funded by the BRE Trust to deliver independent public domain information for specifiers, regulators, insurers and end users to assist them regarding the appropriate use of watermist systems for this type of application.

One of the benefits from this work is that LPCB has been able to develop an approval scheme underpinned by background research and testing and also the recent publication of the DD 8489 Part 7 document. The soon to be issued LPS 1283 *Requirements and test methods for the certification of watermist systems for use in commercial low hazard* occupancies is an approval scheme that involves an assessment of a watermist system components, design manual and with fire testing to DD 8489-7 test protocols. It will also require additional fire tests to broaden the application of the results and increase confidence that the system has been robustly tested and will be reliably effective for its intended application. The scheme employs a methodology for defining the scope of each application and specifies appropriate limits of use.

Confidence in the LPCB approval test specification has been gained through the research that focussed on the parameters and variables that affect successful watermist systems.

There will be those who disagree with the interpretation of the data that has been produced, however BRE Global would like to emphasise that the work was undertaken in a fully open manner using information that was available at the time and with the full engagement of industry key stakeholders. Concerns regarding fire load and ventilation are well founded and test evidence has shown watermist fire performance may be critically influenced by these parameters. Ultimately LPCB are aiming to approve watermist systems that are robust to small changes in individual parameters.

Sprinkler systems have a long history of successful operation based on prescriptive design rules. It is generally accepted that, due to the diversity of water mist system design, the use of lower water coverage rates and design factors which impact upon them, such a prescriptive approach is not possible with watermist systems.

The specific study was with full scale testing concentrated on large compartments and open space areas in buildings, with relatively high ceilings. This is an area where BRE Global determined that the limits of application of watermist systems had not been extensively researched and where there was no robust data in the public domain, and where particular care will be needed to ensure systems deliver what is expected of them. Seemingly it is this

part of the work that has caused most interest, as most of the tested watermist system arrangements were not found to perform as designed. . This does not mean that watermist systems cannot protect these scenarios, it simply demonstrates that it is necessary to prove performance in different scenarios by testing. From the broad study, BRE Global and LPCB are satisfied that watermist can be an appropriate technology for the protection of commercial low hazard occupancies. This has led to the production of the LPS 1283 approval scheme. As with all LPS standards, LPCB welcomes comments of a technical or editorial nature and these should be addressed to "the Technical Director" at enquiries@breglobal.co.uk.

The research work was completed in 2009 prior to the completion of the British Standard watermist drafts for development documents (DD). BRE Global fully participated in the committee sharing the test findings from the research to inform the standard development.. BRE Global support the BSI documents that for the first time give clear guidance on how a watermist system should be designed and installed, and most importantly, they link a particular tested product to an application which has a specified scope of application..

It is hoped that the BSI draft for development documents, with further work (e.g. component tests) and more test experience, can be developed into full British Standards. It is now up to specifiers and purchasers of watermist systems to take advantage of the DD's and the LPCB scheme. They set the standard for UK land based low hazard commercial applications.