



*heating and plumbing products  
that won't cost the **earth***

## **Annular Solar Pipe systems - pipe packs**

July 2010



# Annular solar pipe systems - pipe packs

## Introduction

The extremely high temperatures, difficult sets and bends required and installation time dictate that the use of copper tube with traditional soft solder joints is not an appropriate approach to solar heating systems.

The generally accepted method is to use a flexible, high temperature stainless steel pipe system. This can be used to enter the internal roof space to provide an easier connection to the copper flow and returns, or carry the fluid medium direct to the pump station (by far the easiest and most efficient method).

The most common used of these is the annular design, which has a series of parallel corrugations giving it its flexibility. A tool to simply create the flange face by crushing a series of the corrugations is available.

The other benefit is that a range of fittings can be used if necessary to make connections between the pipes, and eliminate the requirement for welded joints.

A one piece pipe run between the collector and the pump station removes the risk of leaks, either at the time of installation or later, when pipework has settled or undergone system expansion and contraction.

The pipe can be supplied in coils, or in pre-insulated twin pipe packs to set lengths. Being pre-insulated also offers other benefits, which can only be appreciated by those who have spent frustrating hours pushing metres of pipe through long lengths of the specially designed lagging normally specified for Solar installations (i.e. UV resistant, bird/rodent proof and weatherproof).

The annular pipe is made from annealed stainless steel grade 316 and 304, which reduces the amount of springiness in the pipe, making accurate and neat pipework installations easy.

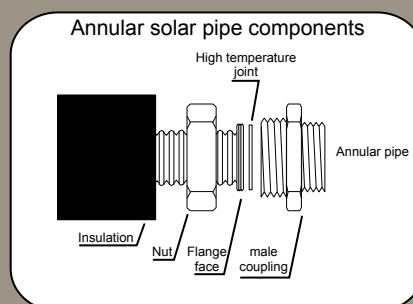
If you need additional help with pipe sizing, please visit our website at [www.intaeco.co.uk](http://www.intaeco.co.uk) where you can view or download our pipe sizing technical document.



Inta Inox pipe with k-flex insulation



coiled and capped - ready for use



# Annular solar pipe systems - pipe packs

The Inta Inox range of stainless steel pipe packs are designed specifically for solar systems and the insulation keeps thermal leakage to an absolute minimum, while also assuring resistance to both chemical and atmospheric agents.

Annular pipe uses a corrugated design and its flexibility and pre-insulated finish saves time and money on installations.

Each pack comes complete with 4 fittings to make on to each pipe end to form a BSP female nut connection. The twin pre-insulated pipe also has an integral temperature sensor cable in four core heavy duty format.

## **New for 2010**

Even in a fast changing world, improvements to products such as these emerge slowly as the manufacturing technology changes.

For 2010, we are replacing the old PVC insulation covering with the harder wearing polyethylene. It's still UV resistant and provides even more durability.

We have also improved the specification of the insulation itself. Now made using EPDM, it replaces the old NBR specification and as a bonus now allows working temperatures of 175°C and peaks of 190°C, providing a considerably higher specification than any competitive product.

## **Key features:**

- Saves installation time
- K Flex EPDM solar installation
- Stainless steel AISI316L
- UV resistant coverings to ISO 4892/2 method A
- High mechanical resistant protective film
- 4 core heavy duty temperature sensor cable
- Annular and Helical systems
- Annular pipe complete with 4 x 3/4" connection fittings
- Fire behaviour DIN 4102-B2
- No CFC, HCFC or formaldehyde
- Insulation with easy release adhesive
- Specifically designed for solar thermal applications



**Supplied boxed for protection and security**

## Annular Piping Systems (Pressure drop and Flow Rates)

### DN16

pressure drop (bar/m)	flow rate (ltrs/m)
1.44	2.13
2.28	2.67
3.30	3.07
4.52	3.40
5.96	3.78
7.57	4.15
9.39	4.62
11.29	5.30
13.49	5.59
15.81	6.04
18.18	6.48
20.89	6.88
23.64	7.26
26.60	7.60
30.02	7.91
33.23	8.33
36.79	8.65

### DN20

pressure drop (bar/m)	flow rate (ltrs/m)
1.40	2.68
2.24	3.25
3.26	3.62
4.48	4.36
5.75	4.97
7.48	5.29
9.30	5.80
11.25	6.16
13.36	6.75
15.73	7.29
18.27	7.69
20.89	8.12
23.76	8.65
26.77	9.08
29.89	9.45
33.28	10.07
36.74	10.69

### DN25

pressure drop (bar/m)	flow rate (ltrs/m)
1.30	5.66
2.13	7.07
3.11	8.49
4.26	9.39
5.56	10.73
7.14	11.87
8.90	12.91
10.75	14.20
12.79	15.09
15.02	15.86
17.38	16.37
19.88	17.35
22.57	19.91
25.49	20.71
28.50	21.91
31.89	22.58
35.18	23.79

### DN32

pressure drop (bar/m)	flow rate (ltrs/m)
1.06	9.37
1.80	11.85
2.53	13.92
3.59	15.95
4.74	17.98
6.05	20.98
7.60	23.01
9.23	24.67
10.95	26.95
12.87	30.10
14.99	32.17
17.24	34.59
19.61	36.68
22.14	38.77
24.84	40.73
28.43	43.14
31.78	45.24