



PROTECTING PEOPLE & PROPERTY

Quelfire Ltd Unit 3, Millbuck Way, Springvale Industrial Estate, Sandbach, Cheshire, CW11 3HT

T: 0161 928 7308

E: sales@quelfire.co.uk

W: www.quelfire.co.uk

Company Reg No: 2172353

VAT Reg No: 150 6701 91

To Whom It May Concern

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Statement on the firestopping of plastic ventilation ducts through floors and ceilings.

In order to address the question about the suitability of using a QWR Fire Collar or a QRS Fire Sleeve to firestop plastic ventilation ducts as they penetrate fire compartment floors, this statement seeks to clarify what test data is available, and to highlight some key considerations so that clients can, as always, satisfy themselves, of the suitability of products in a given situation.

First, it needs to be understood that there are many variables that have to be taken into consideration when fire testing products in accordance with BS EN1366-3, and many variables when it comes to actual construction scenarios some of which may or may not be covered by the test data obtained.

You can read more about the “Scope of Application” of the QRS Fire Sleeve as an example in the WarringtonFire Classification Report WF360281/C Issue 3 where on pages 17 to 21 you will note the following detail in particular, but not exhaustive:

- Orientation – test results are only applicable to the orientation in which the penetration seals were tested.
- Supporting construction – flexible wall data covers rigid but not vice versa, walls classified in accordance with EN13501-2 etc.
- Service Support - the distance from the surface of the separating element to the nearest support should be as tested or less.
- Closure devices – interpolation of data to cover other sizes within a range.
- Pipe end configuration – Capping and Uncapping of pipes to cover unventilated and ventilated systems.
- Pipe and insulation material – test data for certain materials covers other certain material types.
- Pipe wall thickness – the actual thickness of the plastic pipe.
- Separations – the distance between each seal.

Continued on page 2, 3 & 4.



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Continued from page 1.

On the subject of “Supporting Construction” there are a number of variables in reality however the test standard is written on the basis of a concrete floor and whilst we have done some testing on timber floor constructions (to the principles of BS EN1366-3) these have not been with ventilation duct penetrations and crucially were on very specific non-loadbearing floor constructions with fire rated plasterboard, solid timber joists and chipboard on the top. In reality there are a number of floor systems using solid, webbed and I-type joists both with and without floorboards on the top which could all make a significant difference in a fire situation.

The subject of “Pipe End Configuration” is open to interpretation as arguably pipe systems are never open to the elements without at least something on the end whether it is a unit, trap, cowl, etc. Much of Quelfire’s test data is in fact tested with some form of capping although recently we have added some data for uncapped/uncapped arrangements which is detailed in the documentation and on each standard installation detail.

When it comes to “Pipe Wall Thickness” it is important to understand that plastic ventilation ducts are often significantly thinner than plastic pipes of the same size. In a fire scenario, it is effectively a requirement that there is a simultaneous reaction, as the plastic softens and melts, the intumescent reacts and plugs the hole. The challenge with thinner wall ventilation ducts is that they could potentially melt prematurely before the intumescent has had time to expand and completely seal the hole, resulting in a failure.

Continued on page 3 & 4.



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Continued from page 1 and 2.

Below is a summary of the main test data that we have for the QWR Fire Collars and QRS Fire Sleeves:

Product Name	Wall or Floor	Substrate Type	Pipe or Duct	Fire Rating	Capping	Document References*
QRS Fire Sleeves	Wall	Flexible or Rigid Wall	Duct	Up to EI120	U/U	ETA20-1206 & Classification Reports WF360281C & WF401716.
QWR Fire Collar	Wall	Flexible or Rigid Wall	Pipe	Up to EI120	U/C	ETA20-1206 & Classification Reports WF360281C & WF401716.
QWR Fire Collar	Floor	Concrete Floor	Pipe	Up to EI240	U/C	ETA20-1204 & Classification Report WF360281C, WF401716 & UL4790096347.
QWR Fire Collar	Floor	Concrete Floor	Pipe	Up to EI60	U/U	ETA20-1204 / Classification Report WF360281C, WF401716 & UL4790096347.
QWR Fire Collar	Floor	PB Ceiling / Timber Joist	Pipe	Up to EI90	U/C	Test Reports: WF410003 & WF504204.
QWR Fire Collar	Floor	Concrete Floor	Duct	Up to EI240	U/C	Test Reports WF356402 & WF366873.

*Some details may also be in individual test reports pending inclusion in future Classification Reports and ETA's.

Continued on page 4.



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Continued from page 1 to 3.

As there are so many variables, it is not commercially viable for us to test every scenario that could arise and so it may be that you, as a client, needs to undertake, or rather instruct the undertaking of, a technical assessment in lieu of test evidence. Technical assessments should be carried out in accordance with the [PFPP guidelines](#), by a suitably qualified person/fire engineer and based on any available primary test data for the penetrations and the substrate construction.

We are of course happy to provide any test data that we possess deemed relevant directly to the person nominated to carry out the assessment - all requests should be sent direct to technical@quelfire.co.uk – but for avoidance of doubt it should be understood that we as Quelfire are not able to comment on the suitability of products where it differs from what has been tested, or pre-empt/comment on the outcome of any assessment that is made.

Best regards,



Craig Wells | Sales Director



Office: 0161 928 7308 | Email: CraigWells@quelfire.co.uk

Quelfire Limited | Unit 3 Millbuck Way, Springvale Ind. Est., Sandbach, CW11 3HT

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