

COMPATIBILITY ISSUES OF CPVC PIPEWORK USED IN SPRINKLER SYSTEMS



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Introduction

This technical document has been issued to raise awareness around fire sprinkler system installations using CPVC plastic pipe pipes and fittings suffering damage due to incompatibilities with certain materials when in contact.

What is it and why?

CPVC is a thermoplastic produced by chlorination of polyvinyl chloride (PVC) resin. CPVC pipework and fittings are used in fire sprinkler systems notably as they withstand a wider range of temperatures than standard PVC.

What are the Warranty providers concerns?

CPVC is resistant to most water-soluble chemicals but is not resistant to hydrocarbon-based chemicals. Contact with ancillary products and materials containing these chemicals can result in pipes and fittings becoming brittle and fracturing.

Ancillaries include, but are not limited to mastics, glues (solvent cements), fire sealants, and fire stopping materials.

CPVC materials are considered to have a potential durability of 50+ years when installed correctly. The concern is that any damage that weakens the material may affect its expected durability.

Warranty stance

Our stance is any works to seal or close gaps around pipe penetrations in structure shall be suitable for the intended purpose. Any sealant used shall be fully compatible and not diminish the durability of CPVC pipes and/or fittings.

What Developers should action after reading this document?

Developers design teams and specifiers should use relevant industry guidance for the design of fire sprinkler systems e.g. BS 9251 Fire sprinkler systems for residential and domestic occupancies – Code of Practice.

Manufacturers of CPVC fire sprinkler pipes and fittings are now providing access to product compatibility lists to ensure any risk of damage to CPVC pipes and fittings are avoided. Developers design teams and specifiers are advised to review these regularly.

On appointing specialist contractors to undertake any works that may directly affect or interact with fire sprinkler system pipework and fittings e.g. execution of fire stopping work, application of fire sealants, etc., Developers should ensure that they instructed to work explicitly to the issued designs and specification and strictly adhere to manufacturer's installation instructions, including curing times, joint preparation, and support spacing.

Appointed specialist contractors must refrain from substituting materials.

Site teams should have appropriate quality assurance (QA) procedures for fire sprinkler system installations, and have all relevant documentation available on request to prove and demonstrate that only compatible materials in contact with the CPVC pipework have been procured and used on site.

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Site teams should also ensure that all other contractors involved in the project are aware of the importance of not disturbing or adjusting materials around these elements. Where materials are disturbed or suffer accidental damage, it should be reported to the site team.

Materials should not be replaced with non-compatible materials. Where materials are disturbed or suffer accidental damage, or work has been carried out using non-compatible materials, the matter should be recorded in the site QA records. In such instances, it is advisable to conduct consultation with the Developers design teams and specifiers alongside any appointed specialist contractor and carry out remediation to a documented and approved methodology.