FIRETEC

PIPE SYSTEM FOR 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 retrofit for older buildings. Main components for so called active fire protection are sprinkler systems and wall hydrants.

Bänninger offers with FIRETEC a modern pipe system for sprinklers according EN 12845 and for wall hydrants, approved by AENOR and FM.

The development of new high-performance plastic materials gives new opportunities for such pipe systems concerning lower installation costs, longer lifetime and higher operational readiness.

In water supply lines (for fire protection applications) dirt particles could occur in a significant higher level than known in drinking water systems. Due to the long stand still 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 are built up which can be washed out in case of water outtake.

As a corrosion free, long lasting system, FIRETEC saves resources and protects environment.

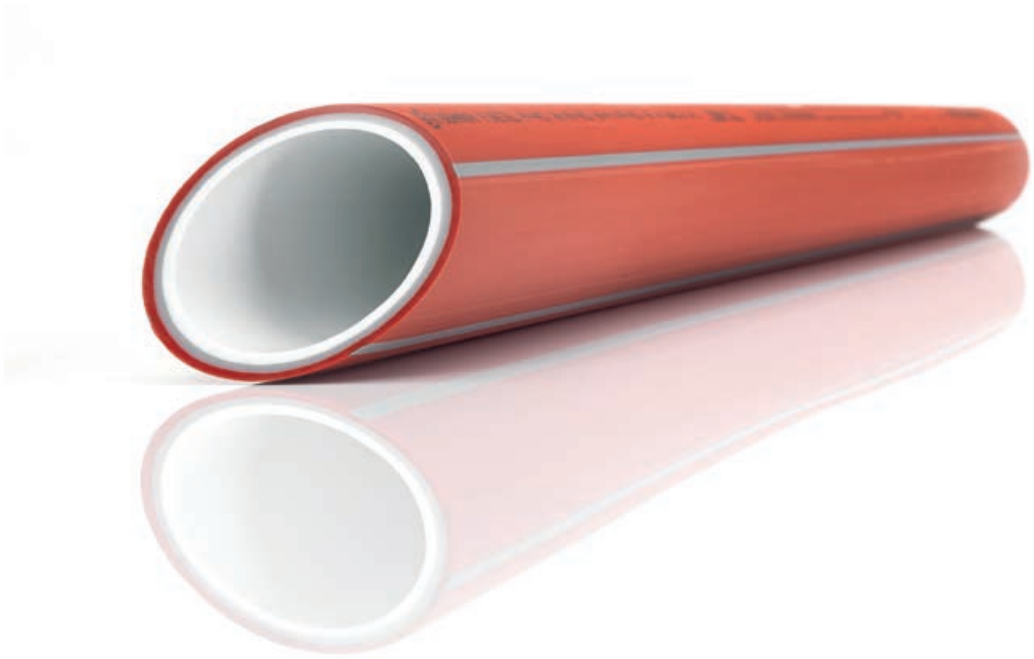
Due to the new additives, fire protection and environmental protection are given in parallel.

Anti-corrosion

With FIRETEC, corrosion of metallic pipe systems for sprinklers and wall hydrants is a problem of the past. Traditional metallic sprinkler systems often face the problem of corrosion caused by test filling with water which creates inside a perfect atmosphere for corrosion. As a result of this corrosion, connections are show leakages and sprinklers fail in case of an incidence due to rust particles blocking them.

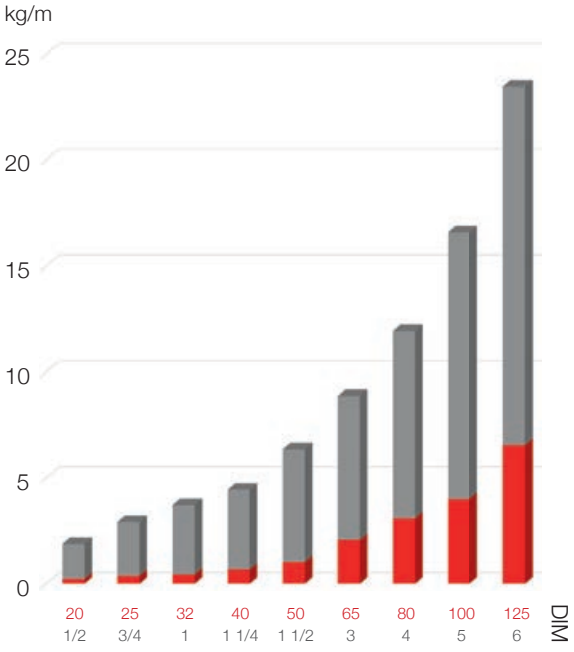
FIRETEC, as a pipe system made from high performance plastic material, is free of corrosion over the full lifetime, independent how many filling tests had been done. The substance jointed welding connections are long-lasting tight without maintenance.

FIRETEC – THE MODERN FIRE PROTECTION



Weight

FIRETEC has a significant lower weight than traditional metallic pipes systems. Depending on the size, the weight of FIRETEC is between 60 and 75% lower than galvanized steel pipe systems. The low weight makes installation easier and reduces the load on the fixing structures, allowing optimized structures, thus saving costs by that.



BR FIRETEC
Metallic pipe EN 10255-M galvanized steel

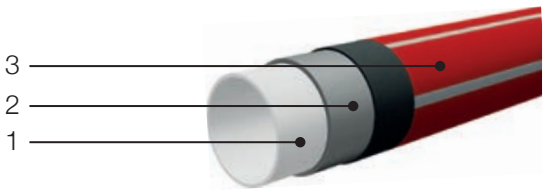
Pipe design

The red coloured material indicate the intended use at once, additional coloring work is not necessary. The used plastic material 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
   - microfibers 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 sun exposure



Due to the UV resistant material, installation in daylight areas is possible without additional work.

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 installation 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 and the connection of wall hydrants in projects/buildings with light and middle risk, like residential buildings, schools, office buildings, shops and other business buildings.

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

AENOR approval 001/006976 for sprinkler.

AENOR approval 001/006966 for wall hydrants.

in process

General considerations
(applicable for Germany)

Sprinkler and fire-fighting installations, in planning and service, as well as maintenance, are liable 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 installation 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 not for the drinking water quality.

Fire-fighting installations connected with drinking water installations should be separated due to hygienic aspects.

For plastic pipe sprinkler systems, an often extensive (and expensive) anti-corrosion protection according DIN EN 12502 is not necessary.

Please note that it could be necessary to insulate pipes in case of passing a fire wall or a fire-proofed ceiling with a non-flammable insulation in the passing area. Fire-protection-collars are not suitable for pipes in sprinkler and wall hydrant applications.

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

The preparation and consideration of an installation guideline and a manual are part of a fire-fighting system according standards. Damages caused by non-consideration of the installation guideline and the manual or the running of the system beyond the standard requirements and standard operating data are excluded in any case from the warranty.

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

FIRETEC – THE MODERN FIRE PROTECTION

Installation

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

Standard heating element welding machines are used. The decades proofed joining technology by heating element welding works without open flames and sparks.

The design has to take into consideration the axpansion of the pipes system.
Due to the glass fiber middle-layer, the expansion is reduced in a way that the installation could be done like metallic systems.

Saddle pieces for afterword installation in already installed pipes allow an optimized positioning of sprinklers at reduced installation efforts.
In comparison with T-pieces, the pipe is not interrupted and it is only one welding connection needed to get an access for a sprinkler head. Also, for the access to a distribution pipe, saddle pieces reduce the number of welding connections.

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 DIN 8077. The smooth surface allows high velocities at low pressure losses (without cavity corrosion problems). And, as FIRETEC is corrosion free, the surface doesn't change over the life time.

Information concerning the design of a sprinkler system are given 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

If valves are installed in the main pipe of fire-fighting systems, they have to be built in way that no negative influence on the fire-fighting system could occur.

For mounting and fixing of fire-fighting pipe work only approved fixing devices (like clamps, plugs and so on) are allowed.

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

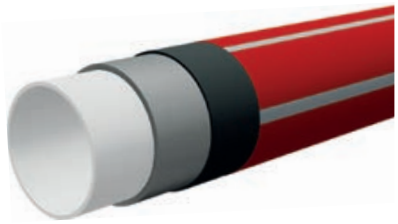
In order to avoid deflection of the pipes, the fixing distances shown in the tables have to be considered.

Maintenance/test/inspection

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

FIRETEC, as a plastic pipe system, is corrosion-free and by that maintenance-free. Tests and inspections can focus on valves, sprinkler-heads, hydrant hoses and so on.

FIRETEC - THE MODERN FIRE PROTECTION
RANGE OF PRODUCTS



Pressure pipe FIRETEC	D [mm]	e [mm]	DN [mm]	di [mm]	SDR	L [m]	KG	VE1 PU1
6F12 0640 2F	**20**	2,8	15	14,4	7,4	4	0,150	160
6F12 0740 2F	**25**	3,5	20	18,0	7,4	4	0,233	100
6F12 0840 2F	**32**	4,4	25	23,2	7,4	4	0,375	60
6F14 0940 2F	**40**	3,7	32	32,6	11	4	0,445	40
6F14 1040 2F	**50**	4,6	40	40,8	11	4	0,682	20
6F14 1140 2F	**63**	5,8	50	51,4	11	4	1,03	12
6F14 1240 2F	**75**	6,8	-	61,4	11	4	1,44	8
6F14 1340 2F	**90**	8,2	65	73,6	11	4	2,08	8
6F14 1440 2F	**110**	10,0	80	90,0	11	4	3,10	4
6F14 1540 2F	**125**	11,4	100	102,2	11	4	4,01	4
6F14 1740 2F	**160 ***	14,6	125	130,8	11	4	6,56	4

* Not a stock item

d [mm]	Elbow 90°	Elbow 45°	Tee 90°	Cross	Socket	Cap	Flange adaptor socket
20	6411 0690 2F	6411 0645 2F	6511 0600 2F	–	6311 0600 2F	6341 0600 2F	6331 09F0 2F
25	6411 0790 2F	6411 0745 2F	6511 0700 2F	–	6311 0700 2F	6341 0700 2F	6331 10F0 2F
32	6411 0890 2F	6411 0845 2F	6511 0800 2F	6551 0800 2F	6311 0800 2F	6341 0800 2F	6331 11F0 2F
40	6411 0990 2F	6411 0945 2F	6511 0900 2F	6551 0900 2F	6311 0900 2F	6341 0900 2F	6331 12F0 2F
50	6411 1090 2F	6411 1045 2F	6511 1000 2F	–	6311 1000 2F	6341 1000 2F	6331 13F0 2F
63	6411 1190 2F	6411 1145 2F	6511 1100 2F	–	6311 1100 2F	6341 1100 2F	6331 14F0 2F
75	6411 1290 2F	6411 1245 2F	6511 1200 2F	–	6311 1200 2F	6341 1200 2F	6331 15F0 2F
90	6411 1390 2F	6411 1345 2F	6511 1300 2F	–	6311 1300 2F	6341 1300 2F	
110	6411 1490 2F	6411 1445 2F	6511 1400 2F	–	6311 1400 2F	6341 1400 2F	
125	6411 1590 2F	6411 1545 2F	6511 1500 2F	–	6311 1500 2F	6341 1500 2F	

d1-d2 [mm]	Tee 90° red.	Cross red.	Reducer
25-20	6521 0706 2F	–	6321 0706 2F
32-20	6521 0806 2F	–	6321 0806 2F
32-25	6521 0807 2F	–	6321 0807 2F
40-20	6521 0906 2F	–	–
40-25	6521 0907 2F	–	6321 0907 2F
40-32	6521 0908 2F	–	6321 0908 2F
50-25	6521 1007 2F	–	–
50-32	6521 1008 2F	6551 1008 2F	6321 1008 2F
50-40	6521 1009 2F	–	6321 1009 2F
63-25	6521 1107 2F	–	6321 1107 2F
63-32	6521 1108 2F	6551 1108 2F	6321 1108 2F
63-40	6521 1109 2F	6551 1109 2F	6321 1109 2F
63-50	6521 1110 2F	–	6321 1110 2F
75-32	6521 1208 2F	6551 1208 2F	6321 1208 2F
75-40	6521 1209 2F	6551 1209 2F	6321 1209 2F
75-50	6521 1210 2F	6551 1210 2F	6321 1210 2F
75-63	6521 1211 2F	–	6321 1211 2F
90-50	6521 1310 2F	6551 1310 2F	–
90-63	6521 1311 2F	–	6321 1311 2F
90-75	6521 1312 2F	–	6321 1312 2F
110-63	6521 1411 2F	–	6321 1411 2F
110-75	6521 1412 2F	–	6321 1412 2F
110-90	6521 1413 2F	–	6321 1413 2F
125-110	–	–	6321 1514 2F

Socket-fusion fittings d160 on request.

FIRETEC – THE MODERN FIRE PROTECTION






d [mm x Inch]	Transition fem	Transition m	T-Tee 90° fem	T-Elbow 90° fem	T-Elbow 90° m	T-Elbow 90° wall fem
20 x 1/2	6M11 0643 2F	6M11 0673 2F	6M41 0643 2F	6M21 0643 2F	6M21 0673 2F	6M31 0643 2F
20 x 3/4	–	6M11 0675 2F	–	–	6M21 0675 2F	–
25 x 1/2	6M11 0743 2F	6M11 0773 2F	6M41 0743 2F	6M21 0743 2F	–	6M31 0743 2F
25 x 3/4	6M11 0745 2F	6M11 0775 2F	6M41 0745 2F	6M21 0745 2F	6M21 0775 2F	–
32 x 3/4	6M11 0845 2F	6M11 0875 2F	6M41 0845 2F	6M21 0845 2F	6M21 0875 2F	–





d [mm x Inch]	Transition fem	Transition m	T-Tee 90° fem	T-Elbow 90° fem	T-Elbow 90° m
32 x 1	6M11 0846 2F	6M11 0876 2F	6M41 0846 2F	6M21 0846 2F	6M21 0876 2F
40 x 1 1/4	6M11 0947 2F	6M11 0977 2F			
50 x 1 1/2	6M11 1048 2F	6M11 1078 2F			
63 x 2	6M11 1150 2F	6M11 1180 2F			
75 x 2 1/2	6M11 1253 2F	6M11 1283 2F			
90 x 3	6M11 1355 2F	6M11 1385 2F			
110 x 4	6M11 1457 2F	6M11 1487 2F			


d [mm x Inch]	T-Union fem	T-Union m
20 x 1/2	6M51 0643 2F	6M51 0673 2F
25 x 3/4	6M51 0745 2F	6M51 0775 2F
32 x 1	6M51 0846 2F	6M51 0876 2F
40 x 1 1/4	6M51 0947 2F	6M51 0977 2F
50 x 1 1/2	6M51 1048 2F	6M51 1078 2F
63 x 2	6M51 1150 2F	6M51 1180 2F
75 x 2 1/2	6M51 1253 2F	6M51 1283 2F
90 x 3	6M51 1355 2F	6M51 1385 2F
110 x 4	6M51 1457 2F	6M51 1487 2F

d [mm x Inch]	T-weld-in-saddle fem
40 x 1/2	6M71 0943 2F
40 x 3/4	6M71 0945 2F
50 x 1/2	6M71 1043 2F
50 x 3/4	6M71 1045 2F
63 x 1/2	6M71 1143 2F
63 x 3/4	6M71 1145 2F
75 x 1/2	6M71 1243 2F
75 x 3/4	6M71 1245 2F
75 x 1	6M71 1246 2F
90 x 1/2	6M71 1343 2F
90 x 3/4	6M71 1345 2F
90 x 1	6M71 1346 2F
110 x 1/2	6M71 1443 2F
110 x 3/4	6M71 1445 2F
110 x 1	6M71 1446 2F
125 x 1/2	6M71 1543 2F
125 x 3/4	6M71 1545 2F
125 x 1	6M71 1546 2F

d [mm]	Ball valve
20	6911 0600 2F
25	6911 0700 2F
32	6911 0800 2F
40	6911 0900 2F
50	6911 1000 2F
63	6911 1100 2F
75	6911 1200 2F

RELIABLE PARTNER WORLDWIDE ... BÄNNINGER

BÄNNINGER GROUP OF COMPANIES

Bänninger Kunststoff-Produkte GmbH

Bänningerstraße 1
35447 Reiskirchen
Germany

✆ +49 6408 89-0
🖷 +49 6408 6756
info@baenninger.de
www.baenninger.de

Bänninger Rohrleitungssysteme GmbH

Athenslebener Weg 21
39418 Staßfurt
Germany

✆ +49 3925 96236-60
🖷 +49 3925 96236-89
info.stassfurt@baenninger.de
www.baenninger.de

Baenninger Formtechnik Sp.z o.o

ul. Wojciecha Korfantego 11
42-202 Czestochowa
Poland

✆ +48 3432 31218

Baenninger Trading LLC

P.O. Box 474150
Dubai Investment Park 2
Dubai – United Arab Emirates

✆ +971 48857 955
🖷 +971 48857 765
info@baenninger.ae
www.baenninger.ae

Baenninger, Inc.

1500 Broadway, Suite 1902
New York, NY 10036
United States of America

sales@baenninger-inc.com

DPR2 0001 E0 - 2021.01