

***bvfa*-Opinion on Teflon seals in sprinklers / UPFAS ban Status 21/09/2023**

1 Initial situation

PTFE sealing materials (PTFE seals) are used to seal the sprinkler. All currently approved sprinklers (VdS, FM, UL) and sprinklers requiring CE marking according to EN 12259-1 are affected. A ban on PTFE-sealing materials literally means a ban of sprinklers and would have devastating effects on the protection of people, property and the environment.

2 Benefits of sprinklers for the environment, life and limb of persons and prevention of property damage

Sprinkler systems exist since the end of the 19th century and are therefore one of the most proven fire protection devices on the market. They are extremely durable and at the same time extremely reliable, because their selective effect (only sprinkler heads directly above the source of the fire are triggered) prevents the spread of fire, contains the fire and in many cases even extinguishes it completely. Upon activation of a sprinkler system also the fire brigade is automatically alarmed, which then carries out the remaining extinguishing work. Sprinkler systems are widely used throughout industry - they protect against fire hazards to people, property and the environment and safeguard production processes. Every fire fought by sprinkler systems prevents the release of huge quantities of environmentally hazardous substances. Sprinkler systems are therefore also sustainable because buildings are preserved and the products they contain do not have to be produced again.

3 Sprinkler systems according to building regulations

Sprinkler systems are required by law in many buildings to enable the safe evacuation of people and animals and to support safe extinguishing measures by the fire brigade. Without sprinklers, many buildings cannot be built in compliance with legal requirements in place. Consequently considerable economic damage will follow a potential ban of PTFE for use in sprinklers.

4 No danger to the environment

The PTFE seal used behaves inertly to the environment. PFAS can no longer enter the environment after being processed as a seal. On the contrary, as already explained, sprinklers make a significant contribution to drastically reducing the harmful effects of fires on the environment.



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5 Property of the PTFE seal - possible substitutes

A very long time ago, metal-to-metal seals (made of lead, among other materials) were used, but they were not nearly as reliable as PTFE and were therefore no longer used.

There are currently no known substitutes for PTFE seals with the same properties:

- a. PTFE remains flexible over a very long time of use hence
- b. Effectively seals sprinkler installations.
- c. PTFE does not interact with the sealed metals nor with the contained chemicals over the course of its entire lifetime.

Sprinklers are extremely durable: the service life of sprinkler heads can last 50 years or more. During this entire time, it is imperative to ensure a reliable seal and yet immediate triggering in the event of a fire. If, for example, the sealing material were to stick to the closing element of the sprinkler due to unsuitable sealing, this could lead to failure (i.e. non-opening) of the sprinkler with all the resulting risks to life and limb, the environment and property damage. Alternative sealants would first have to be developed, subjected to years of testing and then certified by third parties before they could be used. In addition, the capacities of test centers and notified bodies are not sufficient to carry out the corresponding tests for all manufacturers within a short period of time. Therefore, the use of PTFE in sprinklers must remain permitted.

6 Basic data

The sprinklers of bvfa member companies are used worldwide. Every year, around 20 million sprinklers are installed in Germany and Europe – all sealed with PTFE.

The amount of PTFE per sprinkler is typically 0.035 g. This is equivalent to only about 700 kg of PTFE. This corresponds to only about 700 kg of environmentally neutral PTFE per year.

PTFE has been used in the manufacture of sprinklers for at least 40 years. This means that several hundred million sprinklers are installed in fire extinguishing systems throughout Europe.

7 Exemption for sprinklers

Due to the lack of equivalent substitute sealants, an exemption for further use in sprinklers systems is mandatory. The following reasons are decisive:

- Sprinklers are essential for fire protection. If they could not be used, the risk to life, health, property and the environment would be disproportionately increased.
- PTFE sealing materials must be allowed to continue to be used because the seal itself does not endanger the environment.