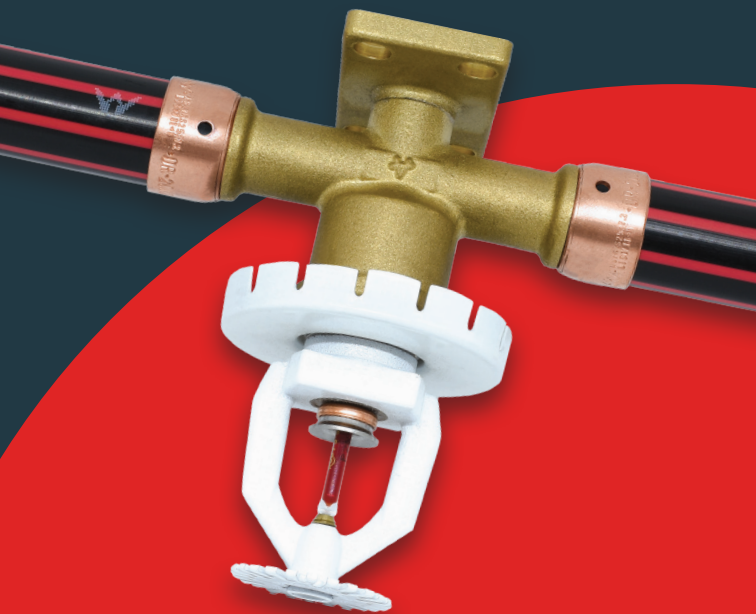
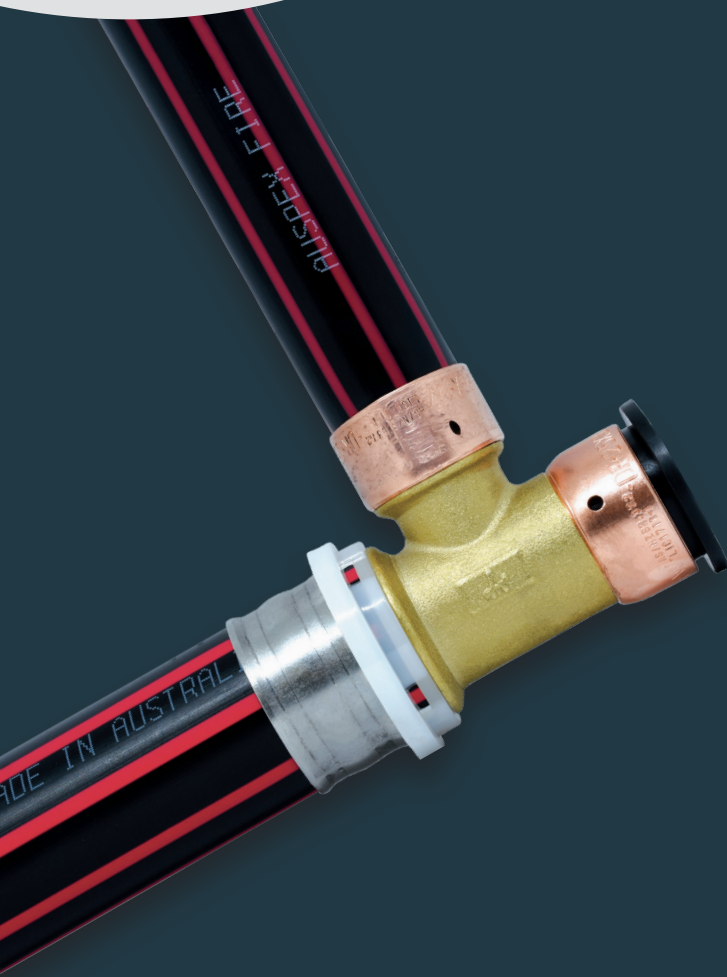


# Auspex Fire Manual



The Auspex Fire pipe and fitting system provides a revolutionary solution to meet new standard requirements in the fire industry.

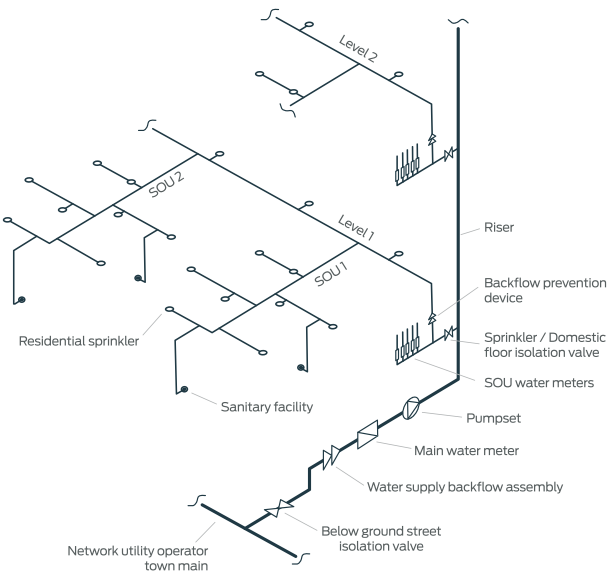


From 2019, legislation now requires all residential buildings 4 stories or more to be sprinkler protected. The National Construction Code offers significant reliability and cost saving advantages by referencing the new FPAA101D PEX pipe sprinkler system, which permits sprinklers to be plumbed off the already required domestic riser.

The PEX pipe “101D” system is by far the most cost-effective option for installers and developers of these residential buildings. This eliminates the need to provide dedicated sprinkler and hydrant service tapplings, fire pumps and alarm equipment. Utilising drinking water supplied by a WaterMark approved piping system significantly reduces backflow hazards to the community and now effectively eliminates the possibility of sprinkler systems being inadvertently shut off.

The Auspex system was used for tests conducted by CSIRO for the Fire Authorities at the very beginning of the development of the new FPAA101D system. Since then, Auspex has continued to work on developing a suite of dedicated piping and fixing arrangements specifically for sprinkler head fit off, in all relevant pipe diameters. This ensures installers have the easiest and fastest means of fitting off sprinklers in the wall or ceiling that is compliant with the relevant Codes and Standards.

### Layout Schematic



## Auspex Fire Pipes

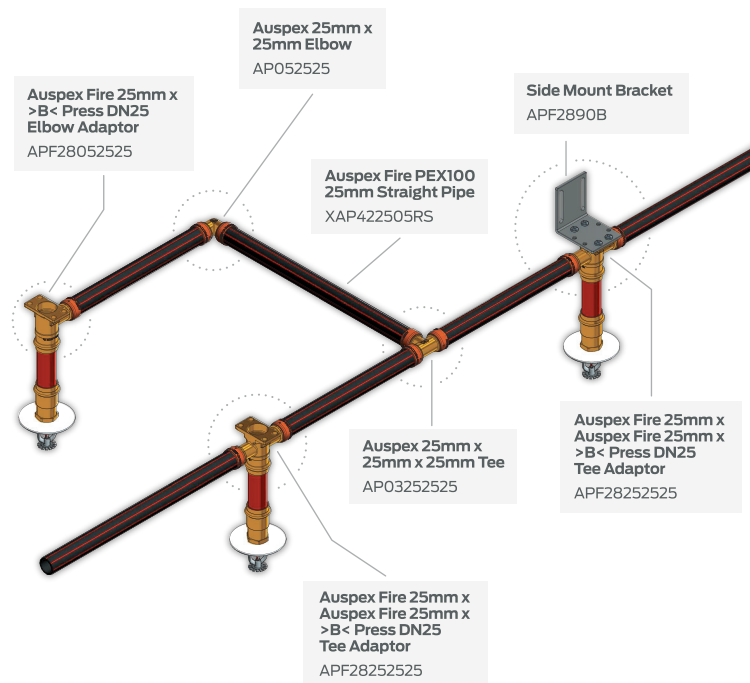
Auspex Fire pipe is unique in many ways.

- PEX pipe with integrated red stripes – no need for the additional expense or work of marking tape
- PN 20 pipe
- Sizing up to 32mm in PEX with the ability to join onto DuoPEX Water pipe up to 63mm
- Compatible with the existing Auspex fittings and tooling
- Australian manufactured
- Stocked by Reece
- 25+ years of history in the Australian market
- SDR 9 which has a better flow rate than SDR 7.4 pipe



## Auspex Fire Fittings

- Proven Auspex jointing system with over 25 years in the Australian plumbing industry
- Using the complete Auspex fitting product range
- Specialised sprinkler connections developed providing greater options to installers
- Solid brass construction for reliable fixing
- Standard Auspex tooling for dimensions up to 32mm, hand tools and battery tool options
- DuoPEX Water conversion fittings allows the installation to be included up to 63mm
- Rigid mounting clip allows versatile flexibility and confidence of installation



# Water Pressure Loss

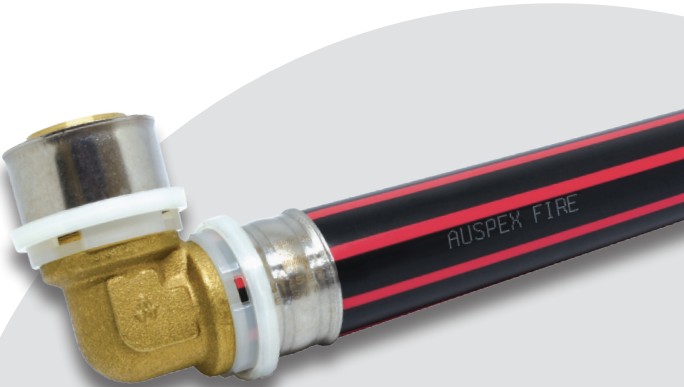
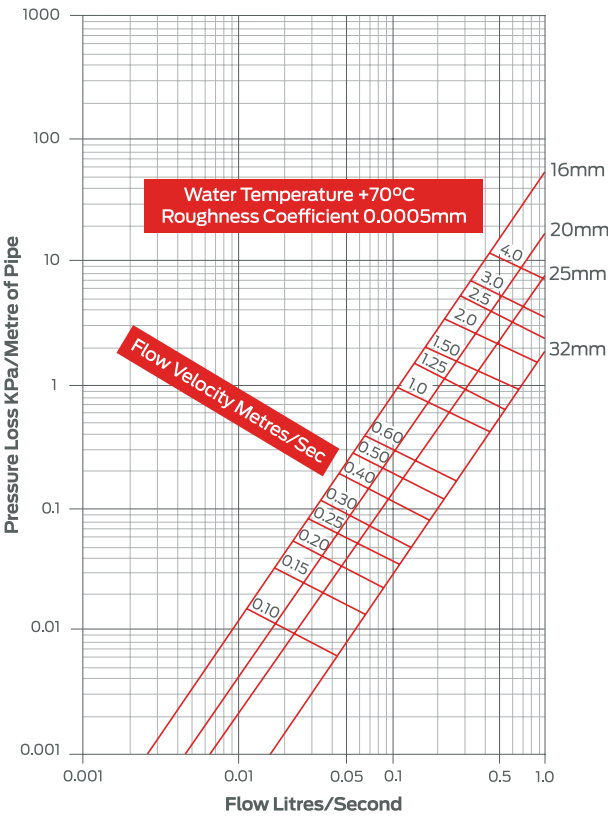
## Calculation of Potable Water – Principals

The following tables show Pressure Loss for Auspex Fire pipe at a fluid temperature of 10°C.

Pipe Size	20mm		25mm		32mm	
Flow Velocity (m/s)	Volumetric Flow (L/s)	Pressure Loss (kPa)	Volumetric Flow (L/s)	Pressure Loss (kPa/m)	Volumetric Flow (L/s)	Pressure Loss (kPa)
0.5	0.09	0.26	0.15	0.20	0.24	0.15
0.6	0.11	0.37	0.18	0.28	0.28	0.21
0.7	0.13	0.50	0.20	0.36	0.33	0.28
0.8	0.14	0.63	0.23	0.47	0.38	0.36
0.9	0.16	0.78	0.26	0.59	0.43	0.45
1.0	0.18	0.96	0.29	0.72	0.47	0.55
1.2	0.21	1.34	0.35	1.00	0.57	0.76
1.4	0.25	1.78	0.41	1.33	0.66	1.01
1.6	0.29	2.28	0.47	1.71	0.76	1.30
1.8	0.32	2.83	0.53	2.12	0.85	1.61
2.0	0.36	3.43	0.59	2.58	0.95	1.96
2.5	0.44	5.20	0.73	3.90	1.18	2.96
3.0	0.53	7.29	0.88	5.45	1.41	4.14
3.5	0.62	9.73	1.00	7.28	1.65	5.51
4.0	0.71	12.43	1.17	9.31	1.89	7.06
4.5	0.80	15.44	1.32	11.58	2.12	8.79
5.0	0.89	18.81	1.46	14.08	2.36	10.68

Size	Mean OD	Min Wall	Max Mean ID
20mm	20.0	2.3	15.7
25mm	25.0	2.8	19.7
32mm	32.0	3.7	24.5

Factor	1.20	1.14	1.10	1.05	1.02	0.98	0.95
Water °C	20	30	40	50	60	80	90













## Auspex Fire Fitting Pressure Drop

Pressure losses due to individual resistances can be calculated based on the loss coefficients and based on the equivalent pipe lengths of the individual resistances.

*These value equivalents are then added to the pipe lengths of the respective pipe sections to then calculate the total resistance.*










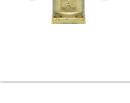





## Pressure Losses Due to Individual Resistances (Standard Auspex Fittings)

Individual Resistance	Graphic Symbol	Fittings Equivalent Pipe Length (FEPL)		
		20	25	32
 Coupling		0.38	0.55	0.5
 Elbow (90°)		3.8	2.6	3.0
Tee, Run Flow Separation		0.41	0.55	0.6
 Tee, Branch Flow Separation		4.26	2.8	3.0
Tee, Transition Flow Separation		4.26	2.8	3.0
 Reduction		14.0 (32mm) 4.6 (25mm)	2.8	–

## Pressure Losses Due to Individual Resistances (Auspex Fire Fittings)

- a. The symbol "V" for flow velocity defines the location of the proper reference velocity in the fitting and connecting piece
- b. For reduced tees, the resistance value of the similar tee is assumed with the smallest dimension of the reduced tee for the flow path to be calculated

**General:** The loss coefficient is assigned in each case to the volumetric flow (partial flow), which is indicated in the diagram with the symbol "V".

Individual Resistance	Graphic Symbol	Fittings Equivalent Pipe Length (FEPL)		
		20	25	32
 Threaded Lugged Elbow		4.6	4.8	9.2
 PEX to Cu Lugged Elbow		1.5	1.2	2.0
Threaded Centre Tee, Run Flow Separation		0.6	0.6	0.7
 Threaded Centre Tee, Branch Flow Separation		4.5	4.7	10.0
 Cu Centre Tee, Run Flow Separation		0.9	0.9	0.9
 Cu Centre Tee, Branch Flow Separation		4.0	3.9	4.1
 Cu Centre Tee (Reducing), Run Flow Separation		0.7	0.7	–
 Cu Centre Tee (Reducing), Branch Flow Separation		4.7	11.1	–

# Making A Joint

Auspex fittings from 16mm-25mm use a copper crimp ring connection and can be crimped with an Auspex manual tool or a Rothenburger battery tool.

The 32mm Auspex water fitting has a Stainless Steel crimp ring and can only be crimped with the battery tool using a DuoPEX jaw (see page 9). The DuoPEX jaws are universal across all systems shown below.



**DuoPEX Gas** fittings are defined by the yellow plastic holding ring and are for use only with the multi-layer DuoPEX Gas pipe.



**DuoPEX Water** fittings are defined by the blue plastic holding ring and are for use only with the multi-layer DuoPEX Water pipe.



**Auspex 32mm water** fittings are defined by the clear plastic holding ring and are for use only with the single layer Auspex water pipe and multi-layer Auspex Gas pipe.

It is most important that the tool manual supplied with the tool is read in its entirety and the user becomes familiar with the maintenance, calibration and proper use of the tool.

## Step 1.

Measure the pipe to the correct length and using a secateur-type pipe cutter, cut the pipe squarely and remove any burrs. The end of the pipe may need to be freshly cut to ensure smooth passage for the fitting. **Do not use a hacksaw.**



## Step 2.

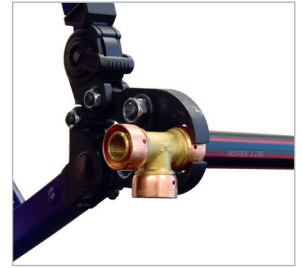
The pipe is pushed over the barbed fitting and at the same time under the crimp ring. The fit should be firm. If the joint feels sloppy or hard to insert, check pipe and fittings. Do not use lubricants. Ensure the pipe is visible in both crimp ring witness holes.



## Step 3.

**Make sure the tool jaws are centralised over the crimp ring at 90° to the joint.**

When using the manual tool, close the tool completely to compress the crimp ring. The tool will click at final compression.

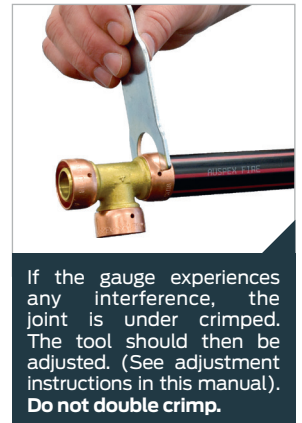


When using a battery tool, ensure the tool has fully closed and released indicating a completed joint.

## Step 4.

For manual tool use, regularly check with the gauge supplied by sliding the opening of the gauge over the compressed ring. If the gauge passes over all parts of the ring without interference, then the joint has been crimped satisfactorily.

Correctly serviced battery tool do not require a gauge check if the joint has been completed as per instructions.



## 32mm Joints

When crimping Auspex 32mm, use the battery tool with a 32mm DuoPEX Jaw. Place the fitting inside the jaws so that the raised section of the plastic sight ring fits into the slot in the jaws. Release the jaws so they fit snugly over the fitting, ensuring that the raised section of the plastic sight ring is still located in the slots in the jaw.

Press the switch mechanism until the joint is completed. Press the back end of the jaws and remove the completed joint.





Step 5.

Pressure test the system in accordance with AS/NZS 3500 and with local requirements.

Design the installation in such a way as to not stress the system joints, bend supports may be required.

Tool Adjustment

Incorrect adjustment can cause under-crimping and failure of the joint. It is good practise to check tool adjustment regularly.

- 1. Ensure all moving parts are always kept well lubricated
- 2. Open the handles fully
- 3. Using a flat head screwdriver, loosen (but don't fully unscrew) the locking bolt
- 4. Using a screwdriver, rotate the adjusting screw a quarter turn clockwise



Manual tools available for copper crimp ring connections 16, 20 and 25mm. Only Auspex approved tools can be used.

- 5. The adjusting screw has 4 flat faces in a square shape for the locking bolt to fix on. Therefore the adjusting screw must always be vertical or horizontal in orientation and never at an angle or the locking bolt will damage it
- 6. Retighten the locking bolt
- 7. Crimp a new trial joint as a test away from the working location and test with the gauge
- 8. If OK, continue to use the tool

If the gauge fails, repeat adjustment until trial crimped joint is correct. More detailed instructions are included with the tool.

Pinched Ring

When crimping Auspex fittings, care should be taking to ensure the tooling is positioned correctly so to not pinch the crimp ring. Fittings that are damaged in this manner should be replaced.

Clips

Pipe clips should be installed so that the pipe can move freely. Plastic system clips are available, however if using a non-propriety clipping system, they must be non-metallic where in contact with the pipe. General cable ties are not recommended. Any damage caused by non-propriety clips will not be covered by warranty. Neutral Cure silicon is permitted in AS/NZS 3500 to protect pipes through penetrations.

Recommended support spacings:

Diameter	Horizontal	Vertical
20mm	700mm	1400mm
25mm	750mm	1500mm
32mm	850mm	1700mm

DuoPEX Water System

The DuoPEX Water system is ideal for any large bore piping required within the 101D project, with 40mm, 50mm and 63mm available. DuoPEX Water offers the versatility and ease of a WaterMark certified multi-layer pipe system and can be used in potable water and various other installations.

Advantages of the DuoPEX Water System

- 1. Form stability during installation, for example in a curve
- 2. Low thermal conductivity level
- 3. Light weight during transport and installation
- 4. Thermal expansion is lower than that of other pipes
- 5. Lower pressure loss thanks to the smooth inner layer
- 6. Suitable for Hydronic Heating

DuoPEX Water Fittings

DuoPEX Water fittings are manufactured from dezincification resistance (DR) brass with a stainless steel crimp ring and joined to the pipe using a specific precision crimping tool.

DuoPEX Water fittings are available in a full range of couplings, elbows, tees and conversion fittings.



For the full range of DuoPEX Water Fittings, pickup a copy of the *DuoPEX Water Manual* in your closest Reece store or download a digital copy from [www.auspex.com.au](http://www.auspex.com.au)





For the full range of Auspex Crimp Fittings, tooling and installation instructions, pick up a copy of the *Auspex Manual – Crimp Fittings and Pipe* in your closest Reece store or download a digital copy from [www.auspex.com.au](http://www.auspex.com.au)



Red Stripe PEX100 Pipe

20mm x 5m Straight	XAP412005RS
20mm x 50m Coil	XAP412050RS
25mm x 5m Straight	XAP422505RS
25mm x 25m Coil	XAP422525RS
32mm x 5m Straight	XAP433205RS



Specialised Auspex Fire Fittings

Threaded Tees (Female)

20mm x 20mm x Rp½"	APF04202015F
25mm x 25mm x Rp½"	APF04252515F
32mm x 32mm x Rp½"	APF04323215F



Threaded Elbows (Female)

20mm x Rp½"	APF072015F
25mm x Rp½"	APF072515F
32mm x Rp½"	APF073215F



>B< Press fire fittings are designed for applications where extended adjustable droppers are required, while still providing a solid connection to the sprinkler outlet.

>B< Press Tee Adaptors

20mm x 20mm x DN20	APF28202020
25mm x 25mm x DN20	APF28252520
25mm x 25mm x DN25	APF28252525
32mm x 32mm x DN20	APF28323220
32mm x 32mm x DN25	APF28323225



>B< Press Elbow Adaptors

20mm x DN20	APF28052020
25mm x DN25	APF28052525
32mm x DN25	APF28053225



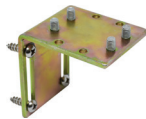
DuoPEX Water To >B< Press Adaptors

16mm x ½"	DPW281615
20mm x ½"	DPW282015
20mm x ¾"	DPW282020
26mm x ¾"	DPW282620
26mm x 1"	DPW282625
32mm x 1"	DPW283225
40mm x 1 ¼"	DPW284032
50mm x 1 ½"	DPW285040



Brackets

Bracket – Side Mounting	APF2890B
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The side mounting bracket can be used with all the above Auspex Fire Fittings connecting to the brass base plate, allowing for various side mounting options. All screws provided.



## Customer Service

Telephone (03) 9770 3600  
Facsimile (03) 9768 3415  
Email [salesauspex@rmc.com.au](mailto:salesauspex@rmc.com.au)

[auspex.com.au](http://auspex.com.au)

For operating parameters outside those stated in the manual, please contact Customer Service.

Contents of this brochure are subject to change, please visit our website for the most up-to-date product information.

Edition 1 | 2021



AS 4176  
WMKA 21044  
WMKA 21069



**Australian  
Standard**  
SMKP 25517