iPLEX Pipelines

K1 Gas™

Composite Gas Pipe System

IPLEX PIPELINES - THE COMPANY

Iplex Pipelines (NZ) Limited manufactures a comprehensive range of plastic pressure and non-pressure pipe systems for the building, civil, rural, telecommunication, energy and export markets. Iplex is well supported on new and innovative products and technical innovation by Iplex Pipelines Australia and Wavin B.V. in the Netherlands.

Access to international production equipment, product lines and support enables Iplex to offer specialised products to meet the needs of local specifiers, contractors and trade customers.

For further information on our product range and added value services, please contact your local office of Iplex Pipelines or visit our website on **www.iplex.co.nz.**

Quality Assurance

All pipes and fittings produced by Iplex Pipelines are manufactured using a Quality Management System accredited to ISO 9001:2000.

Market Segments

Iplex Pipelines manufacture and supply pipe and fittings to the following four principal market segments.

Plumbing: Pipes and fittings used within the property boundary for reticulation of potable and non-potable water, sanitary plumbing, wastewater, drainage and gas reticulation.

Civil: Pipes and fittings for the development and maintenance of water and wastewater pipeline networks. Essentially the product produced for this segment covers any pipeline outside the property boundary line.

Rural: Pipes and fittings for rural use, specifically irrigation, stock water reticulation, land drainage, effluent dispersal and culverts.

Energy and Telecommunication: Pipes and fittings for the development and maintenance of gas, electrical and telecommunication pipeline networks.

CONTENTS PAGE

Iplex Pipelines is dedicated to providing specifiers, plumbers, gasfitters and developers with a wide range of pipes and fittings that will satisfy residential, commercial and industrial building requirements.

All products are fully supported by Iplex senior mangement, product specialists, laboratory, and production facilities.

Our plumbing products porfolio consists of innovative ranges that offer reassured performance and reliability, meeting the requirement of locally recognised standards.

You can obtain further assistance and technical guidance by contacting any of our product specialists, Iplex territory managers or customer service representatives on 0800 800 262.

THE SYSTEM

This manual details the features, benefits, technical information and installation guidelines for the Iplex K1 Gas™ Composite pipes and DR brass fittings system:

Iplex K1 Gas™ is a universal pipe and fittings system that is flexible enough to be bent by hand, extremely lightweight and corrosion resistant.

The system consists of composite pipes and DR brass fittings with a retained copper crimp ring.

Installation should be in accordance with the requirements of NZ 5261 or AS 5601. The system should only be installed by a registered gasfitter holding a current practising license.

It is proven to be of high quality, and because the fittings are crimped to the pipe (and not brazed) it is also very economical to install.

Fields of Application

K1™ is designed for domestic, commercial, and industrial gas applications.

THE SYSTEM (cont.)

Features & Benefits

- Same tools can be used to install the Iplex K2 Water™ system
- Choice of manual or battery operated crimp tools
- Fittings have pipe depth insertion window
  Helps ensure pipe is pushed in to required depth.
- Fittings have “gas yellow” crimping ring retainer for easy identification
- No o-rings on fittings
  Increased flow efficiency
- Quick, easy and safe assembly by proven crimp technique
  Simple and effective crimp fittings
- Economical to install
- Extremely flexible and strong
  Pipes can easily be manipulated around obstructions
- Light weight
  Quick and easy to install
- Free of incrustations, corrosion resistant
  Maintains a smooth internal surface, hindering the build-up of deposits
- Iplex 25 year Warranty (conditions apply)

K1™ COMPOSITE PIPES

Composite pipes are being used throughout the world for gas and water applications. They are recognised for their corrosion resistance, diffusion density, and flexibility while remaining dimensionally stable due to the high impact strength of the pipe. Iplex K1 Gas™ is suitable for use in residential, commercial and industrial installations.

Technical Data

Physical characteristics:
K1 Gas™ pipes are extruded in layers comprising of

Inner layer: PE-HD* (Gas yellow colour)
Middle layer: Aluminium
Outer layer: PE-HD* (Gas yellow colour)

Note: Each layer is joined using a coupling agent.

Colour

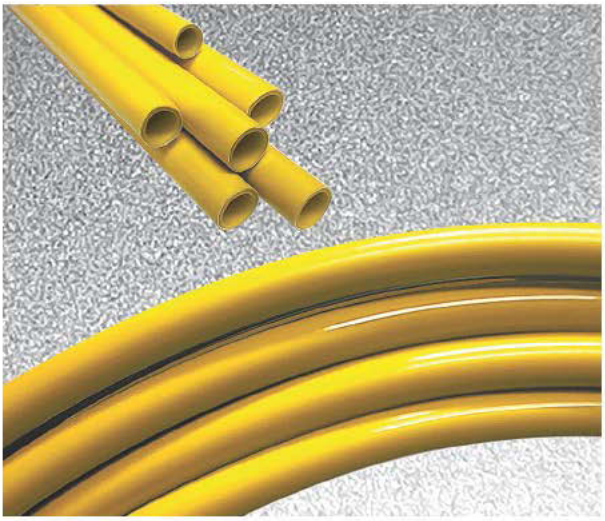
Gas Yellow

* PE-HD (High density polyethylene)

Pipe Approvals

The Iplex K1 Gas™ system performs to the requirements of AS 4176.

Iplex Pipelines offer a 25 year warranty with the Iplex K1 Gas™ system. (conditions apply)



Pipe supplied in 5 metre straight lengths up to 50mm, and coils up to 32mm.

Dimensions of K1™ composite pipe	
Nom. outside diameter	Mean bore
DN16 – 16 mm	11.9 mm
DN20 – 20 mm	15.5 mm
DN25 – 25 mm	20.0 mm
DN32 – 32 mm	26.1 mm
DN40 - 40mm	32.0 mm
DN50 - 50mm	41.0 mm

K1™ FITTINGS

Iplex K1™ fittings are specially designed and engineered to complement Iplex K1 Gas™ pipes. Every fittings carton contains an installation instruction leaflet, which must be followed to ensure correct installation in accordance with Iplex Pipelines recommendations.

Technical Data

Raw material - fittings:
Dezincafication resistant (DR) brass
Retained copper crimp ring (retainer coloured “gas yellow”)
Fittings have pipe depth insertion window

DR Brass Fittings
Iplex K1™ DR brass fittings are fully dezincification resistant to AS 2345 and are precision CNC machined.

Copper Crimp Rings
All Iplex K1™ DR brass fittings have an annealed copper crimp ring with a pipe depth insertion window to provide visible assurance that the pipe has been pushed fully into fitting.
The crimp rings are held on by a distinctive “gas yellow” retainer.

Dimensions of K1™ composite pipe fittings

Nom. outside diameter	Mean bore
DN16 – 16 mm	8.6 mm
DN20 – 20 mm	12.1 mm
DN25 – 25 mm	16.7 mm
DN32 – 32 mm	20.3 mm
DN40 - 40 mm	26.0 mm
DN50 - 50 mm	34.7 mm

Flow Characersistics

All fittings have been specially designed to optimise system flow performance.

Designed for New Zealand Gasfitters

Several K1™ fittings have been designed to specifically meet the needs of the New Zealand Gasfitter.

Fittings Approvals

Iplex K1™ fittings are manufactured from dezincafication resistant brass compliant with AS 2345.

Fittings meet the requirements of AS 4176 and are approved under Australian Standards Mark License No. SMKP20559.

Iplex Pipelines offer a 25 year Warranty with the Iplex K1 Gas™ system (conditions apply).

INSTALLATION TOOLS

Crimp tools are precision instruments engineered to ensure a simple, effective joint. The principle of this jointing method is well proven in many applications throughout Australia and New Zealand. It is used extensively around the world for connection of pipes and fittings for gas, hot and cold plumbing, and in-floor heating systems.

Care should be taken with crimp tools to ensure that moving parts are not damaged.

Refer to individual tool instructions for maintenance and correct use.

Calliper gauges are available to check that the copper crimp ring has been successfully crimped by the tool.

Only the Iplex tools specified in this document can be used to crimp the Iplex K1 Gas™ system.

See Product Range section for complete range of tooling options

GENERAL INSTRUCTIONS

Connection and installation of the Iplex K1 Gas™ pipes and fittings system must be carried out by a registered, and currently licensed gasfitter in accordance with Iplex Pipeline's jointing and installation instructions.The installation must also meet the requirements of NZ 5261 and/or AS 5601, as well as any specific Local Authority and Regulatory codes and by-laws.

JOINTING

Step 1

- Cut pipe squarely with the K1™ pipe cutter, Iplex part No. REMSPIPECUTTER or FK203064700.
- Do not use a hack saw.

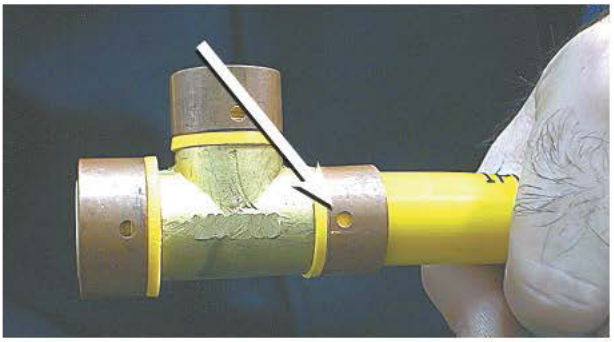
Step 2

- Calibrate pipe with the Iplex rounding tool. Part No. FK1RNDTOOL.

JOINTING (cont.)

Step 3

- Slide the pipe onto the fitting until it stops.
- If fitted correctly, the pipe should be visible through both copper crimp ring windows (arrowed below).
- The fitting must be assembled with the copper crimp ring attached to the yellow plastic retainer to ensure the brass does not come into contact with the aluminium in the pipe and to ensure a secure joint.
- Ensure that the copper crimp ring is firmly attached to the plastic retainer ring. If the copper crimp ring has moved away from the plastic retainer ring, push it back onto the plastic retainer ring by hand before crimping.



JOINTING (cont.)

Step 4

- Open crimp jaws / handles as wide as possible.
- Position crimp jaws squarely over the copper crimp ring. i.e at 90 degrees to the pipe direction.
- Hand tools - ensure that the full jaw width of the tool makes contact with the copper crimp ring prior to crimping.
- Power tools - position the jaws over the full width of the copper crimp ring.
- Avoid crimping over the plastic retainer ring.
- Compress the crimp tool jaws fully over the copper crimp ring.
- Once completed open the crimp tool jaws and remove tool from fitting.

Step 5

- Once crimp completed check every joint with the Iplex calliper gauge (code FKP64).
- Gauge tips must slide freely over the crimped copper ring at 90° to the tool jaw split line.

Connections can only be guaranteed if completed with Iplex approved tools.

All tooling must to be protected against dirt and damage, and should be cleaned, checked regularly and serviced as required.

Lubrication of any kind must not be used on pipe or fitting in jointing process.

Under-crimping

Under-crimping (i.e. when gauge does not pass freely over copper ring) can occur when:

1. The crimp tool has not been closed completely on copper ring.
2. The crimp tool is out of calibration (where possible, readjustment should be completed in accordance with instructions supplied with the tool).

JOINTING (cont.)

If sufficient care is not taken when jointing, the consequences can be improper sealing, and potential gas leaks.

The most likely causes of faulty connections are:

1. Copper crimp sleeve has separated from retaining ring and fitting.
2. Crimp tool has been incorrectly centred over copper crimp sleeve, resulting in partial crimp.
3. Pipe has not been pushed fully into fitting prior to crimp being completed.
4. Pipe has not been cut squarely.
5. Poorly maintained or damaged tool.

If a faulty connection is detected:

- Cut out the defective joint and replace with new fitting.

If the pipe is kinked or damaged:

- The faulty section of the pipe should be replaced.

Testing and inspection

Testing should be performed to the requirements of NZ 5261 or AS 5601 and in line with Local Authority recommendations.

While the system is under test, all joints and fittings should be inspected for leaks to ensure that pipe and fittings have been successfully joined.

Connecting Iplex K1 Gas™ to other composite pipe, copper pipe, steel pipe systems or appliances

Threaded fittings – brass or copper threaded fittings should not be used to connect with other non-metallic threaded fittings. Use an approved gas thread sealant to seal all threaded fittings.

When using brazing tails to connect copper pipe or metal fittings to K1™ pipe, always braze the brazing tail to the copper pipe or metal fittings first and allow it to cool before assembling the K1™ pipe.

At least four ribs should be shown on the brazing tails to allow for an effective joint to be made.

It is recommended that silver brazing alloys are used and that all flux deposits are removed once the joint has been made.

Excessive heat can damage K1 Gas™ composite pipe. When brazing copper pipes or fittings near K1™ pipe it is recommended a damp rag be used to protect the pipe from potential harm.

Future extension

To allow for future extension to the system the following configurations are suggested.

It is recommended the future extension Tee be located within four metres of the gas meter or LPG cylinder. It should be located in a safe and accessible location on the main run.

1. Tee piece joined to a small length of pipe, then joined to a male iron adaptor and sealed with a threaded cap.

2. Male threaded off-take tee sealed with a threaded cap.

Pipe bending

Due to its flexibility, Iplex K1 Gas™ pipe can be easily formed around obstructions or correctly positioned through studs and plates minimising the number of fittings used.

Note: Never apply bending forces to a crimped fitting. Pipe must always be bent prior to attaching pipe to fitting.

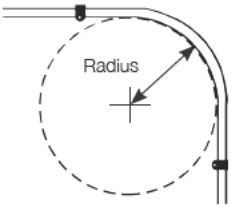
It is recommended that the minimum **hand-bending** radius be 5 times the outside diameter of the pipe for 16mm and 20mm pipe and 8 times the outside diameter for 25mm pipe. If this is not possible an Iplex K1 Gas™ elbow should be used.

It is recommended that the minimum **spring-bending** radius be 3 times the outside diameter of the pipe for 16mm and 20mm pipe and 4 times the outside diameter for 25mm and 32mm pipe and 5 times the outside diameter for 40mm and 50mm pipe. If this is not possible an Iplex K1 Gas™ elbow should be used.

If for any reason the pipe is kinked or damaged, the faulty section should be replaced.

Minimum hand-bending radius	
16mm pipe	80mm min. radius
20mm pipe	100mm min. radius
25mm pipe	200mm min. radius

Minimum spring-bending radius	
16mm pipe	48mm min. radius
20mm pipe	60mm min. radius
25mm pipe	100mm min. radius
32mm pipe	128mm min. radius
40mm pipe	200mm min. radius
50mm pipe	250mm min. radius



Minimum bending radius

Fixing Clips

Installation in accordance with NZ 5261 and or AS 5601, Iplex K1 composite pipe installed above ground shall be retained in position by clips at intervals complying with the table below:

The use of pipe clips

Nom. pipe diameter	Horizontal or graded pipes	Vertical pipes
16mm	1,000mm	1,000mm
20mm	1,250mm	1,250mm
25mm	1,500mm	1,500mm
32mm	2,000mm	2,000mm
40mm	2,000mm	2,000mm
50mm	2,500mm	2,500mm

Timber and metal framework

Holes drilled in studs or plate's etc shall be accurately sized to allow for longitudinal pipe movement, caused by thermal expansion and contraction of the pipe.

In metal framework suitable grommets or a sleeve must be installed to minimize abrasion and physical damage to the pipe.

Note: Use of silicone and other such materials is not required and could be detrimental to the pipe.

Corrosive environment

As per the requirements of AS 5601 and any recognised Local Authority requirements, pipes and fittings installed in a potentially corrosive environment must be protected, i.e. marine environments.

Protection from physical damage

As per the requirements of NZ 5261 or AS 5601 and any recognised Local Authority requirements, pipes and fittings must be protected against physical damage. This includes, but is not limited to, physical damage caused by exposure to direct sunlight, human activity, mechanical equipment, rodents or other animals. Installation is not permitted in caravans or marine crafts.

INSTALLATION GUIDE (cont.)

Protection from physical damage (cont.)

When Iplex K1™ pipe is installed externally above the ground, it must be protected against degradation from exposure to ultraviolet light. Iplex recommends that the pipe be lagged or sleeved when exposed to UV.

Pipe buried underground must be at least 450mm deep and covered with marker tape, approximately 150mm above the pipe. If the pipe is buried under a building, there must be no joints in the pipe.

Thermal expansion

The linear thermal expansion rate of Iplex K1 Gas™ Composite pipes is approximately 2.5mm for every 10°C temperature change for each 10 metres of pipe.

Therefore, when pipes are installed in situations where they will be subjected to significant temperature change, provisions must be made for potential movement of the pipe.

Iplex K1 Gas™ pipes should not be pulled tight between fixed points as this will prohibit movement if the pipe contracts, that will result in excessive tensile force on joints and fittings.

SYSTEM LABELLING

The Iplex manufacturer's System Label must be displayed near the meter or LPG cylinder (see product range section). The label needs to indicate the brand of composite pipe, the location of the future extension tee and contact details. The label must not be attached to the meter or LPG cylinder as these may be exchanged.

SIZING TABLES FOR CRIMP FITTINGS (Natural Gas)

Flow through PE-HD/AL/PE-HD Composite Pipe Crimped Fittings (MJ/h)

Low Pressure

Pressure Drop 0.12kPa (Meter Pressure 1.25kPa) K1									
Nom.	Length of straight pipe in metres								
Size	2	4	6	8	10	12	14	16	18
16mm	109	75	60	51	45	41	38	35	33
20mm	217	149	120	103	91	82	76	70	66
25mm	424	291	234	200	177	161	148	138	129
32mm	851	585	470	402	356	323	297	276	259
40mm	2090	1372	1080	903	794	713	649	602	560
50mm	3835	2505	1959	1642	1438	1286	1169	1081	1005

	20	25	30	35	40	45	50	55	60
16mm	31	27	22	19	17	15	13	12	11
20mm	62	55	50	46	43	40	38	35	32
25mm	122	108	98	90	84	79	74	71	67
32mm	245	217	197	181	168	158	149	142	135
40mm	527	458	413	374	349	327	305	287	272
50mm	943	822	735	670	617	577	540	510	484

Low Pressure

Pressure Drop 0.25kPa (Meter Pressure 2.75kPa) K1									
Nom.	Length of straight pipe in metres								
Size	2	4	6	8	10	12	14	16	18
16mm	161	111	89	76	68	61	56	52	49
20mm	323	222	178	153	135	122	113	105	98
25mm	629	433	348	298	264	239	220	205	192
32mm	1267	871	699	598	530	480	442	411	386
40mm	2930	1899	1474	1232	1058	948	865	799	730
50mm	5299	3573	2837	2417	2103	1899	1741	1624	1492

Size	20	25	30	35	40	45	50	55	60
16mm	46	41	37	34	32	30	28	26	23
20mm	93	82	75	69	64	60	57	54	51
25mm	181	161	146	134	125	117	110	105	100
32mm	364	323	293	269	250	235	222	211	201
40mm	689	598	537	479	442	411	386	359	343
50mm	1417	1248	1132	1013	950	891	846	787	752

Note: Every fitting used within Iplex K1™ system, including tees, elbows, reducers, meter connections, and appliance connections has an equivalence equal to 2.5 metres of pipe.

SIZING TABLES FOR CRIMP FITTINGS (Natural Gas)

Flow through PE-HD/AL/PE-HD Composite Pipe Crimped Fittings (MJ/h)

High Pressure

Pressure Drop 0.75kPa (Meter Pressure 2.75kPa) K1									
Nom.	Length of straight pipe in metres								
Size	2	4	6	8	10	12	14	16	18
16mm	292	201	161	138	122	111	102	95	89
20mm	585	402	323	276	245	222	204	190	178
25mm	1142	785	630	539	478	433	398	371	348
32mm	2295	1577	1267	1084	961	871	801	745	699
40mm	7742	5019	3896	3255	2795	2506	2285	2112	1928
50mm	14003	9442	7497	6388	5557	5018	4600	4293	3944

	20	25	30	35	40	45	50	55	60
16mm	84	75	68	62	58	54	51	49	46
20mm	168	149	135	124	116	109	103	97	93
25mm	328	291	264	243	226	212	200	190	181
32mm	660	585	530	488	454	426	402	382	364
40mm	1820	1579	1418	1266	1168	1087	1021	948	905
50mm	3743	3299	2992	2676	2511	2354	2235	2079	1988

Note: Every fitting used within Iplex K1™ system, including tees, elbows, reducers, meter connections, and appliance connections has an equivalence equal to 2.5 metres of pipe.

SIZING TABLES FOR CRIMP FITTINGS (LPG)

Flow through PE-HD/AL/PE-HD Composite Pipe Crimped Fittings (MJ/h)

LPG

Pressure Drop 0.25kPa (Meter Pressure 2.75kPa) K1									
Nom.	Length of straight pipe in metres								
Size	2	4	6	8	10	12	14	16	18
16mm	277	190	153	131	116	105	97	90	84
20mm	554	381	306	262	232	210	193	180	169
25mm	1081	743	597	511	453	410	377	351	329
32mm	2173	1494	1199	1027	910	824	758	706	662
40mm	4570	2963	2300	1921	1650	1479	1349	1247	1138
50mm	8266	5574	4426	3771	3281	2962	2716	2534	2328

	20	25	30	35	40	45	50	55	60
16mm	80	71	64	59	55	51	49	46	44
20mm	159	141	128	118	110	103	97	92	88
25mm	311	276	250	230	214	201	189	180	172
32mm	625	554	502	462	430	403	381	362	345
40mm	1075	932	837	747	690	642	603	560	535
50mm	2210	1948	1766	1580	1482	1389	1320	1227	1174

Note: Every fitting used within Iplex K1™ system, including tees, elbows, reducers, meter connections, and appliance connections has an equivalence equal to 2.5 metres of pipe.

PIPE SIZING EXAMPLE

The following example uses Natural Gas with a Meter Pressure of 2.75kPa with a Pressure Drop of 0.75kPa. (Refer page 21).

Step 1 – Add the mega joule rating of all the appliances
(190+ 30+70) = 290MJ/h

- Refer to Iplex Gas Sizing Tables to calculate the pipe size of the longest run:
  A-B + B-C + C-D (13 + 10 + 8) = 31m
  (No fitting allowance required)
- Look up the table at the next highest length value =35m
- Look for mega joule rating of the appliance (290 MJ/h)
- Calculate pipe size = 32mm
- Apply this pipe size to (A-B) = 32mm

Step 2 – Calculate the length of each run:

For the hot water service the calculations are:
A-B + B-F (13 + 4) = 17m

- Multiply the number of fittings (3) x the fitting equivalence (refer Iplex Pipe Sizing Tables) 3 x 2.5 = 7.5m
- Add the run length to the fitting allowance:
  17m + 7.5m = 24.5m
- Look up the table at the next highest length value =25m
- Look for mega joule rating of the appliance (190 MJ/h)
- Calculate pipe size = 25mm
- Apply this pipe size to (B-F) = 25mm

Step 3 – Repeat the above for each run:

For the run B-C, the calculations are:
A-B + B-C = (13 + 10) = 23m

- Multiply the number of fittings (3) x the fitting equivalence (refer Iplex Pipe Sizing Tables) 3 x 2.5 = 7.5m
- Add the run length to the fitting allowance:
  23m + 7.5m = 30.5m
- Look up the table at the next highest length value =35m
- Add the mega joule value of the remaining 2 appliances (cooktop and space heater) = (100 MJ/h),
- Calculate pipe size = 20mm
- Apply this pipe size to (B-C) = 20mm

PIPE SIZING EXAMPLE (cont.)

For the cooktop the calculations are:

A-B + B-C + C-E (13 + 10 + 6) = 29m

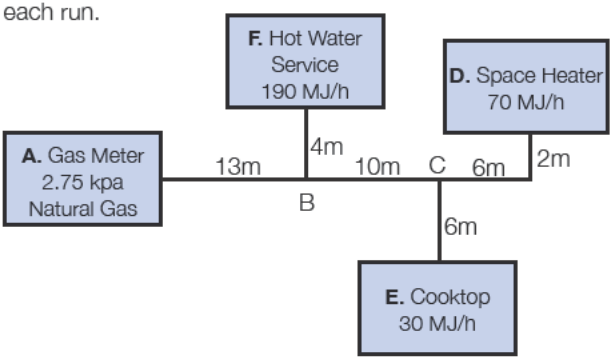
- Multiply the number of fittings (4) x the fitting equivalence (refer Iplex Pipe Sizing Tables) 4 x 2.5 = 10m
- Add the run length to the fitting allowance:
  29m + 10m = 39m
- Look up the table at the next highest length value =40m
- Look for mega joule rating of the appliance (30 MJ/h)
- Calculate pipe size = 16mm
- Apply this pipe size to (C-E) = 16mm

For the space heater the calculations are:

A-B + B-C + C-D (13 + 10 + 8) = 31m

- Multiply the number of fittings (4) x the fitting equivalence (refer Iplex Pipe Sizing Tables) 4 x 2.5 = 10m
- Add the run length to the fitting allowance:
  31m + 10m = 41m
- Look up the table at the next highest length value =45m
- Look for mega joule rating of the appliance (70 MJ/h)
- Calculate pipe size = 20mm
- Apply this pipe size to (C-D) = 20mm

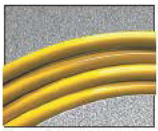
Table below indicates what pipe size should be used for each run.



Pipe Section	Gas Flow MJ/h	Nominal Size (DN)	No. of Fittings used	Length of Run (m)
A-B	290	32 mm	na	31 m
B-C	100	20 mm	3	30.5 m
C-D	70	20 mm	4	41 m
C-E	30	16 mm	4	39 m
B-F	190	25mm	3	24.5

PRODUCT RANGE

40mm/50mm available end of 2007

Product	Item Code	Minimum Order Quantity	Description
	**K1™ COMPOSITE PIPE**		
	FK116E	7	16mm x 5 metre length K1
	FK120E	5	20mm x 5 metre length K1
	FK125E	7	25mm x 5 metre length K1
	FK132E	4	32mm x 5 metre length K1
	FK140E	1	40mm x 5 metre length K1
	FK150E	1	50mm x 5 metre length K1
	FK11650	1	16mm x 50 metre coil K1
	FK12050	1	20mm x 50 metre coil K1
	FK12550	1	25mm x 50 metre coil K1
	FK13225	1	32mm x 25 metre coil K1
	**DUCTING PIPE**		
	FK2.9300020	1	50m coil to suit 16mm Pipe
	FK2.9300022	1	50m coil to suit 20mm Pipe
	FK2.9300024	1	50m coil to suit 25mm Pipe
	**STRAIGHT COUPLER**		
	FK1501616	10	16mm K1
	FK1502020	5	20mm K1
	FK1502525	5	25mm K1
	FK1503232	5	32mm K1
	FK1504040	1	40mm K1
	FK1505050	1	50mm K1
	**REDUCING JOINER**		
	FK1512016	5	20mm-16mm K1
	FK1512516	5	25mm-16mm K1
	FK1512520	5	25mm-20mm K1
	FK1513220	5	32mm-20mm K1
	FK1513225	5	32mm-25mm K1
	FK1514032	1	40mm-32mm K1
	FK1515032	1	50mm-32mm K1
	FK1515040	1	50mm-40mm K1
	**MALE ADAPTOR**		
	FK1521615	10	16mm K1 x 15mm BSP
	FK1522015	5	20mm K1 x 15mm BSP
	FK1522020	5	20mm K1 x 20mm BSP
	FK1522520	5	25mm K1 x 20mm BSP
	FK1522525	5	25mm K1 x 25mm BSP
	FK1523220	5	32mm K1 x 20mm BSP
	FK1523225	5	32mm K1 x 25mm BSP
	FK1523232	5	32mm K1 x 32mm BSP
	FK1524032	1	40mm K1 x 32mm BSP
	FK1525040	1	50mm K1 x 40mm BSP
	**FEMALE BSP THREADED ADAPTOR**		
	FK1531615	10	16mm K1 x 15mm BSP
	FK1531620	10	16mm K1 x 20mm BSP
	FK1532020	5	20mm K1 x 20mm BSP
	FK1532520	5	25mm K1 x 20mm BSP
	FK1533225	1	32mm K1 x 25mm BSP

PRODUCT RANGE

40mm/50mm available end of 2007

Product	Item Code	Minimum Order Quantity	Description

90° BEND

FK1579016	10	16mm bend K1
FK1579020	5	20mm bend K1
FK1579025	5	25mm bend K1
FK1579032	5	32mm bend K1
FK1579040	1	40mm bend K1
FK1579050	1	50mm bend K1

90° BEND WITH MALE BSP THREAD

FK1581615	5	16mm K1 x 15mm BSP
FK1582025	5	20mm K1 x 25mm BSP
FK1582525	5	25mm K1 x 25mm BSP
FK1583225	5	32mm K1 x 25mm BSP

WINGBACK ELBOW (MALE)

FK1601615	5	16mm K1 x 15mm BSP
FK1601615100	1	16mm K1 x 16mm BSP x 100mm
FK1602015180	1	20mm K1 x 15mm BSP x 180mm

WINGBACK ELBOW (FEMALE)

FK1591615L	10	16mm K1 x 15mm BSP Lugged
FK1592015L	5	20mm K1 x 15mm BSP Lugged
FK1592020L	5	20mm K1 x 20mm BSP Lugged
FK1592020*	5	20mm K1 x 20mm BSP

* Elbow (Female), Un-lugged

EQUAL TEES

FK155161616	10	16mm x 16mm x 16mm K1
FK155202020	5	20mm x 20mm x 20mm K1
FK155252525	5	25mm x 25mm x 25mm K1
FK155323232	5	32mm x 32mm x 32mm K1
FK155404040	1	40mm x 40mm x 40mm K1
FK155505050	1	50mm x 50mm x 50mm K1

REDUCING TEES (denotes branch size)

FK156201616	5	20mm x (16mm) x 16mm K1
FK156201620	5	20mm x (16mm) x 20mm K1
FK156202016	5	20mm x (20mm) x 16mm K1
FK156252020	5	25mm x (20mm) x 20mm K1
FK156252025	5	25mm x (20mm) x 25mm K1
FK156252520	5	25mm x (25mm) x 20mm K1
FK156322032	5	32mm x (20mm) x 32mm K1
FK156322525	5	32mm x (25mm) x 25mm K1
FK156322532	5	32mm x (25mm) x 32mm K1
FK156402540	1	40mm x (25mm) x 40mm K1
FK156403232	1	40mm x (32mm) x 32mm K1
FK156404032	1	40mm x (40mm) x 32mm K1
FK156505032	1	50mm x (50mm) x 32mm K1
FK156505040	1	50mm x (50mm) x 40mm K1
FK156504040	1	50mm x (40mm) x 40mm K1
FK156502550	1	50mm x (25mm) x 50mm K1

PRODUCT RANGE

40mm/50mm available end of 2007

Product	Item Code	Minimum Order Quantity	Description

TEST PLUGS

FK1TP16	1	16mm K1
FK1TP20	1	20mm K1
FK1TP25	1	25mm K1
FK1TP32	1	32mm K1
FK1TP40	1	40mm K1
FK1TP50	1	50mm K1

CLIPS with masonry nail per bag

CLIPPEXM16	100	CLIPIT 16mm
CLIPPEXM20	100	CLIPIT 20mm
CLIPPEXM25	100	CLIPIT 25mm

GAS TAIL

FK11610NZ	5	Gas Tail 16 x 10
FK11612NZ	5	Gas Tail 16 x 12
FK11615NZ	5	Gas Tail 16 x 15
FK12020NZ	2	Gas Tail 20 x 20
FK12525NZ	2	Gas Tail 25 x 25
FK13232NZ	2	Gas Tail 32 x 32

K1™ CRIMP RINGS

K1CRING16	50	K1 Copper Crimp Ring 16mm
K1CRING20	50	K1 Copper Crimp Ring 20mm
K1CRING25	50	K1 Copper Crimp Ring 25mm
K1CRING32	50	K1 Copper Crimp Ring 32mm
K1CRING40	10	K1 Copper Crimp Ring 40mm
K1CRING50	10	K1 Copper Crimp Ring 50mm

SYSTEM LABEL

FK1METALSTICKERNZ	10	Meter Box Metal Tag

TOOLS

40mm/50mm available end of 2007

Product	Item Code	Description

ALBA HAND CRIMP TOOL

FKPCR16	K1 / K2 Alba Crimp Tool 16mm
FKCR20	K1 / K2 Alba Crimp Tool 20mm
FKCR25	K1 / K2 Alba Crimp Tool 25mm
FKCR32	K1 Alba Crimp Tool 32mm

BATTERY MINI CRIMP TOOL

7100060	K1 / K2 Battery Mini Crip Tool (in case)
FK17100074	K1 / K2 Mini Crimp Jaws 16mm
FK17100076	K1 / K2 Mini Crimp Jaws 20mm
FK17100078	K1 / K2 Mini Crimp Jaws 25mm
FK17100080	K1 Mini Crimp Jaws 32mm
7100090	Battery (Mini Crimp Tool)
7100092	Recharger Unit (Mini Crimp Tool)

REMS BATTERY TOOL

REMSBATTERYTOOL	REMS Universal Battery Crimping Tool
REMSBATTERY	REMS 12V Battery Spare

REMS TOOL JAWS

REMSCRIMP16	K1 / K2 Crimp Jaws 16mm
REMSCRIMP20	K1 / K2 Crimp Jaws 20mm
REMSCRIMP25	K1 / K2 Crimp Jaws 25mm
REMSCRIMP32	K1 Crimp Jaws 32mm
REMSCRIMP50	K1 Crimp Jaws 50mm

PIPE CUTTER

FK2.03064700	Universal Shears 16-25mm
FK2.03052834	Additional Blades - Universal Shears
FK2.03064719	Additional Blades - Ducting Pipe Cutter

PIPE CUTTER

REMSPIPECUTTER	REMS Universal Pipe Cutting Tool for 16mm, 20mm, 25mm and 32mm

PIPE CUTTER

REMSCUTTER63	REMS Pipe Cutting Tool for 16mm - 63mm

TOOLS (cont.) 40mm/50mm available end of 2007

Product	Item Code	Description

ROUNDING TOOL

FK1RNDTOOL	Pipe Rounding Tool 16mm, 20mm, 25mm and 32mm

CRIMP GAUGE

FKP64	K1 / K2 Crimp Gauge
FK4050	K1 Crimp Gauge 40mm & 50mm

FREQUENTLY ASKED QUESTIONS

Q. Can Iplex composite gas pipe and fittings be used in ground?

A. Yes, as fittings are DR (dezincification resistant) brass.

Q. Can Iplex K1™ composite gas pipe be used to connect directly to the gas meter?

A. Yes, providing any exposed pipe is lagged or sleeved as the pipe is not UV resistant. Iplex has a number of fittings available for such use.

Q. Can Iplex composite gas pipe be chased in masonry walls and floors?

A. Yes, the pipe can be chased into masonry walls with no protection necessary.

Q. Can Iplex composite gas pipe be embedded in concrete?

A. Yes, the pipe can be embedded in concrete but cannot contain any joints. Iplex recommends the pipe should be sleeved for best practice.

Q. What warranty do I receive when I install Iplex K1™ composite gas system?

A. When installed and used correctly for its intended purpose, as specified in NZ 5261 or AS 5601, and the Iplex Pipelines Installation Guide, Iplex Pipelines warrants K1™ against manufacturing defects for a period of 25 years from the date of manufacture (conditions apply).

Q. How close can Iplex K1™ composite pipe be to high heat sources such as heating appliances and flues from heating appliances?

A. Iplex K1™ composite gas pipe should be kept at least 500mm from such heat sources.

Q. What distance should pipe be from slow combustion type stoves?

A. Iplex K1™ composite gas pipe should be kept at least 1500mm from such heat sources.

Q. What distance should Iplex K1™ composite pipe be kept from recessed electric light fittings?

A. Iplex K1™ composite gas pipe should be kept at least 300mm from such light fittings.

Q. How close can Iplex K1™ composite pipe be to gas or central heating vents or flues?

A. No closer than 150mm.

Q. Can Iplex K1™ composite pipe be used for the final connection?

A. No, however, with the use of transition fittings Iplex K1™ composite pipe can be used to connect to copper or steel pipe.

Q. What is the maximum pressure Iplex K1™ composite pipe can be operated at for Natural Gas and LPG?

A. 70kPa.

SUSTAINABILITY

The NZ Building Code 2004 (section 3) provides for the setting of performance standards for buildings to ensure that,

A) People that use building can do so safely and without endangering their health;

B) Buildings have attributes that contribute appropriately to the Health, physical independence, and well being of the people who use them;

C) People who use a building can escape from the building if it is on fire;

D) Buildings are designed, constructed, and able to be used in ways that promote sustainable development.

The following are ways that K1 Gas™ satisfies these core principles of the New Zealand Building Act 2004, which are,

1. HEALTH
2. SAFETY
3. WELFARE
4. SUSTAINABILITY

- **Health, Welfare, Sustainability**
  - No impact on air quality during manufacture
  - No impact on water quality (no waste discharge)
- **Health & Safety**
  - Chemically inert - No emissions from the product in normal use for its service life
- **Sustainability**
  - Very low impact on water usage (fully recycled water cooling systems)
  - Low product weight means substantially less non-renewable energy in transport/delivery
  - 100% recyclable at the end of its service life
  - 100% recyclable or reusable cardboard boxes only used with these products
  - 100% recyclable during manufacture

DISCLAIMER

All information contained in this literature is given in good faith. Whilst all reasonable care has been taken to ensure the information is accurate, this publication should not be used as the only source of information by the reader. Reference should be made to established textbooks and other published material, and readers should not rely on the information contained in this publication without taking appropriate professional advice for their particular circumstances. In case of uncertainty, the reader should contact Iplex Pipelines for clarification that the specific product is appropriate for their circumstances. Iplex Pipelines reserves the right to modify or extend any published information without any prior notification. No responsibility can be accepted by Iplex Pipelines for any error, omissions, or incorrect assumptions.

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