684 a

The Loss Prevention Certification Board (LPCB)
Red Book Volume 1 2005 Part 5: Section 21.1 - Plastic Pipes and Fittings

Notes and some interpretations of the above mentioned LPCB information for sprinkler systems made out of plastic pipes. Enclosed also find the aquatherm guidelines.

Plastic pipes and fittings have been approved to LPC1260 (Requirements for testing plastic pipes and fittings for sprinkler systems).

The 'scope of use' of plastic pipe shall be agreed with the supplier, purchaser/installer, authority having jurisdiction, and/or insurer in accordance with documented supplier 'Installation Instructions' but subject to the following criteria taking precedence.

1.
Use of plastic pipe an fittings is subject to water authority agreement for the territory concerned.

2.
LPCB Approved quick response sprinklers shall be used with exposed (i.e. fire exposure) plastic pipe and fittings.

Information and interpretation on 2:
It is allowed to use firestop in case of exposed installations, including car parks. The above quick response sprinklers may only be applied here. Normally, these sprinklers have a 3 mm glass tube. On the other hand, standard sprinkler heads dispose of a 5 mm glass tube. The releasing speed depends on the RTI value (response time index). This results from a formula by which the response characteristic of sprinklersregarding fire heat is described at laboratory conditions. Additionally values of fire gas temperature, wind temperature and wind speed are considered here.

3.
Plastic pipe and fittings are suitable for use only with wet pipe systems.

Information and interpretation on 3:
Dry systems are mainly used in frost-endangered areas. This system is besides used in areas in which corrosion of metal pipe systems strongly affects the operation service of the sprinkler system. Since dry systems require a higher technical effort, thus being more cost-intensive, the use of wet systems is favoured in most cases.

firestop is corrosion-proof. The application of dry systems is thus limited to frost-endangered areas.

4.
Use of additives is only permitted in accordance with the manufacturers installation instructions.

Information and interpretation on 4:
When adding chemical substances into the Sprinkler-water, the chemical resistance of this medium to the respective plastic pipe system has to be checked in advance. Ideally, a written release should be given by the pipe system manufacturer.

5.
Care should be exercised to ensure that the adhesive joints are adequately cured, in accordance with the manufacturer's installation instructions, prior to pressurisation.

Information and interpretation on 5:
This point does not concern the firestop system, since the connections are made by fusion welding. Adhesive joint techniques are not used in case of firestop. The fusion technique ensures a pressurization after only a few minutes and thus the system can directly be operated. Long cure times of the adhesive need not be considered in case of firestop. Detailed installation instructions can be learned from the firestop catalogue.

6.
Plastic pipe and fittings shall not be installed outdoors.

7.
Where plastic pipe and fittings are exposed (i. e. fire exposure), the system shall be installed close to a flat ceiling construction.

Information and interpretation on *7*:
In case of exposed pipe systems the distance to the ceiling should be as close as possible so as to avoid fire loads above the sprinkler pipe. The distance's size is not defined here. The installation is limited to flat ceilings. Inclined (f.i. stairs) or also vaulted ceilings are to be avoided.

8.
Sprinkler systems which employ plastic pipe and fittings shall be designed where possible to ensure that all pipe sections are flown through and consequently dead rooms are precluded.

Information and interpretation on 8:
Accordingly, every ending pipe must be provided with a sprinkler head. By this any dead room will be precluded.

General information on LPCB:
In accordance with the above mentioned LPCB guidelines, plastic pipe systems are used in connecting and distributing pipes to the sprinkler head, as well as in case of risers. The use of "upward" sprinklers is possible according to LPCB.

Notes relating to aquatherm pipes and fittings:

1.
The system of pipes and fittings must be installed in accordance with the aquatherm installation instructions, which include the LPCB condition of use agreed with aquatherm.

Information and interpretation on 1:
The aquatherm installation instructions are strictly to be observed, which can be learnt from the respective documentations.

2.
The maximum normal ambient temperature of use shall not exceed 70°C.

Information and interpretation on 2:
In rooms where firestop has been installed the room temperature of 70°C shall not be exceeded at normal conditions (not in case of fire).

3.
The products shall only be installed by LPCB Certificated or Registered Installing companies (see Part 5, Section 1A and 1B above) or by firms outside the UK who can provide evidence of personnel training in the installation of the product. It is recommended that firms engaged in the installation of this product also be Certificated to ISO 9000.

Information and interpretation on 3:
aquatherm of course offers these firestop product trainings at the training centre of the Attendorn headquarter.

aquatherm

aquatherm GmbH
Kunststoff-Extrusions- und Spritzgießtechnik
Biggen 5 · D-57439 Attendorn
Phone: +49 (0) 2722 950-0 Fax: +49 (0) 2722 950-100
Mail: info@aquatherm.de Web: www.aquatherm.de