technical manual

UNIPEX

UNIPEX

The UNIPEX™ system is available Australia wide by

Plumbing Plus

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Contents

Overview

The UNIPEX™ system has been developed in response to the increasing demand for lead free plumbing systems in Australia.

The UNIPEX™ system utilizes one common fitting for both water and gas applications, eliminating the need to carry separate water and gas fittings.

The UNIPEX™ system combines lead free, silicon brass fittings with a premium quality PEX100 PN20 SDR 9 pipe for water applications and a composite, PE-AL-PEX pipe for gas applications.

This combination provides a flexible, lightweight and corrosion resistant plumbing system.

All installations are to be carried out by a licensed tradesperson and in full accordance with the UNIPEX™ installation guidelines, relevant Australian standards and any additional local authority requirements. When installed subject to the above conditions the UNIPEX™ system will provide years of trouble-free service.

Application

The UNIPEX™ system uses a newly developed crimping tool to produce a secure joint in a minimal amount of time. The crimping method produces a consistent level of compression around the full circumference of the crimp ring, guaranteeing a perfect seal every time, and eliminates the need for repairing partially and poorly welded joints etc.

UNIPEX™ fittings are to be installed in accordance with AS/NZS 3500 for water and AS/NZS 5601 for gas applications, these include:-

- Hot and Cold Potable Water
- Rainwater
- Recycled Water (non-potable)
- Natural Gas
- LPG

For optimum installation results, please take time to familiarise yourself with the installation considerations outlined on Pages 11-16 in this booklet.

UNIPEX™ Pipe

UNIPEX™ pipe is a high-quality cross-linked polyethylene PN20, SDR9 pipe, consisting of an inner core of PEX-B material encased in an outer layer of tough High-density polyethylene.

UNIPEX™ water pipe is used for potable (hot and cold), recycled and rain water systems as well as glycol systems. Contact your local UNIPEX™ supplier for more information and applications for use with other fluids.

UNIPEX™ also offers a multilayer composite (PE-AL-PEX) gas pipe specifically for natural gas and LPG applications. The pipe construction in made up of an internal PEXb inner layer encased in a layer of aluminium, which acts as a barrier layer, stopping gas migration, and an exterior layer of durable polyethylene to protect the aluminium layer.

UNIPEX™ pipe is available in DN16, DN20, DN25 and DN32 sizes, in either coils or straight lengths.

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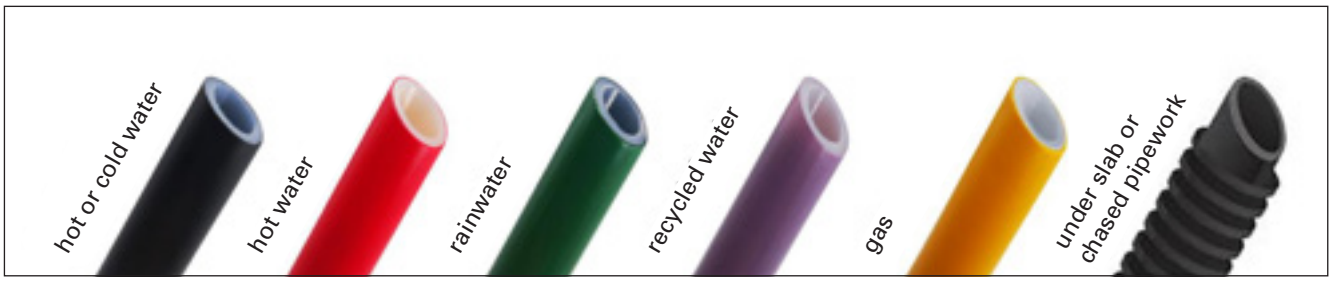
UNIPEX™ Pipe continued

UNIPEX™ Pipe - Standard Supply Units

Nom pipe size	Straight lengths (all)	Coil length (black)	Coil length (red)	Coil length (green)	Coil length (lilac)	Coil length (yellow)
16mm	5m	50m 100m	50m 100m	50m 100m	50m	50m
16mm (In Conduit)		50m	50m			
20mm	5m	50m 100m	50m 100m	50m 100m	50m	50m
20mm (In Conduit)		50m			50m	50m
25mm	5m	50m	50m	50m		50m
32mm	5m	25m				25m

The UNIPEX™ pipe is colour coded to assist the installer in avoiding cross connections.



BLACK	Hot & cold potable water
RED	Hot water
GREEN	Rainwater
LILAC	Recycled water (non-potable)
YELLOW	Gas
CONDUIT	In/under slab hot & cold water

UNIPEX™ pipe dimensions

Nom Size	Min OD (mm)	Min Wall Thickness (mm)
16mm	16.0	2.0
20mm	20.0	2.3
25mm	25.0	2.8
32mm	32.0	3.6

Performance

The use of UNIPEX™ pipe provides users with many advantages over traditional piping materials. It has excellent flexibility, offers a high degree of resistance to damage caused by freezing, as well as excellent pressure and temperature resistance. The PEX-B pipe is composed of lightweight material and has high insulation of noise and heat. Also, very low level of friction loss means UNIPEX™ pipe can often save users the need to upsize piping when installing long runs. As jointing methods are mechanical, it does not require the use of solvent adhesives, soldering, welding or brazing.

UNIPEX™ pipe temperature & pressure performance

AS/NZS 2492

Indicative working pressure relative to fluid temperature				
Temp (ºC)	20	40	60	70
Pressure (Kpa)	2000	1800	1500	1330

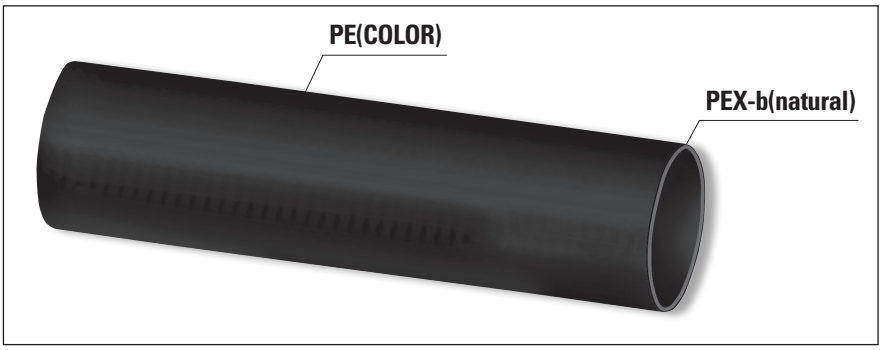
Temperatures above 70 degrees celsius for any period will affect the lifespan of the pipe. Please refer to the installation considerations of this manual

Pipe Construction

UNIPEX™ Water Pipe

(Black, Red, Green, Lilac)

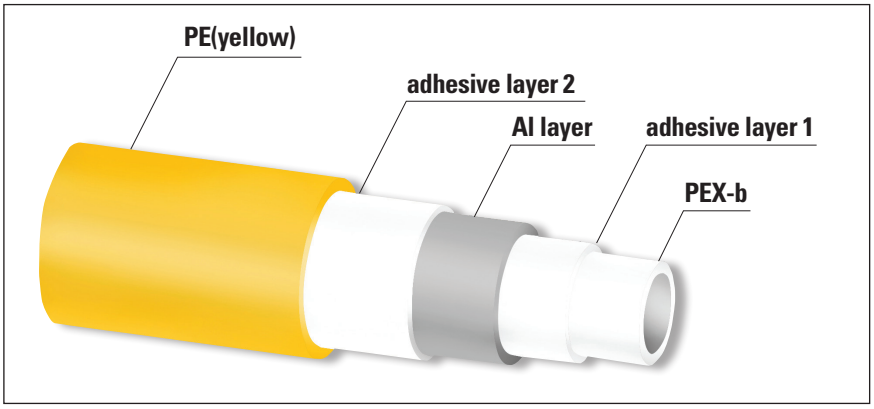
The UNIPEX™ water pipe consists of an inner core of cross-linked polyethylene (PEX-B), with a coloured outer layer of high-density polyethylene (coloured for application identification)



UNIPEX™ Gas Pipe

(Yellow)

UNIPEX™ gas pipe is a high-quality composite pipe. It has three separate layers bonded to form a lightweight, flexible and extremely resilient pipe. The inside layer is a cross linked polyethylene (PEX-B). This is surrounded by a layer of aluminium (Al) which in turn is encased with an outer layer of yellow coloured polyethylene (PE).



UNIPEX™ Fittings

The body of UNIPEX™ fittings are made from a high-performance, lead free, DZR silicon brass. The crimp ring is made of high quality stainless steel which when used with the UNIPEX™ crimping tool ensures a consistent reliable joint with both the UNIPEX™ water and gas pipes.

UNIPEX™ fitting dimensions

Nominal Size	Minimum Bore (mm)
16mm	8.6
20mm	11.6
25mm	14.9
32mm	19.0

Features and Benefits

Crimp Jointing Method	• Fast • Secure • Simple to use • No O-ring • Less time on the job • Less capital outlay on tooling • Internal sealing method reduces leaks due to scratched pipe • Without crimping, the fitting will leak at 100(kpa) onwards
Stock Consolidation	• Same fittings for water and gas pipe
Flame-free Assembly	• Increased safety • No need for gas cylinders or Hot Works permits • Reduced costs on welding consumables
Size Range DN15 – DN32	• Fittings available for most tasks
Acoustics	• Low noise transmissions in PEX-B pipe • Quieter, reduced water hammer

Installation Considerations

The UNIPEX™ System should always be installed in compliance with AS/NZS3500 for water applications and AS/NZS5601 gas applications.

Proximity to Flame and External Heat Sources

The UNIPEX™ system should not be installed in positions where it is likely to be exposed to a naked flame. If it is, there's a danger the pipe could ignite and continue to burn even after the source of the flame is extinguished.

In accordance with AS/NZS3500 all plastic pipes for water supply must be protected from excessive ambient heat.

As the UNIPEX™ gas pipe has a PE outer layer, its use is limited to applications with an ambient temperature of 60°C and below.

Installers should also ensure that all welding operations are completed and allowed to cool prior to assembling the UNIPEX™ joints.

Thermal Expansion

UNIPEX™ pipe has a thermal expansion rate of approximately 1.5mm per metre for every 10°C change in temperature. This expansion or contraction should be taken into consideration for any installation and the appropriate allowances made in the pipe layout or fixing positions. Care should be taken not to pull the pipe tightly between fixed points during installation as the pipe may later contract causing excessive tensile force to any joints.

Temperature & Pressure Performance

As with all plastic piping systems, the ability of the pipe to withstand pressure decreases as the pipe temperature increases.

Protection From Physical Damage

Due care should be taken to protect pipe and fittings from any physical damage both prior to, during and after installation. Possible causes of physical damage may include (but are not limited to) sharp edges or implements, machinery, rodents, excessive heat, long term UV exposure, radiation, mechanical forces, corrosive agents and high levels of chlorine and other chemicals that may have a detrimental effect on the piping

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Installation considerations continued

system. UNIPEX™ brass fittings should not come in contact with treated pine.

Both during and after installation, the product should not be damaged by grouting or stress caused by concrete stress cracks or any other external force.

Framework Penetrations

Where UNIPEX™ pipe penetrates timber or metal framework, appropriate precautions should be taken to protect it from damage. Holes should be sized to allow for longitudinal movement, expansion and contraction of pipe whilst still securing the pipe adequately.

Suitable grommets or sleeves should be used in metal frames to protect the pipe from abrasion. The use of silicone sealant or other chemical adhesives is not recommended for these purposes.

Water Pipe Bending

Do not apply bending forces to joints which have already been completed. Finish all bending operations prior to installing the fitting.

UNIPEX™ water pipe can be bent easily by hand. The radius of the bend should be not less than 8 times the diameter of the pipe. Due care should be taken during bending to ensure that the pipe is not damaged or kinked. If you do encounter a kinked or damaged section of pipe, it should be cut out and replaced as a precaution. The use of bend supports is recommended.

Minimum Bending Radius UNIPEX™ Water Pipe

Nom Size	Min Bending Radius (mm)
16mm	128
20mm	160
25mm	200
32mm	256

Gas Pipe Bending
UNIPEX™ gas pipe has limits as to the minimum radius that it may be bent. For smaller sizes (16 & 20mm) it can be easily bent by hand, in which case the radius of the bend should be not less than 5 times the diameter of the pipe.

It is also possible to use many of the mechanical bending devices currently available. In this case the minimum radius is as indicated on the following table:

Minimum Mechanical Bending Radius UNIPEX™ Gas Pipe

Nom Size	Min Bending Radius (mm)
16mm	160
20mm	200
25mm	250
32mm	320

UNIPEX™ Pipe Clipping
In accordance with AS/NZS3500 and AS/NZS5601, fixing spacing should be observed for both horizontal and vertical pipe runs as outlined in the table below.

Clipping should be by way of a recognised fixing which complies with the requirements of AS/NZS3500 and AS/NZS5601. This excludes things such as bent-over nails, tie wire, pierced metal strapping, etc.

It is recommended that UNIPEX™ pipe is installed using a suitably sized PEX clip to ensure secure fastening of pipe in a manner that will not exert stress on the fittings caused by thermal expansion and contraction of pipe.

For UNIPEX™ gas pipe work that is suspended on rod hangers, the minimum diameter of the rod hanger should be 9.5mm for all pipe sizes.

UNIPEX™ Pipe Clip Spacing Requirements

Nom Size	Vertical or Horizontal Run Spacing (m)
16mm	1m
20mm	1.25m
25mm	1.5m
32mm	2.0m

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Installation considerations continued

Underground Applications
UNIPEX™ Pipe should be buried with a minimum cover of 450mm. Marker tape should be installed approximately 150mm above the pipe. Additional precautions, such as wrapping of the pipe, should be taken in areas where aggressive soil conditions are known to exist or where it may be a requirement of the local certifying authority. The use of "Blue Metal" or "Crusher Dust" as a backfill material is to be avoided. Ground needs to be inspected to ensure it is not contaminated prior to burial of the pipe, and care should be taken to ensure that post-installation contamination does not occur.

When being buried beneath a building, the pipe should be free of joints.

Chases, Cast In-Slab and Underfloor Applications
Where UNIPEX™ pipe is installed in chases or cast in slabs the installation must be in accordance with both AS/NZS3500 for water applications and AS/NZS5601 for gas applications and any other relevant building regulations or standards.

A convenient and cost effective solution for these applications is the use of UNIPEX™ pipe, pre-sleeved in a durable and flexible polyethylene corrugated conduit – available as part of the UNIPEX™ piping range.

UV Exposure and Storage
All UNIPEX™ pipe should be protected from long-term exposure to UV by way of either lagging or enclosing in a conduit.

All UNIPEX™ gas exposed pipework is to be sleeved, wrapped or protected by some other means to ensure that the installation satisfies the relevant authorities and/ or the local authorities' interpretation of the Australian Gas Installation standard. Refer to AS/NZS5601 (protection against UV degradation).

Note: Additional thermal lagging may also be required to protect any of the pipes from temperature extremes.

Prior to installation, UNIPEX™ pipe should stored in a manner that provides protection from UV exposure.

If there is a possibility that the end of the pipe has been exposed to long term UV exposure in storage, it is suggested that the first 50mm of the exposed pipe is removed prior to installation.

Other Materials
Some commonly used materials are known to accelerate th decomposition of other connected materials within the installation. Due consideration should be given to this issue and the operating conditions

that all materials forming part of the installation may be exposed to.

Hot Water Ring Mains
In larger homes and commercial buildings hot ring mains are commonly used to decrease the time it takes for hot water to be delivered to the various outlets, especially those that are a significant distance from the hot water heater. Given the continuous high temperature and circulation of water within the pipework these are demanding applications for all piping systems, including PEX. To ensure the service life of PEX used in the flow and return pipework in a recirculating ring main the following installation practices and operating parameters must be met.

- Maximum water temperature of 60°C (actual measured, not set point)
- Maximum water pressure of 500kPa (as per AS/NZ3500)
- Maximum water velocity to be controlled as per the requirements of AS/NZS3500 for non-metallic piping
- Circulation time is to be limited to 12 hours per 24-hour period by means of timer operated pump
- The pipe work must be lagged
- It is also recommended to use a thermostat-controlled recirculation pump
- Ring main installations should include all required pressure/flow control, relief devices etc as required in order to ensure correct performance of the system

Further guidance on the installation of hot water ring mains is included in the relevant installation standards and should be applied at all times

Gas Appliance Connection
UNIPEX™ gas pipe is not to be used as an appliance connection in accordance with AS/NZS5601 (restriction on appliance connections).

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Installation considerations continued

Future Extension of Gas Pipework

It is a requirement of AS/NZS 5601 to allow for future extension of the consumer's pipe work. This may be done by way of:

An equal tee with a short piece of pipe fitted to the branch and terminated with a #3 male adaptor and brass screwed cap.

Connection to Other Materials

UNIPEX™ (using gas pipe only) is suitable for connection to most existing gas pipe work systems by the use of our range of threaded adaptors. When connecting to other materials, you should ensure that you use an approved gas sealant for all threaded fittings. It is also recommended to remove any remaining flux or other jointing compounds which could possibly compromise the integrity of the joint.

Caravans or Marine Craft

The use of UNIPEX™ gas pipe is not suitable for installation in caravans or marine craft. Its use in these situations may not comply with the relevant Australian standards.

Testing of UNIPEX™ Water Systems

In all installations at the completion of the water system rough-in, pressure testing must be carried out in accordance with AS/NZS 3500 for water installations and in addition to any other local regulations or requirements.

During testing, all joints should be checked for leaks, prior to burying or concealing the UNIPEX™ system. Without crimping, the fitting will leak at 100(kpa) onwards.

Testing of UNIPEX™ Gas Systems

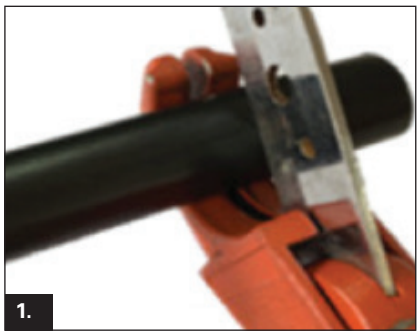
All testing should be undertaken in accordance with AS/NZS5601 – Appendix E (pressure testing for gas installations) and in addition to any other local regulations or requirements.

During testing, all joints should be checked for leaks, that they are assembled correctly and that the crimp operation has been completed properly.

Jointing Instructions for UNIPEX™ Water Systems

1. Cut pipe

Cut the pipe to required length using PEX cutters. The cut must be square and free of swarf or burrs.
Note: Do not use a hacksaw to cut pipe.


1.

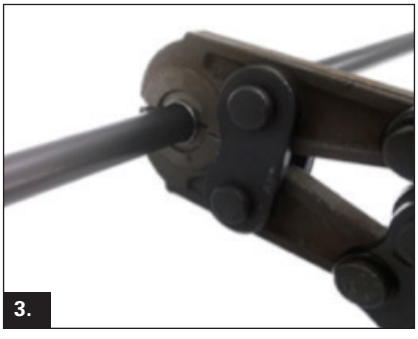
2. Insert pipe

Slide the pipe onto fitting until it reaches the pipe stop. The pipe must be visible through the witness holes on the crimp ring.


2.

3. Crimp tool positioning

Position the crimping tool centrally over the stainless steel crimp ring. Ensure the crimp tool is placed at 90° to the pipework. Close the jaws of the crimping tool (fully) to compress the stainless steel crimp ring.


3.

4.Check crimp ring

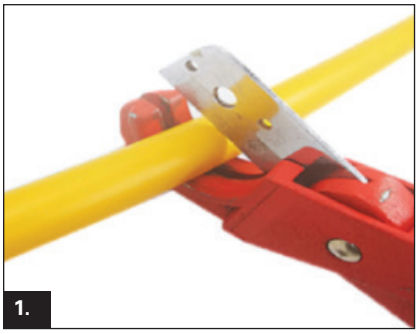
Use the crimping gauge to check that the crimp ring is fully compressed by placing the crimp gauge over the centre of the stainless steel crimp ring. A correctly crimped fitting will allow the crimp gauge to pass freely over the crimp ring.


4.

Jointing Instructions for UNIPEX™ Gas Systems

1. Cut pipe

Cut the pipe to required length using PEX cutters. The cut must be square and free of swarf or burrs.
Note: Do not use a hacksaw to cut pipe.


1.

2. Re-round pipe

This ensures the pipe will easily insert into the fitting


2.

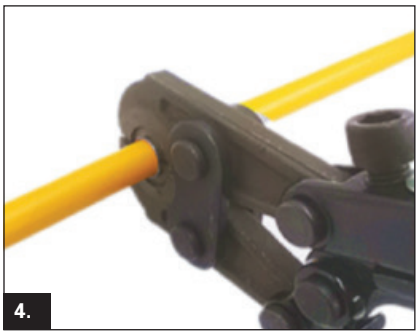
3. Insert pipe

Slide the pipe onto fitting until it reaches the pipe stop. The pipe must be visible through the witness holes on the crimp ring.


3.

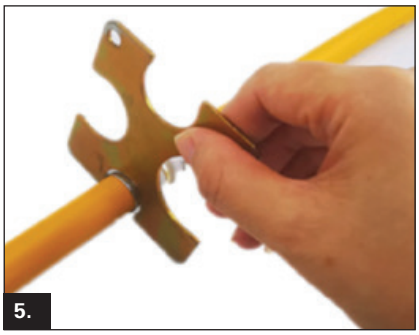
4. Crimp tool positioning

Position the crimping tool centrally over the stainless steel crimp ring. Ensure the crimp tool is placed at 90° to the pipework. Close the jaws of the crimping tool (fully) to compress the stainless steel crimp ring.


4.

5.Check crimp ring

Use the crimping gauge to check that the crimp ring is fully compressed by placing the crimp gauge over the centre of the stainless steel crimp ring. A correctly crimped fitting will allow the crimp gauge to pass freely over the crimp ring.


5.

Gas Pipe Sizing Calculations & Tables

The pipe sizing process is extremely important in ensuring that the installed system performs to the expectation of the end user. In the past, some installations have adopted a "near enough is good enough" approach to pipe sizing. This has in many cases resulted in sub-standard installations where appliances have been "starved" of gas and therefore have not functioned properly. Failure to correctly size systems could ultimately lead to voiding of the manufacturer's warranty.

Information required to complete the pipe sizing exercise:

a)	Gas type – Natural or LPG
b)	Gas consumption for each appliance in MJ/h
c)	Pressure available at the start of the consumer piping (meter pressure).
d)	Allowable pressure drop (the difference between meter pressure and minimum inlet pressure required by the appliance).
e)	Proposed layout for the pipe work in question.

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Gas Pipe Sizing Calculations and Tables continued

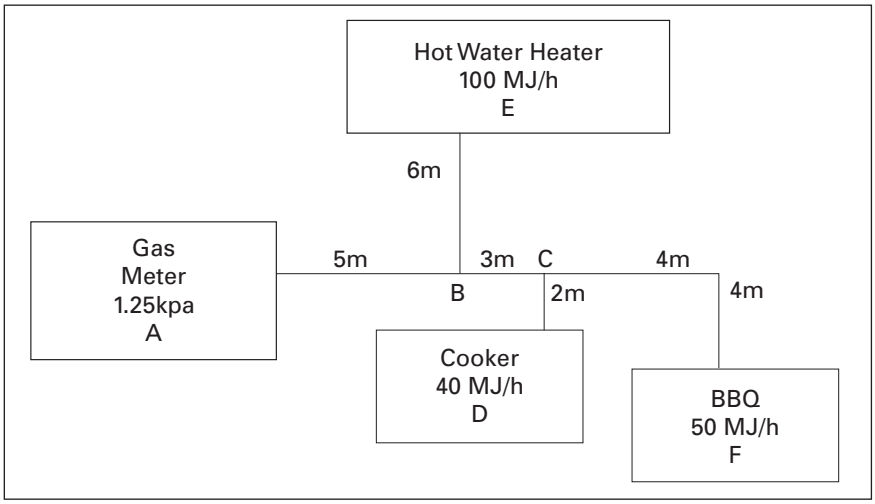
Method

1. Sketch the proposed piping layout including positions of all appliances.

a) Record all pipe lengths on the sketch, and the gas consumption of each appliance.

b) Allocate a letter to each branch on the diagram commencing at the meter with letter "A".

c) Allocate a letter to each appliance position on the diagram.



Reference the above diagram for subsequent steps.

2. Determine the main run.
This is the length of piping from the meter to the furthest appliance. This critical measurement will be used throughout the sizing process.

Example:
Main run for this diagram = 5m + 3m + 4m + 4m = 16m

3. Add an allowance for the number of fittings used on the main line.
For each tee, elbow, connector, coupling on the main line add the equivalent of 2m pipe length to your Main Run Length.

Example:
16m + 5 fittings @ 2m = 26m total

4. Select the pipe sizing table that corresponds with the gas type, supply pressure and allowable pressure drop required.

Example:
Use the table which is for natural gas 1.25kPa meter pressure with 0.12kPa pressure drop – this will allow available pressure of 1.13kPa at the appliance)

5. Prepare a simple chart to assist in calculating the pipe sizing for each section of piping.
For Gas Flow column, you record all flows that need to run through that section of pipe. Nom Pipe Size column is then filled by working from the table.

Pipe Section	Calculated Length (Main Run Length) + (Fitting Qty x 2)	Gas Flow (MJ/h)	Nom Pipe Size
A - B	26	50 + 100 + 40 = 190	32mm
B - C	26	50 + 40 = 90	25mm
C - D	26	40	20mm
B - E	26	100	25mm
C - F	26	50	20mm

6. Nom Pipe Size column is then filled by working from the pipe sizing table.

a) Select the Main Run Length from the figures shown under the "Pipe Run length" column.

(Always round up where applicable. In our example round up to 30)

b) Section A – B has a total flow rate of 190 MJ/h. Follow the 30m column down until you reach the 190 figure (or the next larger if your exact figure is not shown).

c) Read across the table to the indicated "Nominal Size".

(**Example:** 30m @ 210MJ/h = 32mm Pipe Size – next size down (25mm) will only handle 121MJ/h)

d) Insert this pipe size into your chart against the section for pipe section A – B.

e) Calculate the pipe size of remaining sections by using the MJ/h required to that point and the Main Run Length - not the pipe length for individual sections.

(**Example:** Run B - C you would use figures of 90MJ/h @ 26m which returns a result of 25mm Pipe Size)

The above methods make generous allowances for pipe sizing.

This has been done intentionally to allow for the possibility of appliance upgrades in the future.

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Gas Pipe Sizing Calculations and Tables continued

Notes

DN40 and above pipe & fittings not currently available

Natural Gas at 1.1 kPa with a 0.075 kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	92	69	59	52	45	41	35	31	27
20	203	136	107	95	90	88	82	77	72
25	375	251	198	167	147	132	129	127	125
32	767	516	408	360	303	273	249	230	215
40	1347	908	720	610	536	483	441	408	381
50	2630	1779	1413	1199	1056	951	870	806	753

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	24	20	16	14	12	11	10	9	8
20	67	62	52	44	39	34	31	28	26
25	124	111	101	95	89	82	76	69	63
32	202	178	161	146	134	124	116	110	106
40	358	315	283	258	238	222	209	199	189
50	708	622	560	512	473	473	415	393	373

Natural Gas at 1.25 kPa with a 0.12 kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	121	81	69	65	61	57	53	49	43
20	267	179	141	119	104	102	99	97	95
25	491	330	261	221	194	174	159	147	137
32	1002	676	535	454	399	359	328	303	283
40	1757	1188	943	800	704	634	580	537	501
50	3424	2322	1847	1569	1382	1245	1140	1056	987

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	39	31	26	22	20	17	16	14	13
20	90	80	74	69	62	55	50	45	41
25	129	123	121	119	111	105	99	94	87
32	266	234	210	194	182	170	160	152	146
40	472	414	373	340	315	294	276	261	248
50	930	817	736	673	623	582	547	517	492

Natural Gas at 2.75 kPa with a 0.25 kPa pressure drop

Pipe Run Length (m)									
Nom Size	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**
16	187	125	99	83	71	66	64	60	56
20	410	276	218	185	162	146	133	123	115
25	752	507	402	341	299	269	246	228	210
32	1527	1034	821	697	614	553	506	468	438
40	2670	1812	1442	1225	1080	973	891	826	772
50	5189	3531	2815	2395	2112	1906	1746	1619	1514

Pipe Run Length (m)									
Nom Size	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**
16	53	49	47	45	41	37	33	30	28
20	108	104	100	96	92	87	83	79	70
25	197	176	158	144	130	115	102	97	92
32	412	362	325	295	275	257	241	228	217
40	727	639	575	526	487	455	428	405	385
50	1426	1256	1132	1036	960	897	844	799	760

Natural Gas at 2.75 kPa with a 0.75 kPa pressure drop

Pipe Run Length (m)									
Nom Size	**2**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**
16	350	236	187	158	139	125	114	106	99
20	762	516	410	348	306	276	252	234	218
25	1390	944	752	639	563	507	464	430	402
32	2811	1915	1527	1299	1146	1034	947	878	821
40	4897	3343	2670	2274	2007	1812	1662	1541	1442
50	9478	6488	5189	4425	3909	3531	3240	3007	2815

Pipe Run Length (m)									
Nom Size	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**
16	93	81	73	66	60	56	53	51	50
20	199	180	162	148	137	128	120	113	108
25	378	333	299	274	253	237	223	211	200
32	774	681	614	562	520	486	458	433	412
40	1359	1197	1080	989	916	857	807	764	727
50	2654	2341	2112	1936	1795	1679	1582	1499	1426

Notes

DN40 and above pipe & fittings not currently available

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Gas Pipe Sizing Calculations and Tables continued

Notes

DN40 and above pipe & fittings not currently available

Natural Gas at 2.75 kPa with a 1.5kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	516	350	278	236	208	187	171	158	148
20	1120	762	607	516	455	410	376	348	325
25	2038	1390	1109	944	833	752	689	639	597
32	4109	2811	2247	1915	1691	1527	1401	1299	1216
40	7143	4897	3919	3343	2954	2670	2450	2274	2129
50	13794	9478	7597	6488	5738	5189	4765	4425	4145

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	139	122	110	100	93	87	81	77	67
20	306	269	242	222	205	192	180	171	162
25	563	495	446	409	378	354	333	315	299
32	1146	1010	911	835	774	723	681	645	614
40	2007	1771	1598	1465	1359	1271	1197	1134	1080
50	3909	3452	3118	2860	2654	2484	2341	2218	2112

Natural Gas at 4.0 kPa with a 1.5kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	520	352	280	238	209	188	172	159	149
20	1128	767	611	520	458	413	378	350	328
25	2052	1399	1117	951	839	757	693	640	595
32	4136	2829	2261	1928	1702	1537	1410	1308	1224
40	7189	4929	3945	3365	2974	2688	2466	2289	2143
50	13883	9540	7646	6530	5776	5223	4796	4454	4172

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	140	123	111	101	93	87	82	77	70
20	308	271	244	223	207	193	182	172	163
25	556	499	449	411	381	356	335	317	302
32	1154	1017	917	840	779	728	686	649	618
40	2021	1783	1609	1475	1368	1280	1206	1142	1087
50	3935	3475	3138	2879	2671	2500	2357	2233	2126

LPG at 2.75 kPa with a 0.25 kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	277	186	147	124	109	95	86	80	75
20	605	408	323	274	241	216	198	183	170
25	1107	749	594	504	444	399	365	338	316
32	2245	1523	1212	1030	907	817	748	693	643
40	4407	3001	2393	2036	1796	1620	1485	1377	1287
50	8546	5835	4660	3969	3504	3164	2901	2691	2518

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	71	64	61	58	64	58	58	53	49
20	160	141	126	113	102	93	86	81	77
25	297	261	234	214	198	185	174	164	156
32	610	536	483	441	408	381	359	339	322
40	1213	1068	962	881	816	762	717	679	646
50	2373	2092	1886	1728	1601	1497	1410	1335	1270

LPG at 70 kPa with a 10 kPa pressure drop

Pipe Run Length (m)									
Nom Size	2	4	6	8	10	12	14	16	18
16	2775	1917	1540	1318	1310	1056	970	902	845
20	5947	4119	3316	2841	2518	2281	2097	1950	1828
25	10723	7442	5998	5143	4562	4135	3805	3539	3319
32	21410	14888	12017	10313	9155	8304	7644	7114	6676
40	36960	25740	20795	17859	15863	14395	13257	12342	11587
50	70825	49402	39953	34341	30523	27712	25534	23782	22334

Pipe Run Length (m)									
Nom Size	20	25	30	35	40	45	50	55	60
16	797	704	636	584	542	507	478	453	431
20	1726	1527	1381	1268	1178	1103	1040	986	940
25	3134	2775	2511	2308	2144	2009	1896	1798	1714
32	6307	5589	5061	4654	4326	4056	3828	3633	3463
40	10949	9708	8797	8092	7526	7059	6665	6326	6033
50	21111	18733	16985	15631	14544	13646	12889	12240	11674

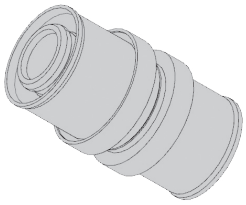
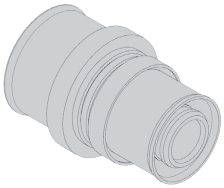
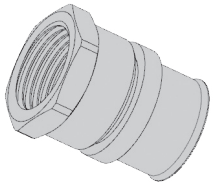
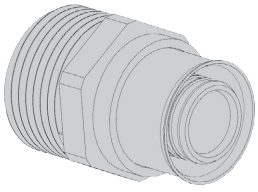
Notes

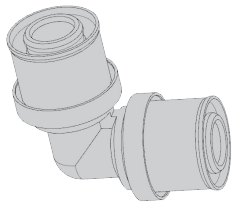
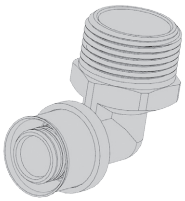
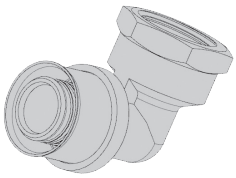
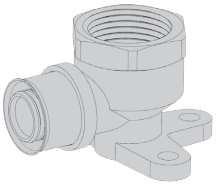
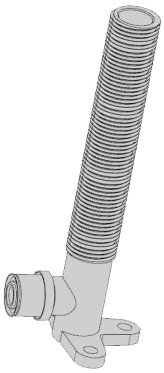
DN40 and above pipe & fittings not currently available

DN40 and above not currently available. Additional sizes have been included intentionally to allow for the possibility of appliance upgrades in the future.

Further information regarding pipe sizing methods is available in AS/NZS 5601, the Australian Standard for Gas Installations.

UNIPEX™ Fittings

PRODUCT DESCRIPTION	SIZE	PART #
#1 STRAIGHT COUPLING	DN16	535096
	DN20	535097
	DN25	535098
	DN32	535099
#1R REDUCING COUPLING	DN20 x DN16	535102
	DN25 x DN20	535104
	DN32 x DN25	535105
#2 FEMALE CONNECTOR	DN16 x 15BSPF	535149
	DN16 x 20BSPF	535144
	DN20 x 15BSPF	535150
	DN20 x 20BSPF	535151
	DN25 x 25BSPF	535305
	DN32 x 25BSPF	535306
	DN32 x 32BSPF	535307
#3 MALE CONNECTOR	DN16 x 15BSPM	535154
	DN16 x 20BSPM	535152
	DN20 x 15BSPM	535155
	DN20 x 20BSPM	535156
	DN25 x 25BSPM	535159
	DN32 x 25BSPM	535161
	DN32 x 32BSPM	535162

PRODUCT DESCRIPTION	SIZE	PART #
#12 ELBOW 	DN16	535108
	DN20	535109
	DN25	535110
	DN32	535111
#13 MALE ELBOW 	DN16 x 15BSPM	535163
	DN20 x 15BSPM	535164
	DN20 x 20BSPM	535165
	DN25 x 20BSPM	535167
#14 FEMALE ELBOW 	DN16 x 15BSPF	535169
	DN20 x 15BSPF	535170
	DN20 x 20BSPF	535171
#15BP ELBOW 	DN16 x 15BSPF	535178
	DN20 x 15BSPF	5351770
	DN20 x 20BSPF	535177
#19BP ELBOW 	DN16 x 15BSPM x 65mm Long - Low Inlet	535179L
	DN16 x 15BSPM x 90mm Long - Low Inlet	535176L
	DN16 x 15BSPM x 150mm Long	535175
	DN16 x 15BSPM x 200mm Long	535174
	DN20 x 15BSPM x 95mm Long	535173
	DN20 x 15 BPSM x 150mm Long	535183
	DN20 x 15 BPSM x 200mm Long	535180
	DN20 x 20BSPM x 200mm Long	535181

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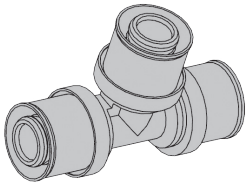
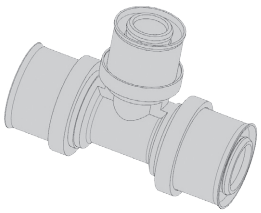
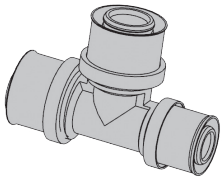
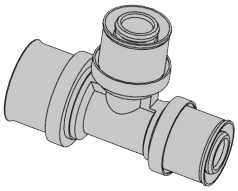
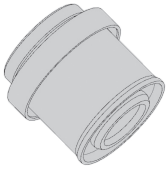
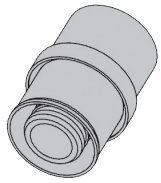
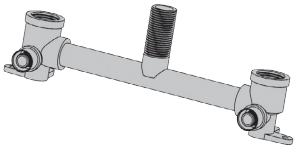
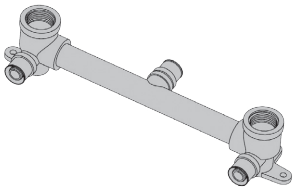
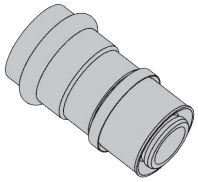
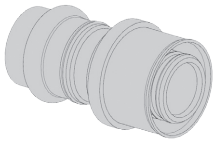
UNIPEX™ Fittings continued

PRODUCT DESCRIPTION	SIZE	PART #
#24 TEE EQUAL 	DN16	535114
	DN20	535115
	DN25	535116
	DN32	535117
#25 TEE RED. BRANCH 	DN20 x DN20 x DN16	535120
	DN25 x DN25 x DN20	535122
	DN32 x DN32 x DN20	535125
	DN32 x DN32 x DN25	535123
#26 TEE RED. END 	DN20 x DN16 x DN20	535126
	DN25 x DN20 x DN25	535128
#27 TEE RED. END & BRANCH 	DN20 x DN16 x DN16	535132
	DN25 x DN20 x DN20	535136
#61 STOPPER 	DN16	535204
	DN20	535205
	DN25	535206
	DN32	535207

PRODUCT DESCRIPTION	SIZE	PART #
CONNECTING BARB x CU SOCKET 	DN16 x 15CU	535215
	DN20 x 20CU	535216
	DN25 x 25CU	535217
BATH/LAUNDRY ASSEMBLY RIGHT ANGLE 	DN16 - 200mm Centres	535194
	DN16 - 300mm Centres	535193
	DN20 - 200mm Centres	535201
	DN20 - 300mm Centres	535202
SHOWER ASSEMBLY BOTTOM ENTRY 	DN16 - 200mm Centres	535199
	DN20 - 200mm Centres	535200
Copper Adaptor For Water (UNIPEX™ to Copper Press) 	DN16 x 1/2	W535301
	DN20 x 3/4	W535302
	DN25 x 1	W535303
	DN32 x 25	W535310
	DN32 x 32	W535311
Copper Adaptor For Gas (UNIPEX™ to Copper Press) 	DN16 x 1/2	G535301
	DN20 x 3/4	G535302
	DN25 x 3/4	G535304
	DN25 x 1	G535303
	DN32 x 25	G535310
	DN32 x 32	G535311

UNIPEX™ Water Pipe

PRODUCT DESCRIPTION	SIZE	PART #
UNIPEX™ PEX-B Pipe Water Black 	DN16 x 5m Straight Length	535502
	DN16 x 50m	535501
	DN16 x 100m	535500
	DN20 x 5m Straight Length	535522
	DN20 x 50m	535521
	DN20 x 50m (In Conduit)	535523
	DN20 x 100m	535520
	DN25 x 5m Straight Length	535541
	DN25 x 50m	535540
	DN32 x 5m Straight Length	535801
	DN32 x 25m	535802
UNIPEX™ PEX-B Pipe Water Red 	DN16 x 5m Straight Length	535507
	DN16 x 50m	535506
	DN16 x 100m	535505
	DN20 x 5m Straight Length	535527
	DN20 x 50m	535526
	DN20 x 50m (In Conduit)	535528
	DN20 x 100m	535525
	DN25 x 5m Straight Length	535546
	DN25 x 50m	535545
UNIPEX™ PEX-B Pipe Water Green 	DN16 x 5m Straight Length	535512
	DN16 x 50m	535511
	DN16 x 100m	535510
	DN20 x 5m Straight Length	535532
	DN20 x 50m	535531
	DN20 x 100m	535530
	DN25 x 5m Straight Length	535551
	DN25 x 50m	535550

PRODUCT DESCRIPTION	SIZE	PART #
UNIPEX™ PEX-B Pipe Water Lilac 	DN16 x 5m Straight Length	535517
	DN16 x 50m	535516
	DN16 x 100m	535515
	DN20 x 5m Straight Length	535537
	DN20 x 50m	535536
	DN20 x 100m	535535
	DN25 x 5m Straight Length	535556
	DN25 x 50m	535555

UNIPEX™ Gas Pipe

PRODUCT DESCRIPTION	SIZE	PART #
UNIPEX™ Gas Pipe Yellow 	DN16 x 5m Straight Length	535561
	DN16 x 50m	535560
	DN20 x 5m Straight Length	535566
	DN20 x 50m	535565
	DN20 x 50m (In Conduit)	535567
	DN25 x 5m Straight Length	535571
	DN25 x 50m	535570
	DN32 x 5m Straight Length	535810
	DN32 x 25m	535811

UNIPEX™ Crimp Tool

PRODUCT DESCRIPTION	SIZE	PART #
UNIPEX™ Hand Tool	DN16	535600
	DN20	535601
	DN25	535602

Rems Mini Press

For UNIPEX™ Crimp sizes DN16 to DN32

Super light, super small, and super handy. With automatic circuit control. Secure crimping in seconds. Automatic locking of pressing tongs. Assortment of REMS pressing tongs available for the UNIPEX™ system.

25 Year Warranty

This product is supplied with a 25-year warranty against any manufacturing defects. The period of the Warranty commences on the date of sale and ends on the anniversary of the date of sale. Any defective product will be repaired or replaced free of charge.

Warranty Conditions

- This warranty is only applicable to UNIPEX™ Pipe & Fittings used as a system and voided if used with other branded pipes, fittings or materials.
- Installation must have been carried out by a licensed plumber and gasfitter.
- Failure is due to a fault in the manufacture of the product.
- Installation of the product has been in accordance with the installation instructions as per the current (at time of installation) UNIPEX™ Technical Manual.
- Installation must be in full accordance with the relevant local and National Plumbing codes and appropriate Australian Standards (AS/NZS 3500).
- The system in which the product is installed must not be operated at temperatures and or pressures that exceed the printed rating on the appropriate specification sheet.
- This warranty does not extend to failure or defect caused by normal wear and tear, mechanical overload, paint, adhesives, abrasion, corrosion or over pressurization.
- No liability will be accepted for loss of profits, loss of revenue, loss of use, loss of contracts, loss of production or any other consequential loss or damage.

Claim Procedure

- This Warranty is offered by the manufacturers of the UNIPEX™ pipe and fittings and the Plumbing Plus Merchant (Merchant) from whom you purchased the product. The Merchant involved should be notified of any potential claim immediately. Proof of purchase is required to validate the warranty period and if this is not available, the warranty period shall default to the date of manufacture for each product. The product needs to be inspected by an authorized representative of the manufacturer within 30 days of the alleged product failure.
- To be entitled to claim under this Warranty, you must send a Warranty Claim Form to the Merchant.
- Should product be returned, a sufficient length of pipe must be supplied so that all the pipe markings are visible. Should a fitting be returned, it must be supplied with the pipe still attached with sufficient length of pipe to show the markings.
- If the Merchant needs to return the goods to the manufacturer for assessment or repair, the Merchant will arrange delivery and bear the associated costs.
- The manufacturer and the Merchant also reserve the right to engage a nominated outside agent to assess any faulty product before honouring any warranty claim.
- Once a reasonable pre-approved amount is confirmed in writing by the manufacturer, repairs can begin.
- Any repairs or replacement undertaken without the manufacturer's or the Merchant's approval will not be covered by this Warranty.

Exclusions

Plumbing Plus BKL Pty. Ltd. is not a party to this Warranty Agreement.

Australian Consumer Law

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law (ACL). For instance, you may be entitled to a replacement or refund or entitled to have the goods repaired or replaced if they are defective.

WaterMark™

Notes

Notes

UNIPOX

Edition 2, May 2021