

AUSPEX MANUAL

CRIMP FITTINGS AND PIPE



A TRADITION OF TRUST.

1997

1997 was a big year for John and Glenn Bines, the father and son team who brought a whole new way of plumbing to Australia. Not content with retirement, it was John who first discovered the PE-X products in Europe and jumped at the chance to bring it home. After roping in his son Glenn, they worked for three solid years with test after test to ensure the product would work in Australian conditions. So in 1997 when they were satisfied they had something great, they launched Auspex and haven't looked back.



FOCUS

The commitment and focus that helped John and Glenn launch Auspex has maintained, and in many ways got stronger over the years. Not happy sticking with their core range of products and tools, they have continued to evolve with one goal in mind – to give plumbers a reliable and time saving product they can trust. Whether it's the ever-growing range of adaptors or the fittings and pipe, they are focussed on quality. From day one they've had a philosophy of 'measure twice, cut once' because they understand it's not good enough to have a good product – you want a great product.



THE AUSPEX CRIMP
SYSTEM MADE
FOR BOTH COLD
AND HOT WATER
APPLICATIONS, HAS
REVOLUTIONISED
PIPE FITTING WITH
ITS CUT, FIT, CRIMP,
DONE PROCESS.

The crimp system comprises PE-X pipe, DR Brass fittings, copper crimp rings and a specially engineered jointing tool, ensuring that all your jobs are quick, hassle free, cost effective and of the highest quality. The fittings are manufactured and tested to conform with the performance requirements of AS 2537.

AuspeX Crimp are constantly working to improve the system to make it as plumber-friendly as possible.

ADVANTAGES OF AUSPEX CRIMP

1. Simple and quick installation.
 2. Neat, compact fittings.
 3. No brazing, soldering or lagging unless required by A.S.3500
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INSTALLATION INSTRUCTIONS

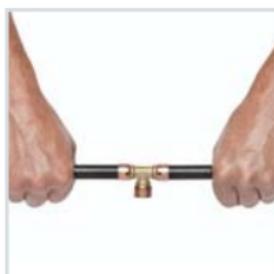
STEP 1

Measure the pipe to the correct length and using a secateur type tool, 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 entirely in both witness holes.



STEP 3

When using the manual tool, centralise the tool jaws over the crimp ring at 90 degrees to the joint. Close the tool completely to compress the crimp ring. The tool will click at final compression.



When using the battery tool, centralize the jaw over the crimp ring at 90 degrees to the joint. Press the switch until the crimp is completed.



STEP 4

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 done satisfactorily.

If the gauge experiences any interference the joint is under crimped. The tool should then be adjusted. (See adjustment instructions). Do not double crimp.



STEP 5

To ensure the joint is not stressed, use a bend support or clip.



STEP 6

Pressure test the system in accordance with A.S.3500 and with local requirements. Cut out any defective joints. Fittings can be re-used by cutting off the compressed ring and replacing with a new ring. Ensure that no damage is done to the brass barbs when cutting off the ring or removing the pipe.

GENERAL INSTALLATION TIPS

1. THE GAUGE

The gauge is one of the quality controls of the system. It verifies firstly that the ring has been crimped and secondly, that it has been compressed enough.

Gauging of the compressed ring should be done regularly throughout each job.

When using the gauge, slide the opening over the compressed ring. If the gauge passes over all parts of the ring without interference then the joint has been done satisfactorily. **If the gauge experiences any interference the joint is under crimped.** Do not place the gauge over the pipe and then move it back along the pipe and over the ring. This may not give a true reading.

If the gauge is lost, it should be replaced immediately.

2. CLEAR PLASTIC RING

The plastic ring on the fitting is only there to hold the crimp ring to the fitting. It plays no part in the integrity of the joint. It may behave differently after crimping, however as a general rule, the back of this ring should be flush against the body of the fitting and the crimp ring should be attached to it. This starting position will also help to ensure full penetration of the fitting inside the pipe.

3. THE PIPE

The Pipe that comes out of the crimped ring at an angle may indicate that the pipe is not covering all of the barbs on one side. This situation may occur if a tight bend is made close to a joint or if the pipe has moved in some way prior to crimping. Where possible, crimp the fitting before making the tight bend and install a clip close to the joint between the bend and the joint. Use a bend stabiliser to avoid stress on the joint.

4. COLOURED PLASTIC RINGS

Auspex Crimp has a range of adaptors, which are identified by a different coloured plastic ring. Do not join Auspex pipe by using a fitting with a coloured ring. To identify the uses for these adaptors, consult your supplier or Auspex directly.

5. PINCHED RING

When crimping fittings which are flush to frames etc, check to ensure that the crimp ring has not pinched on the back side. Rings which are pinched in this manner should be replaced.

6. CLIPS

The clips should be installed so that the pipe can move freely through the clip. Plastic clips are recommended.

TOOL ADJUSTMENT

Incorrect adjustment can cause under-crimping and failure of the joint.

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.
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.



Ratchet Tool
Manual tool for copper crimp ring to 25mm



JOINTING TO OTHER MATERIALS

Threaded fittings are available to make the transition between PE-X pipe and other materials. Specialised and tested adaptor fittings are also available. Please see catalogue or contact Auspex.

WHEN JOINING TO COPPER

- A.** Flared copper compression to Auspex Crimp adaptors are available.
- B.** Brazing adaptors are available, designed so that one end can:
 - 1. Fit over 15mm, 20mm, 25mm and 32mm copper tube.
 - 2. Fit into expanded 15mm, 20mm or 25mm copper tube.
 - 3. Fit into standard copper or brass brazed fittings.
 - 4. When brazing these adaptors they **MUST** be cold before inserting into the PE-X pipe.
- C.** Push fit copper adaptors are available.
 - 1. Square cut the copper tube.
 - 2. Remove any burrs or loose material.
 - 3. Ensure the outside of the pipe is free of scratches, marks etc.
 - 4. Push the copper fully into the fitting using a twisting motion.
 - 5. Make sure the copper is not oval or out of round.
 - 6. Do not use on annealed copper or coated copper e.g. chrome coating
- D.** B-Press (crimp) copper to Auspex
 - 1. See catalogue for available conversion fittings.
 - 2. Follow the B-Press installation instruction for the copper crimp end.
 - 3. Follow the Auspex installation instruction for crimping the PEX end of the fitting.

TROUBLE SHOOTING

The Auspex crimp system is simple and effective when executed in accordance with the jointing procedures in this manual. However, if sufficient care is not taken, this can result in an ineffective joint.

INEFFECTIVE JOINTS MAY OCCUR IF

- A.** The crimping tool has not been completely closed.
- B.** The crimping tool is out of adjustment. Readjust tool in accordance with the instructions supplied with the tool, and in this manual.
- C.** The copper ring has moved away from the fitting body.
- D.** The crimping tool has not been centred over the copper ring.
- E.** The crimping tool has not been at 90 degrees to the joint being made.
- F.** The pipe has been cut badly out of square.
- G.** The fitting is not fully inserted in the pipe.

IF AN INEFFECTIVE JOINT IS DETECTED

- A.** Cut out the defective joint and replace with new fitting.
- B.** Cut the copper ring, remove and replace it with new copper ring and crimp again, using the same fitting body.
- C.** Ensure when cutting off a ring that the barb on the fitting is not damaged.
- D.** Replace the section of pipe that was under the crimp ring.

PRODUCT LIST

16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duoex Jaw.

COUPLINGS

AP011616

16mm x 16mm

AP012020

20mm x 20mm

AP012525

25mm x 25mm

AP013232

32mm x 32mm

AP022016

20mm x 16mm

AP022520

25mm x 20mm

AP022516

25mm x 16mm

AP023220

32mm x 20mm

AP023225

32mm x 25mm



TEES

AP03161616

16mm x 16mm x 16mm

AP03202020

20mm x 20mm x 20mm

AP03252525

25mm x 25mm x 25mm

AP03323232

32mm x 32mm x 32mm

AP04202016

20mm x 20mm x 16mm

AP04201616

20mm x 16mm x 16mm

AP04202025

20mm x 20mm x 25mm

AP04201620

20mm x 16mm x 20mm

AP04251616

25mm x 16mm x 16mm

AP04251620

25mm x 16mm x 20mm

AP04251625

25mm x 16mm x 25mm



PRODUCT LIST

16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duopex Jaw.

TEES

AP04252016

25mm x 20mm x 16mm

AP04252020

25mm x 20mm x 20mm

AP04252025

25mm x 20mm x 25mm

AP04252516

25mm x 25mm x 16mm

AP04252520

25mm x 25mm x 20mm

AP04161620

16mm x 16mm x 20mm

AP04323225

32mm x 32mm x 25mm

AP04323220

32mm x 32mm x 20mm

AP04322525

32mm x 25mm x 25mm

AP04322020

32mm x 20mm x 20mm

AP04202015F

20mm x 20mm x 1/2"

**For Brazing
Copper Tube**



AP04161608F

16mm x 16mm x 1/2"

AP04202008F

20mm x 20mm x 3/4"



ELBOWS

AP051616

16mm x 16mm

AP052020

20mm x 20mm

AP052525

25mm x 25mm

AP053232

32mm x 32mm

AP052520

25mm x 20mm

AP052016

20mm x 16mm

AP051615

16mm x 1/2" Male

AP051615F

16mm x 1/2" Female

AP052020F

20mm x 3/4" Female



16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duopex Jaw.

LUGGED ELBOW (MALE)

AP061615S

16mm Auspex x 1/2"
(73mm)

AP061615L

16mm Auspex x 1/2"
(88mm)

AP061615100

16mm Auspex x 1/2"
(100mm)

AP061615200

16mm Auspex x 1/2"
(200mm)

AP061615230

16mm Auspex x 1/2"
(230mm)

AP06161588

16mm Auspex x 1/2"

Male elbow 88m with flange and locking nut
(88mm)

AP062015

20mm Auspex x 1/2"

AP062020200

20mm Auspex x 3/4"
(200mm)

AP06252075

25mm Auspex x 3/4"
(75mm)

AP0658200REC

16mm x 1/2"

Recycled water Lugged Elbow
(200m)

AP06201595

20mm x 1/2"
(95m)



LUGGED ELBOW (FEMALE)

AP071615F

16mm Auspex x 1/2" Female B.S.P.

AP072020F

20mm Auspex x 3/4" Female B.S.P.



PRODUCT LIST

16 -25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duopec Jaw.

PUSH FIT COPPER ADAPTORS

AP271615

16mm Auspex x 15mm CU Push Fit

AP272020

20mm Auspex x 20mm CU Push Fit

AP272525

25mm Auspex x 25mm CU Push Fit



BRAZING TAILS

AP0816M

16mm Male

AP0820M

20mm Male

AP0825M

25mm Male

AP0832M

32mm

AP082520M

25mm x 20mm Male

AP0816F

16mm Female

AP0820F

20mm Female

AP0825F

25mm Female

AP0832F

32mm Female

Brazing Tail

AP082015F

20mm x 15mm Female



COMPRESSION ADAPTORS

AP131615

16mm AUSPEX x 15mm
Copper

AP132015

20mm AUSPEX x 15mm
Copper



16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duoex Jaw.

COMPRESSION ADAPTORS

P132020

20mm AUSPEX x 20mm

Copper

AP132525

25mm AUSPEX x 25mm

Copper



B-PRESS ADAPTORS

AP281615

16mm Auspex x 15mm B-Press Copper

AP282020

20mm Auspex x 20mm B-Press Copper

AP282525

25mm Auspex x 25mm B-Press Copper



THREADED BSP ADAPTORS (MALE)

AP091615

16mm AUSPEX x 1/2"

Male B.S.P.

AP092020

20mm AUSPEX x 3/4"

Male B.S.P.

AP092525

25mm AUSPEX x 1"

Male B.S.P.

AP093232

32mm x 1 1/4"

Male B.S.P.

AP092015

20mm x 1/2"

Male B.S.P.

AP092520

25mm AUSPEX x 3/4"

Male B.S.P.

AP092025

20mm AUSPEX x 1"

Male B.S.P.

AP093225

32mm x 1"

Male B.S.P.



PRODUCT LIST

16 -25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duopex Jaw.

THREADED BSP ADAPTORS (FEMALE)

AP101615

16mm AUSPEX x 1/2" Female B.S.P.

AP102020

20mm AUSPEX x 3/4" Female B.S.P.

AP102525

25mm AUSPEX x 1" Female B.S.P.

AP103232

32mm x 1 1/4" Female B.S.P.

AP102015

20mm AUSPEX x 1/2" Female B.S.P.

AP102520

25mm AUSPEX x 3/4" Female B.S.P.

AP103225

32mm x 1" Female B.S.P.

AP101615WB

16mm x 1/2" Female Wing Back Connector

AP102020WB

20mm x 3/4" Female Wing Back Connector



SINK SETS

AP11200RA

Right Angle Sink Sets
200mm Centres

AP11RA

Right Angle Sink Sets
300mm Centres

AP11SE

Side Entry Sink Sets
300mm Centres

AP11200RA/Q

Right Angle Sink Set
200mm Centre with
43.6mm body height

AP11200SE

Side Entry Sink Set
200mm Centre



Covered by Watermark LN: W185 spec 038

16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duponex Jaw.

SHOWER SETS

AP12200BER

Bottom Entry Shower Set 200mm Centres with Copper Riser and Lugged Elbow



AP12200TER

Top Entry Shower Set 200mm Centres with Copper Riser and Lugged Elbow

AP12200BEC

Bottom Entry Shower Set 200mm Centres, short Copper Riser and Auspex Barb

AP12200TEC

Top Entry Shower Set 200mm Centres, short Copper Riser and Auspex Barb

AP12BEC

Bottom Entry Shower Set 150mm Centres, short Copper Riser and Auspex Barb

AP12TEC

Top Entry Shower Set 150mm Centres, short Copper Riser and Auspex Barb

AP16BS200BER

Bottom Entry Bath/Shower 200mm Centres with Copper Riser and Lugged Elbow

AP12150LH

Vertical shower breach left hand entry

AP12150RH

Vertical shower breach right hand entry

AP12200BEC/Q

Bottom entry shower breach 200m centre with 43.6mm body height

AP12200TEC/Q

Top entry shower breach 200mm centre with 43.6mm body height

AP16BBD

Double bollard breach

AP16BBS

Single bollard breach



Covered by Watermark LN: W185 spec 038

PRODUCT LIST

16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duoex Jaw.

SYSTEM ADAPTORS

AP151618PB

16mm AUSPEX x 18mm
Polybutylene Adaptor

AP15181816PB

18mm PB x 18mm PB
x 16mm AUSPEX TEE

AP152022PFPB

22mm PB (Push Fit)
x 20mm AUSPEX Adaptor

AP15222220PFPB

22mm PB (Push Fit) x
22mm PB (Push Fit) x
20mm AUSPEX TEE

AP151620

16mm AUSPEX x 16mm
SDR 7.4 PEX Adaptor

AP152020

20mm AUSPEX x 20mm
SDR 7.4 PEX Adaptor

AP15161616PN20

16mm SDR 7.4 PEX x 16mm SDR 7.4
PEX x 16mm AUSPEX TEE

AP15202020PN20

20mm SDR 7.4 PEX x 20mm SDR 7.4
PEX x 20mm AUSPEX TEE

AP151616PN16

16mm AUSPEX x 16mm
Sharkbite Adaptor (SDR 9)

AP162020PN16

20mm AUSPEX x 20mm Sharkbite Adaptor (SDR 9)



END CAPS

AP1416

16mm

AP1420

20mm

AP1425

25mm

AP1432

32mm



16 - 25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duopex Jaw.

GAUGES

AP172016

20mm x 16mm

AP1725

25mm



BEND STABILISERS

AP1816

16mm

AP1820

20mm

AP1825

25mm



LOOSE NUT AND TAIL (FEMALE)

AP191615

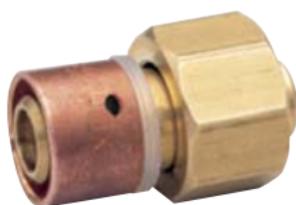
16mm AUSPEX x 1/2"

AP192020

20mm AUSPEX x 3/4"

AP192525

25mm AUSPEX x 1"



CRIMPING TOOLS

AP2116RN

16mm

AP2120RN

20mm

AP2125RN

25mm



PRODUCT LIST

16 -25mm with copper rings & 32mm with stainless steel rings. 32mm fittings must be crimped with the battery tool using the 32mm Duoex Jaw.

SPARE COPPER RINGS (WITH PLASTIC INSERTS)

AP2216
16mm

AP2220
20mm

AP2225
25mm



MANIFOLDS

AP042020163
3 port: 16-20mm x 20mm – open end

AP0420X163
3 port: 16-20mm – closed end

AP042020164
4 port: 16-20mm x 20mm – open end

AP0420X164
3 port: 16-20mm closed end



BALL VALVES

AP601616
16mm Auspex x 16mm Auspex

AP602020
20mm Auspex x 20mm Auspex

AP602525
25mm Auspex x 25mm Auspex

AP601615FI
16mm Auspex x 15mm female BSP

AP602020FI
20mm Auspex x 20mm female BSP

AP602525FI
25mm Auspex x 25mm female BSP



AUSPEX STAINLESS STEEL RANGE DATA SHEET

Austenitic stainless steel has been identified as a suitable, cost-effective material for problem environments, primarily in applications where more aggressive water sources are present. This series of stainless steels is known for its excellent corrosion resistance to a wide variety of chemicals and water sources, and its microstructural characteristics also provide a unique combination of strength and toughness for the material's service life.

ALLOY DESIGNATION

British Standard EN10088-1 (2005): [X5CrNiMo17-12-2]
– Refer Table 4, alloy code 1.4401

Alloy Equivalents in ASTM cast series and AISI/UNS wrought series:

- ASTM – [CF-8M]
- AISI – [Type 316]
- UNS – [C31600]

C wt. %	Si wt. %	Mn wt. %	P wt. %	S wt. %	N wt. %
0.07	1.00	2.00	2.00	0.015	0.11
Cr wt. %	Cu wt. %	Mo wt. %	Nb wt. %	Ni wt. %	Fe wt. %
16.5-18.5	–	2.00-2.50	–	10.0-13.0	REM

The British standard alloy designation 1.4401 [X5CrNiMo17-12-2] is used to describe the specific chemical composition chosen for this series of Auspex fittings. This type of alloy is classified as a corrosion resistant cast steel that has a good resistance to both uniform and local attack which is provided by the Chromium (Cr) content in the alloy. The Cr spontaneously forms a protective oxide film which acts as a barrier to corrosion and is the base protective mechanism of stainless steel. In addition to this, Molybdenum (Mo) is also included in the composition for increased resistance to crevice corrosion and pitting in chloride-containing environments (as found in many aggressive water sources).

ALLOY DESIGNATION (CONT.)

These fittings will consist of ~5-20% Ferrite distributed in discontinuous pools throughout an Austenite matrix which provides a unique combination of properties appropriate for use in various potable water applications. The Austenite phase (FCC crystal structure) possesses excellent ductility, formability and has a high fracture toughness while the presence of Ferrite (BCC crystal structure) in the alloy is beneficial for resistance to stress corrosion cracking (SCC) and intergranular attack. In the case of SCC, the Ferrite blocks crack propagation through the Austenite matrix while it also promotes resistance to intergranular cracking by preferentially precipitating carbides along its grain boundaries, rather than along the Austenite grain boundaries, where they would increase susceptibility to intergranular attack. The presence of Ferrite is also beneficial to the tensile and yield strength of the alloy without any significant reduction in toughness. As the ~5-20% Ferrite is magnetic (Austenite is not), there will be a low magnetic response from this alloy.

PRODUCT LIST - STAINLESS STEEL 316

COUPLING

APSS011616

16mm x 16mm

APSS012020

20mm x 20mm

APSS012525

25mm x 25mm

APSS022016

20mm x 16mm

APSS022520

25mm x 20mm



TEE

APSS03161616

16mm x 16mm x 16mm

APSS04202016

20mm x 20mm x 16mm

APSS03202020

20mm x 20mm x 20mm

APSS03252525

25mm x 25mm x 25mm

APSS04201616

20mm x 16mm x 16mm

APSS04201620

20mm x 16mm x 20mm

APSS04252520

25mm x 25mm x 20mm



ELBOW

APSS051616

16mm x 16mm

APSS052020

20mm x 20mm

APSS052016

20mm x 16mm

APSS052525

25mm x 25mm



PRODUCT LIST - STAINLESS STEEL 316

LUGGED ELBOW (MALE)

APSS061615S
16mm x 1/2" Male (73mm)



LUGGED ELBOW (FEMALE)

APSS071615F
16mm x 1/2" Female BSP



BRAZING TAIL

APSS0816F
16mm F

APSS0820F
20mm F



THREADED BSP ADAPTORS (MALE)

APSS091615
16mm x 1/2" Male BSP

APSS092020
20mm x 3/4" Male BSP

APSS092525
25mm x 1" Male BSP



THREADED BSP ADAPTORS (FEMALE)

APSS101615

16mm x 1/2" Female BSP

APSS102020

20mm x 3/4" Female BSP

APSS102525

25mm x 1" Female BSP



SINK SETS

APSS11RA

Right Angle Sink Set
300mm Centres



SHOWER SETS

APSS12BEC

Bottom Entry Shower Set
150mm Centres



END CAP

APSS1416

16mm

APSS1420

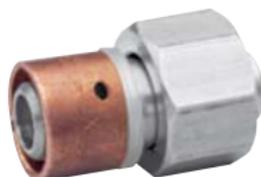
20mm



LOOSE NUT & TAIL

APSS191615

16mm x 1/2"





**AUSPEX |
PIPES**

ADVANTAGES OF THE AUSPEX PIPE

1. The pipe does not have to be expanded or reverted to make the joint.

2. Tighter manual bending.

3. Light weight.

4. Corrosion resistant.

5. Dampens water hammer noise.

6. Pipe bores of AUSPEX 16mm, 20mm, 25mm and 32mm are greater than SDR 7.4 pipes.

7. No corrosion or scale build up.

8. Quiet water flow.
(see acoustic tables on pages 36 and 37)

AUSPEX PIPE is a Cross-Linked Polyethylene (PE-X) Pipe manufactured to comply with A.S.2492 – Cross-linked Polyethylene (PE-X) Pipe for Hot and Cold Water Applications. The pipe is intended for use by licensed plumbing tradesmen, who are experienced in working to accepted plumbing practices.

Installations should be carried out in accordance with accepted plumbing practices and instructions provided in this manual where practical. However, the installer should also be aware of local authority codes and by-laws relevant to plumbing, which take precedence over these guidelines in any area where they vary.

The requirements of the National Plumbing Codes (AS/NZS 3500) should also be adhered to.

PE-X pipe manufactured to AS2492 and designed to operate with a working pressure of 1,600kPa at 20°C can be operated continuously at 70°C with a maximum working pressure of 1,000 kPa.

The pipe can operate briefly at temperatures up to 90°C but extended periods at elevated temperatures will reduce the life of the pipe.

Contact the manufacturer for operating parameters outside of those stated here.

FIRE AND EXCESSIVE HEAT

Keep PE-X a minimum of 500 mm from sources of high heat such as heating appliances, flues from heating appliances etc.

Keep PE-X 1500mm from slow combustion type stoves and flues used to heat hot water or cooking (wet back type).

Leave 300mm minimum space between PE-X pipe and recessed electric light fittings.

PE-X should not be positioned within 150mm of gas or central heating vents or flues.

UNCONTROLLED HEAT SOURCES

In the case of uncontrolled heat sources, i.e. slow combustion stoves, room heaters, water heating coils, wet back boilers, solar or the like, PE-X pipe should not be used. The primary flow and returns on these types of heaters should not be installed in PE-X pipe.

Secondary flow and returns must be controlled so that the temperature/pressure requirements are not exceeded.

In the interest of safe temperature and to protect the user, tempering valves should be installed in accordance with A.S/NZS.3500 4.2.

Where fire collars or the like are required, installers should contact the manufacturer of those products to ensure they have certification for PE-X pipes.

DIRECT SUNLIGHT EXPOSURE

Auspex pipes manufactured after March 2010 meet the requirements of AS2492 2009 for carbon black content. As far as the standard is concerned relating to UV stability, the black pipe meets all of the requirements. As a conservative company, we still believe that good plumbing practice would see exposed external pipes protected.

GENERAL INSTALLATION REQUIREMENTS

The pipe is manufactured in 16mm, 20mm sizes and supplied in 50 metre and/or 5 metre straight lengths. 25mm pipe is available in 25 metre coils and/or 5 metre straight lengths, and 32mm pipe is available in 5 metre straight lengths. The pipe is manufactured in accordance with A.S.2492, which is far more exacting than other approved plastics materials. Because the pipe is flexible and available in coils you can often use less fittings on a job.

MINIMUM COLD BENDING RADII

Ten times the outside diameter of the pipe used.

DIAMETER	RADII
16mm	160mm
20mm	200mm
25mm	250mm
32mm	320mm

Bending of the pipe for change of direction is preferable to elbows, however fittings will be required where sharp bends are necessary. Tighter bends can be achieved by using a bend support.

DO NOT USE PIPES THAT HAVE:

Kinks, cuts, deep scratches, squashed ends, imperfections or have been in contact with grease or tar substances. Any of the above should be cut out and replaced, as these conditions may affect the integrity of the system.

PIPE FLOW TESTS

FLOW CHART WORKED EXAMPLE

Q: How much head loss (pressure drop) occurs in an Auspex 16 mm PE-X pipe carrying hot water at 70°C with a required flow rate of 0.1 Litres/Second?

A: Place a ruler on the 0.1 Litres/Second mark on the bottom of the chart and measure up to cross the sloping line for the 16mm pipe. From this point draw a horizontal line to the line left hand side of the chart. This gives a head loss of 0.8 kPa/metre of pipe length. Multiply this value by the length of the total pipe to give the total head loss in the pipeline in kPa. The velocity of flow in the pipe is approximately 0.9 metres/second.

FLOW CHART TEMPERATURE CORRECTIONS

The AUSPEX flow charts are calculated for water at 70°C temperature. Where the water is at a different temperature the values from the chart need to be adjusted. Multiply the head loss by the appropriate factor in the table.

DIMENSIONS

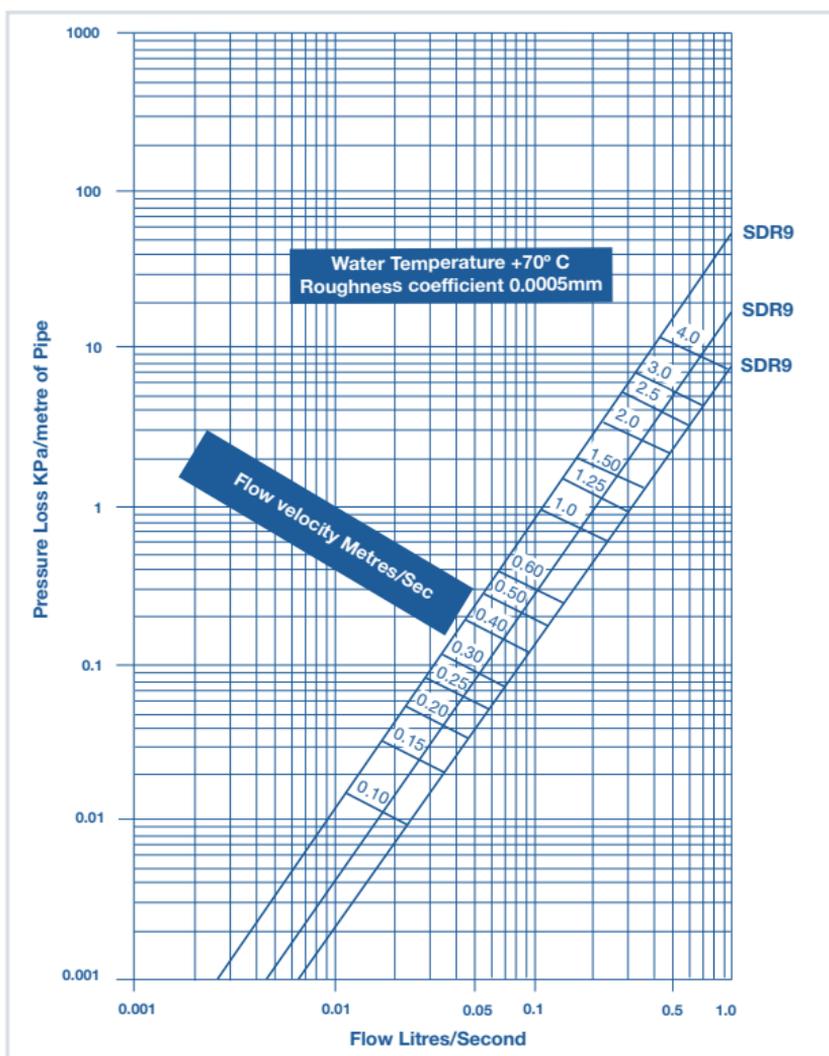
AUSPEX pipes are made to A.S.2492 dimensions for SDR9 pressure ratings.

THERMAL CONDUCTIVITY

Temperature loss from PE-X is very low compared to metallic products. For more specific calculations, the formula for thermal conductivity is:

$1.1 \times 10^{-3} \text{ cal/sec/cm/}^{\circ}\text{C}$

or 0.46 W/mK (Watts per metre Kelvin)



Size	Mean OD	Min Wall	Max Mean ID
16	16.0	2.0	12.3
20	20.0	2.3	15.7
25	25.0	2.8	19.7

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

CLIPPING

A.S.3500 recommend the following spacings:

DIAMETER	HORIZONTAL	VERTICAL
16mm	600mm	1200mm
20mm	700mm	1400mm
25mm	750mm	1500mm
32mm	850mm	1700mm

The above is a guide only. Good plumbing practice requires that clipping be installed so that stress is not imposed on the joint. When bending close to a joint, clips should be placed near the fitting in a manner not to stress the joint.

EXPANSION AND CONTRACTION

The pipe can handle thermal expansion because of its flexibility. It should freely move through the clips, studs, plates or walls. Synthetic clips are recommended.

Care should be taken in regard to contraction. Where pipes are installed between fixed points, allow 10mm slack per metre for contraction to overcome undue pressure on the joints if contraction occurs.

THE FORMULA FOR CALCULATING EXPANSION RATES IS AS FOLLOWS:

$$\Delta l = a \times L \times \Delta T$$

Δl = linear expansion in mm

a = coefficient of linear expansion is 0.15 mm/mK

L = length of pipe in metres

ΔT = temperature difference

The approximate expansion rate of PE-X is 7.5mm per metre in a change of temperature of 50°C.

TIMBER FRAMES

Drill holes through studs, plates etc. large enough so that the pipe can move freely through the holes to allow for expansion and contraction and pressure surges.

To avoid noises where pipes pass through studs, plates etc. that have large holes, consideration should be given to the use of a non aggressive compound, grommet or sleeve in the annular space in the stud or plate. Ensure that pipe is protected when bending against frames etc.

STEEL FRAMES

Ensure that where a pipe passes through a steel frame, a suitable sleeve or grommet is used to protect the pipe against raw edges so it is still able to move through the protective medium.

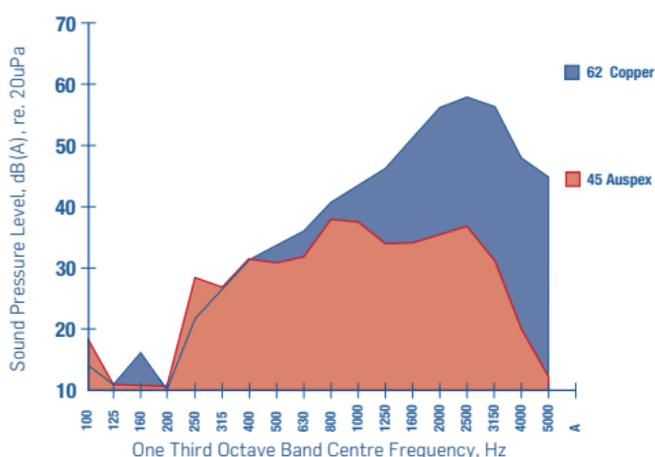
PIPES IN CHASES DUCTS OR CONDUITS

- 1.** Pipes in chases shall be continuously wrapped with an impermeable flexible material.
- 2.** AUSPEX SUPPLY PRE-COVERED 5 METRE LENGTHS SUITABLE FOR THIS PURPOSE.
- 3.** Ducts shall be fitted with removable covers.
- 4.** Conduits embedded in walls or floors shall comply with the requirements of the Australian or New Zealand Building Codes as applicable.

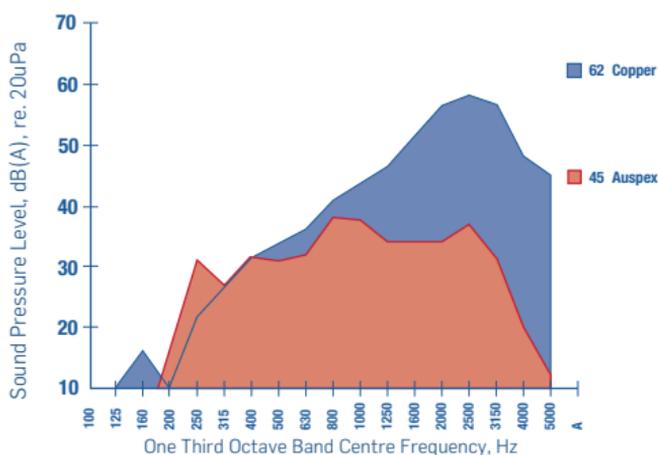
UNDER CONCRETE SLABS

Refer A.S.3500.

Measured noise level of water flow through nominal 15mm bore Auspex and copper pipe, 20L/min., 600kPa with DIN 52218 noise source.



Measured noise level of water flow through nominal 15mm bore Auspex and copper pipe, 20L/min., 700kPa with DIN 52218 noise source.



ACOUSTIC TESTS

RESULTS SUMMARY

The noise emitted by the pipes through the wall was mainly evident in the mid to high frequencies of the A-weighted spectrum.

Noise emitted at frequencies below 250Hz was affected by the level of background noise in the room.

The change in radiated noise level was greater with the change in water flow compared with the change in water pressure.

In all cases the overall noise level emitted by the Auspex pipe was less than for the copper pipe. For the same flow conditions the differences in overall noise level between the pipes was between 14 and 17dB(A).

CONCLUSION

Measurements of noise emitted from nominal 15mm bore pipes attached to the other side of a concrete block wall with water flowing through them and a noise source in the pipe showed that the Auspex cross-linked polyethylene pipe was between 14 and 17dB(A) quieter than the standard copper pipe.

Waterflow L/min	Water Pressure kPa	Measured Noise Level dB(A)		Difference dB(A)
		Auspex	Copper	Copper - Auspex
15	300	38	55	17
15	600	40	54	14
20	600	45	62	17
20	700	45	62	17

NON POTABLE WATER PIPE (NOT FOR HUMAN CONSUMPTION)

The pipe is manufactured in accordance with A.S.2492 however it is coloured in a special lilac colour specified and branded in accordance with the authorities requirements for the distribution of water not suitable for human consumption. This water is generally used for watering gardens and supply to cisterns.

RAIN WATER

Green pipe is available for rainwater applications. For larger bore Duopex Water (normally black) on approved green lay flat sleeving is available to signify this purpose.

PRECAUTIONS

CHEMICALS

Always check with the manufacturer before using PE-X pipe other than for potable water.

Always check with the manufacturer if the pipework is to be installed in a known contaminated area, in contaminated soils or may be subject to chemical spills.

ELECTRICAL

It is of the utmost importance that if a metallic pipe is being replaced or installed in part or in its entirety by a plastic pipe or other non-metallic fittings or couplings, the requirements of A.S.3500 must be followed. No work should be carried out until the earth requirements have been checked by an electrical contractor and modified if necessary.

PRODUCT LIST

BLACK PIPE

AP401605

16mm Auspex x
5m straight lengths

AP4016100

16mm Auspex x
100 metre coil

AP401650

16mm Auspex x
50 metre coils

AP412005

20mm Auspex x
5 metre straight lengths

AP412050

20mm Auspex x
50 metre coils

AP4120100

20mm Auspex x
100 metre coil

AP422505

25mm Auspex x
5 metre straight lengths

AP422525

25mm Auspex x
25 metre coil

AP433205

32mm Auspex x
5 metre straight lengths



BLACK PIPE (PRE-LAGGED)

For rendering, not heat retention.

AP401605LAG

16mm Auspex x 5 metre
pre-lagged length

AP412005LAG

20mm Auspex x 5 metre
pre-lagged length



PRODUCT LIST

CORRUGATED SLEEVING

Available on request.

[AP401625COR](#)

16mm Auspex x 25m coil

[AP412025COR](#)

20mm Auspex x 25m coil



LILAC PIPE*

[AP401650LIL](#)

16mm Auspex x 50 metre coil

[AP401605LIL](#)

16mm Auspex x 5 metre length

[AP412050LIL](#)

20mm Auspex x 50 metre coil

[AP412005LIL](#)

20mm Auspex x 5 metre length

[AP422525LIL](#)

25mm Auspex x 25 metre coil

[AP422505LIL](#)

25mm Auspex x 5 metre length

[DPW433205LILLAG](#)

Duopex Water Pipe 32mm x 5 metre sleeved length

[DPW444005LILLAG](#)

Duopex Water Pipe 40mm x 5 metre sleeved length

[DPW455005LILLAG](#)

Duopex Water Pipe 50mm x 5 metre sleeved length

[DPW466305LILLAG](#)

Duopex Water Pipe 63mm x 5 metre sleeved length

*Lilac pipe for recycled water. Marked in accordance with Australian Standards.



Duopex Water pipes are multi-layer pipes requiring the use of hydraulic tools

GREEN PIPE

For rainwater applications.

AP401605G

16mm Auspex x
5 metre length

AP401650G

16mm Auspex x
50 metre coil

AP412005G

20mm x 5 metre length

AP412050G

20mm x 50 metre coil

DPW433205GRLAG

Duopex Water Pipe 32mm x
5 metre sleeved length

DPW444005GRLAG

Duopex Water Pipe 40mm x
5 metre sleeved length

DPW455005GRLAG

Duopex Water Pipe 50mm x
5 metre sleeved length

DPW466305GRLAG

Duopex Water Pipe 63mm x
5 metre sleeved length



Duopex Water
pipes are
multi-layer
pipes requiring
the use of
hydraulic tools

PRODUCT LIST

RED PIPE

AP401650R

16mm Auspex x
50 metre coil

AP401605R

16mm Auspex x
5 metre length

AP412050R

20mm Auspex x
50 metre coil

AP412005R

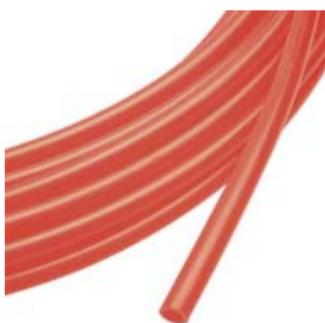
20mm Auspex x
5 metre length

AP422550R

25mm Auspex x
25 metre coil

AP422505R

25mm Auspex x
5 metre length



PREINSULATED RED PIPE

AP401625RR3

16mm Auspex 25 metre coil
– R.3 9mm wall

AP401625RR8

16mm Auspex 25 metre coil
– R.8 13mm wall

AP412025RR3

20mm Auspex 25 metre coil
– R.3 9mm wall

AP412025RR8

20mm Auspex 25 metre coil
– R.8 13mm wall

AP422525RR3

25mm Auspex 25 metre coil
– R.3 9mm wall

AP422525RR8

25mm Auspex 25 metre coil
– R.8 13mm wall

AP412050RR8W

20mm Auspex 50 metre coil
– R.8 13mm wall "WATERPROOF"





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