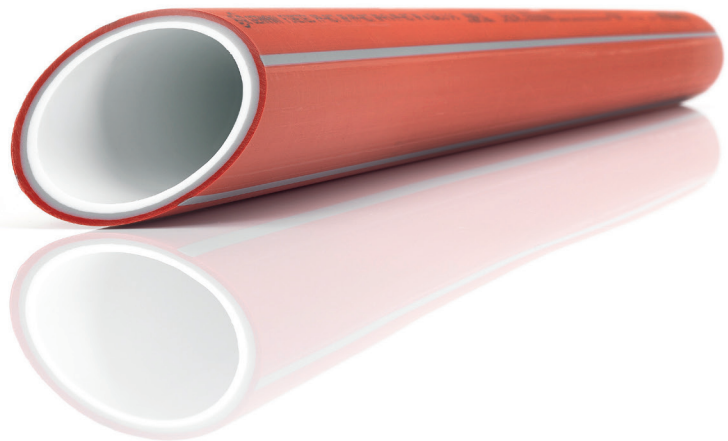




FIRETEC

THE MODERN FIRE PROTECTION



- Bänninger Group of Companies
- Worldwide
- Made in Germany



FIRETEC - THE MODERN FIRE PROTECTION

FIRE PROTECTION WITH PLASTIC PIPES



FIRE PROTECTION WITH PLASTIC PIPES? YES, IT WORKS!

Fire protection is an essential requirement for modern buildings as well as for renovation of older buildings. Main components for so called active fire protection are sprinkler systems and wall hydrants.

With **conTEC PP-CFR FIRETEC**, Bänninger offers a modern pipe system for sprinklers according EN 12845 as well as for wall hydrants, approved by FM and AENOR.

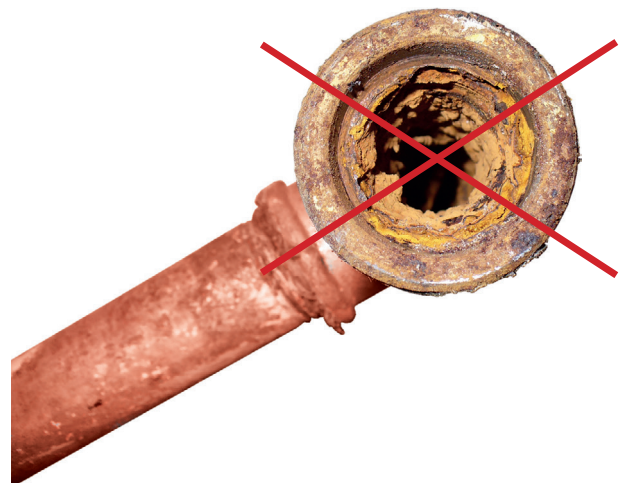
The development of new, high-performance plastic materials opens up new opportunities for such pipe systems with regard to lower installation cost, longer lifetime and higher operational readiness.

In water supply lines (for fire protection applications) dirt particles can occur in a significantly higher level than known from drinking water systems. Due to the long dwell times of the fire-fighting water in the pipe system and the related corrosion, especially of galvanized materials, a significant number of corrosion products and incrustations builds up which can be washed during water outtake.

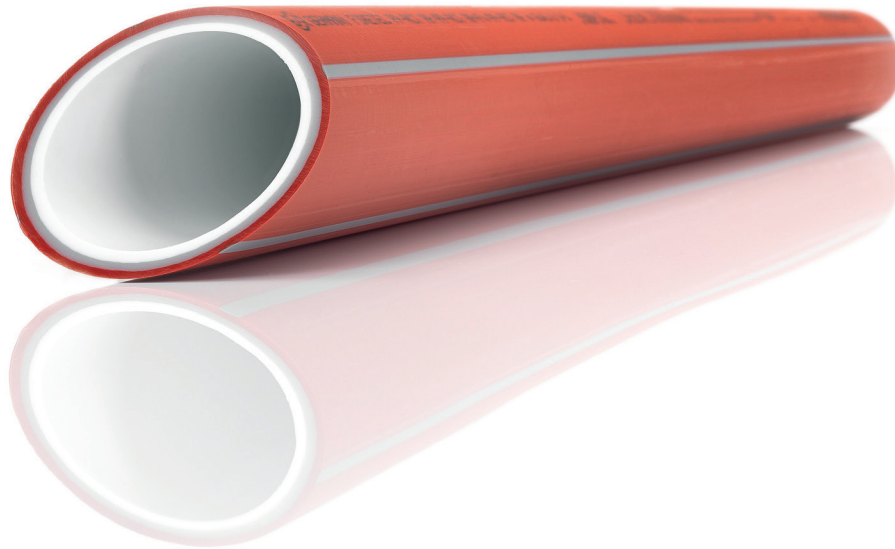
Being a corrosion free, long-lasting system, FIRETEC saves resources and protects the environment. Due to the new additives, fire protection and environmental protection are given in parallel.

ANTI-CORROSION

With FIRETEC, corrosion of metallic pipe systems for sprinklers and wall hydrants is no longer an issue. Traditional metallic sprinkler systems often face corrosion problems caused by test filling with water which creates a perfect atmosphere for corrosion inside the pipe. As a result, connections show leakages and sprinklers fail due to rust particles blocking them.

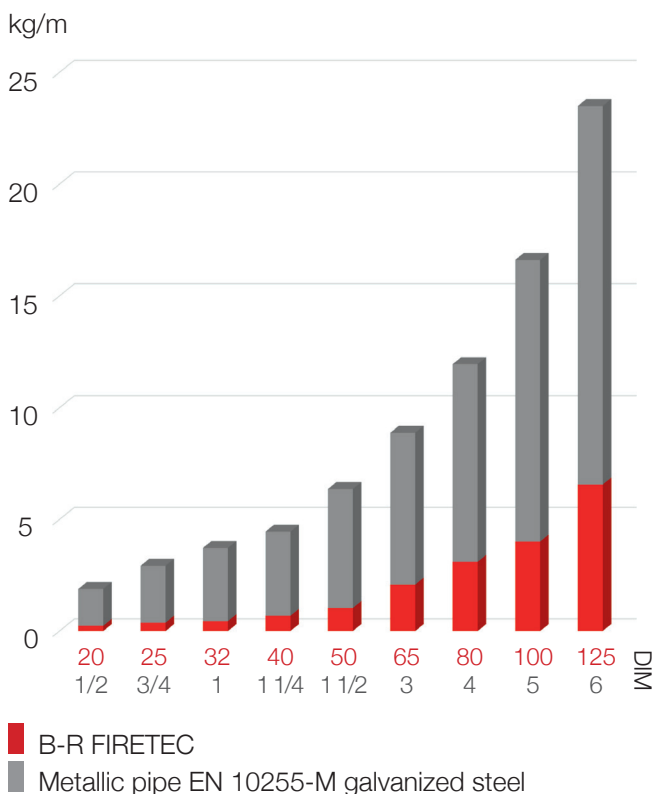


As a pipe system made from high performance plastic material, FIRETEC is free of corrosion over the entire lifetime, independent on the number of filling tests. The homogeneous connections are durably tight without maintenance.



WEIGHT

FIRETEC has a significantly lower weight than traditional metallic pipe systems. Depending on the size, FIRETEC is 60 to 75% lower in weight than galvanized steel pipe systems. The low weight makes installation easier and reduces the load on the fixing structures which can be optimized with regard to cost savings.

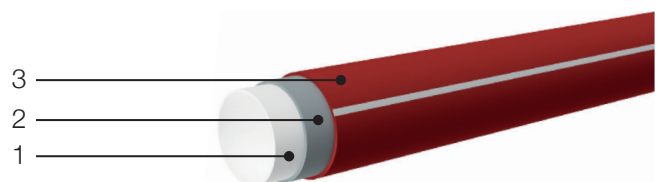


PIPE DESIGN

The red coloured material indicates the intended use at once, additional coloring work is not necessary.

The plastic material used is suitable for drinking water.

1. Inner layer in white RAL 9003 in PP-CFR
 - resistance to UV radiation
2. Middle layer in grey RAL 7042 in PP-CFR
 - glass fibers prevent linear expansion
 - high mechanical resistance to pressure and fatigue
3. Outer layer in red RAL 3000 with silver stripes RAL 9006 in PP-CFR
 - resistance to UV radiation
 - the antioxidant protection minimizes degradation caused by exposure to sunlight



Due to the UV resistant material, installation in areas exposed to daylight is possible without additional protection. The low expansion factor allows an installation similar to metallic systems.

FIRETEC - THE MODERN FIRE PROTECTION PLANNING INSTRUCTIONS

REACTION TO FIRE

Due to the reaction-to-fire class "B s1d0" according EN 13501, the system is approved for open installations below ceilings and in front of walls.

EN 13501 has the following classes concerning the reaction to fire:

- A1, A2: Non-combustible materials
(only metallic and inert material)
- B: Hardly combustible materials
(with sub classes concerning smoke and dripping)
- C, D: Combustible materials
(with sub classes concerning smoke and dripping)
- E: Easily combustible materials
- F: Materials not submitted to the test of reaction to fire

APPROVAL

FIRETEC is approved for sprinkler systems according EN 12845 as well as the connection of wall hydrants in buildings with light and medium risk, like residential buildings, schools, office buildings, shops and other commercial buildings.

The approval was done according to FM rules and AENOR RP 001.84.



AENOR approval 001/006976
for sprinkler



AENOR approval 001/006966
for wall hydrants

GENERAL CONSIDERATIONS (APPLICABLE FOR GERMANY)

Sprinkler and fire-fighting installations, in planning and service, as well as maintenance, are subject to the DIN standards DIN 14462, DIN 14464, DIN EN 12259 and 12845 as well as CEN/TS 14972/DIN SPEC 91216.

Fire-fighting installations which are connected with the drinking water installations are liable to the laws concerning drinking water quality/hygienic aspects, as well the DIN 1988-600. By that, a separation is given related to the standards but no restriction in terms of drinking water quality.

Firefighting installations connected to drinking water installations should be separated due to hygienic aspects.

For plastic pipe sprinkler systems, a complex (and expensive) anti-corrosion protection according to DIN EN 12502 is not necessary.

Please note that it might be necessary to insulate pipes passing through a fire wall or a fire-proofed ceiling with a non-flammable insulation in the wall duct area. Fireprotection-collars are not suitable for pipes in sprinkler and wall hydrant applications.

If dry fire-fighting pipes pass sections or rooms with fire load, the pipes might have to be coated fire resistant according the rules/guidelines. This is not required in rooms that are protected by automatic fire-fighting systems.

The drafting and observation of an installation / operation guideline are part of a standardized firefighting system. In any case, damages caused by a neglect of the installation / operation guideline or by an operation beyond the standard requirements / standard operating data are excluded from warranty.

Please note that insurance companies might have own technical rules/guidelines concerning firefighting pipe systems for the connection of wall hydrants and sprinklers.

INSTALLATION

All approved sprinkler heads, valves and other equipment with standard threads can be used in combination with FIRETEC. Hanging, horizontally mounted and up-right sprinkler heads can be used.

Standard heating element welding machines are used. This joining method is proven over decades and works without open flames and sparks.

Length expansion has to be considered during design. Due to the glass fiber middle-layer, the expansion is reduced significantly to a level of metallic systems.



Saddle pieces for retrofit installation in an existing pipe system allow an optimized positioning of sprinklers at reduced installation efforts.

In comparison to T-pieces, the pipe is not interrupted and only one welded connection is required to create an access for a sprinkler head. Also for manifolds saddle pieces reduce the number of welded connections.

JOINING TECHNOLOGY



Socket-Welding



Flange connection

APPLICATION FIELDS



Sprinkler systems



Wall hydrant systems

DIMENSIONING

The whole pipe work, from the main pipe to the sprinkler / wall hydrant, is covered by the dimensions d 20 – 160 mm (DN 15 – 125) according to DIN 8077.

The smooth surface allows high flow velocities at low operating pressures (without cavity corrosion problems). Since FIRETEC is corrosion free, the inner surface does not change during the entire service life.

Information concerning the design of a sprinkler system are stated in EN 12845.

According to the generally recognised codes of practice, flow pressures above 8 bar at the tapping points for fire-fighting water have to be excluded.

PIPE WORK, FIXING AND VALVES

In case valves are to be installed in the main pipe of fire-fighting systems, they have to be designed in way that they do not adversely affect the firefighting system.

For mounting and fixing of firefighting pipelines only approved fixing devices (like clamps, plugs and so on) are allowed.

Installed sprinklers have to be secured in way that an actuation of the sprinkler has no influence on the function of the sprinkler and the pipe system.

In order to prevent deflection of the pipes, the fixing distances shown in the B-R Technical Manual have to be observed.

MAINTENANCE/TEST/INSPECTION

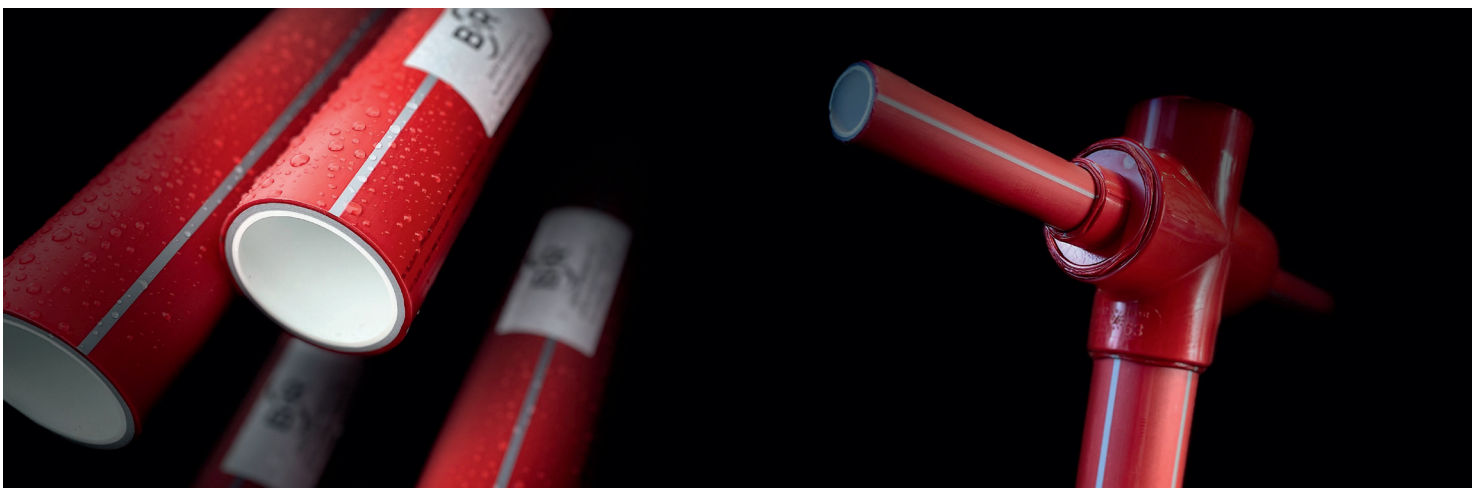
The function of sprinkler systems and wall hydrants in buildings has to be checked frequently, according to the fire-protection rules/laws.

FIRETEC is a plastic pipe system and hence corrosion and maintenance-free. Tests and inspections have to be carried out just for valves, sprinkler-heads, hydrant hoses etc.

FIRETEC



- FIRETEC is a plastic pipe system and hence corrosion and maintenance-free
- Tests and inspections have to be carried out just for valves, sprinkler-heads, hydrant hoses etc.
- Smooth inner surface
=> no incrustations can build up
- Low weight
=> easy handling / fast assembly
- Less manpower (easier to lift)
- Homogeneous, longitudinally strong connections
- No seals required
- High chemical resistance
- UV-resistant
- No cleaning / peeling of pipes required
- Prefabrication of assemblies possible
=> WORKTEC
- High impact strength
- Thinner pipe walls and increased flow compared to PP-R
- Low expansion due to fiber layer
- Pressure test 3bar air and 15bar water (leakage test)



S METALL / CPVC

- Corrosion (test filling with water creates a perfect atmosphere for corrosion inside the pipe) with can cause leakages
- Sprinklers can get blocked by loosened incrustations
- High weight
- More difficult to install (complexity)
- More manpower required for lifting (handling)
- Higher load capacity for pipe-fixings
- Has to be glued
- Very sensitive to impacts
- Lifetime of bonding dependant on temperature / curing conditions
- Adhesive can cause health issues - solvent-based





RELIABLE PARTNER WORLDWIDE...



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