

K1[®] COMPOSITE GAS PIPE SYSTEM

INSTALLATION

Installation of IPLEX K1[®] should be carried out by a qualified, licensed gasfitter. A licensed gasfitter must also have successfully completed the IPLEX K1[®] gas system-training course and have been accredited by Iplex Pipelines.

Installation of the IPLEX K1[®] gas system must be in accordance with Iplex Pipelines' training course and the guidelines. The installer should also ensure the requirements of the Gas Installation Code (AS/NZS 5601.1) are adhered to. The Local Authority codes and by-laws relevant to gas installation may take precedence where they are at variance.

JOINTING INSTRUCTIONS - CRIMPED CONNECTIONS



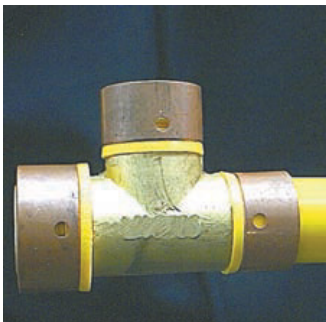
STEP 1

Cut pipe squarely with the IPLEX K1[®] pipe cutter, Iplex Part No. REMSPIPECUTTER, FK203064700 or REMSPIPECUTTER63. Do not use a hack saw.



STEP 2

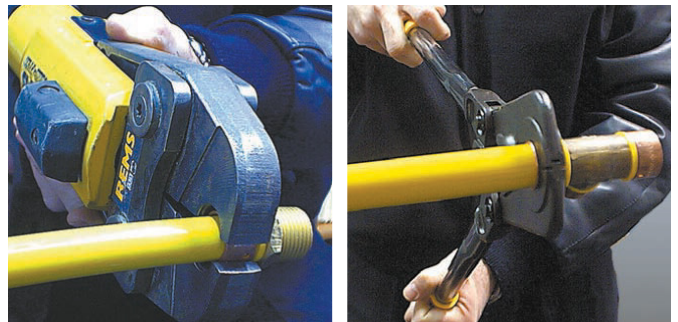
Calibrate pipe with the IPLEX rounding tool. Part No. FK1RNDTOOL.



STEP 3

Slide the pipe onto the fitting until it stops. If fitted correctly, the pipe should be visible through both crimp sleeve windows (arrowed below). The fitting must be assembled with the copper 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 ring is firmly attached to the plastic retainer ring. If the copper ring has moved away from the plastic retainer ring, push it back onto the plastic retainer ring by hand before crimping.

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STEP 4

Open crimp jaws all the way apart. Position crimp jaws squarely over the copper crimp ring, i.e. at 90° to the pipeline. For hand tools ensure that the full jaw width of the tool makes contact with the copper ring when crimping. For power tools crimp the jaws over the full width of the copper ring. Avoid crimping the plastic retainer ring. Close the crimp tool jaws fully over the copper crimp ring. Open the crimp tool jaws and remove the crimp tool from the crimped fitting.

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STEP 5

Use the IPLEX caliper gauge supplied with the tool to check each and every joint. Gauge tips must fit over the crimped copper ring at 90° to the tool jaw split line. Permanently tight connections can only be guaranteed with Iplex approved tools. The tools have to be protected against dirt and damage and cleaned regularly.

JOINTING INSTRUCTIONS - UNDER-CRIMPING

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

1. The crimping tool has not been completely closed.
2. The crimping tool is out of adjustment (readjustment should be made in accordance with the instructions supplied with the tool).

HOW TO AVOID A FAULTY CONNECTION

The IPLEX K1[®] gas pipe jointing system is simple and effective to use when executed in accordance with the jointing procedures. However, if sufficient care is not taken, the consequences can be improper sealing, and a potential for leaks.

The most likely faulty connections occur when:

1. The crimp sleeve has moved away from the body of the fitting.
2. The crimping tool has not been centred over the crimp sleeve, and thus the sleeve has only been partially crimped.
3. The pipe has not been pushed fully home on to the fitting when the crimp has been made.
4. Pipe has not been cut squarely.
5. Tools are poorly maintained or damaged.

IF AN INCORRECT JOINT IS DETECTED

- Cut out the defective joint and replace with new IPLEX K1[®] gas pipe fitting.

IF THE PIPE IS KINKED OR DAMAGED

The faulty section of the pipe should be replaced.

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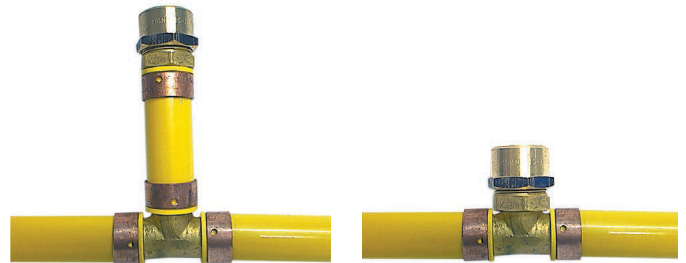
IPLEX K1[®] GAS TO OTHER COMPOSITE PIPE, COPPER PIPE, STEEL PIPE SYSTEMS OR APPLIANCES

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 IPLEX K1[®] pipe, always braze the brazing tail to the copper pipe or metal fittings first and allow it to cool before assembling the IPLEX 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 IPLEX K1[®] gas composite pipe. When brazing copper pipes or fittings near IPLEX K1[®] pipe it is recommended a damp rag be used to protect the pipe from potential damage.

FUTURE EXTENSION

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

1. Tee piece joined to a small length of pipe, then joined to a male iron adapter and sealed with a threaded cap.
2. Male threaded off take tee sealed with a threaded cap.



TESTING AND INSPECTION PROCEDURES.

Testing procedures should be as per the requirements of AS/NZS 5601.1 – the Australian Standard for Gas Installations – and/or any Local Authority requirements. While the system is under test, all joints and fittings should be inspected for leaks and to ensure that the pipe has been fitted correctly and crimped in accordance with IPLEX K1[®] gas installation instructions.

PIPE BENDING

Due to the pipe's inherent flexibility IPLEX K1[®] gas pipe can be bent easily around obstructions or through studs and plates with minimum use of fittings. Care should be taken not to kink or damage the pipe. Never apply bending forces to a crimped fitting. Pipe must always be bent prior to crimping the 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. If for any reason the pipe is kinked or damaged, the faulty section should be replaced. 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. 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.

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TABLE 1.1 MINIMUM HAND-BENDING RADIUS

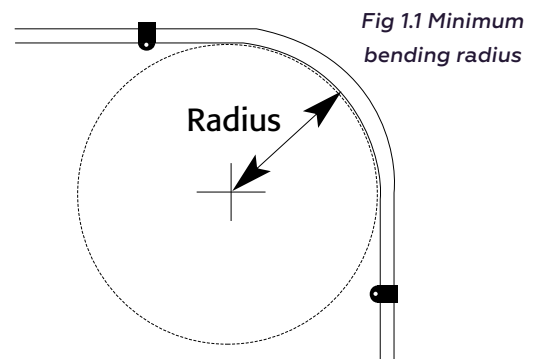
16mm pipe	80mm min. radius
20mm pipe	100mm min. radius
25mm pipe	200mm min. radius

TABLE 1.2 MINIMUM SPRING-BENDING RADIUS

16mm pipe	48mm min. radius
20mm pipe	60mm min. radius
25mm pipe	100mm min. radius
32mm pipe	128mm min. radius

TABLE 1.3 MINIMUM MECHANICAL -BENDING RADIUS

40mm pipe	400mm min. radius
50mm pipe	500mm min. radius



CLIPPING

In accordance with AS/NZS 5601.1, IPLEX K1[®] composite pipe installed above ground shall be retained in position by clips at intervals complying with the table below:

TABLE 1.4 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	2,000mm	2,000mm

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TIMBER AND METAL FRAMEWORK

Holes drilled in studs or plate's etc shall be accurately sized to allow for longitudinal movement, 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/NZS 5601.1 and/or 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 AS/NZS 5601.1 and/or 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, as per AS/NZS 5601.1.

When IPLEX K1[®] pipe is installed above the ground, it must be protected against degradation from exposure to ultraviolet light. IPLEX recommends that the pipe be lagged or sleeved, (refer to Local Authority Codes and By-laws). 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.

CHASES, DUCTS OR CONDUITS

Pipes embedded in walls or floors must comply with the requirement of the appropriate building authority or local regulations.

THERMAL EXPANSION

As the lineal thermal expansion rate of IPLEX K1[®] pipe is approximately 2.5mm for every 10°C temperature change for each 10 metres of pipe, care must be taken with the installation to allow for this potential movement of the pipe. IPLEX K1[®] pipe should not be pulled tight between fixed points as this will prohibit movement if the pipe contracts, and result in excessive tensile forces on joints and fittings.

Note: Manufacturer's label must be displayed near the meter or LPG cylinder. 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.

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