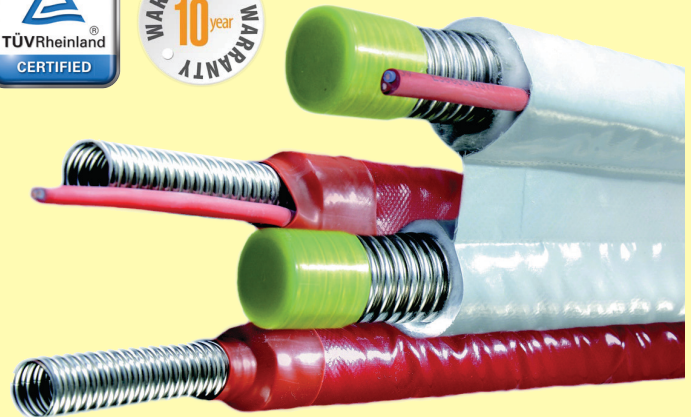


Aerothin

AeroThin nanotechnologic flexible solar tube

- Stainless steel corrugated pipes (1.4404/AISI 316L)
- AISI 316L pipe certified for domestic water use
- Pipes tested in accordance with BS EN ISO 10380
- Aerogels insulation of only 5,5 or 11mm
- Very Low thermal conductivity: 0,017 W/mK @ 10 °C
- Mechanical fast mounting fittings
- Reduced size up to 1/3 compared to EPDM tubing
- External PVC coating UV resistant
- Electric connection cable covered by high temp resistant silicon
- Available diameters: DN12, DN16, DN20, DN25, DN32, DN40
- Operating range Temperatures: -200°C/+200°C
- Easy to install



AeroThin is a complete system of pre-insulated twin tubes for solar installations. The base is a corrugated steel bi-pipe made of stainless steel, manufactured in accordance with the European standard 1.4404 certified for domestic water use. A specific distinguishing feature of AeroThin pipes is their aerogel insulation characterized by an extremely low heat transfer coefficient (0,017 W/(m·K) at an average temperature of 10°C according to PN-EN 12667: 2002). Aerogel is a synthetically produced, amorphous silica gel. The highly porous structure gives to aerogel exceptional insulation properties, since heat conduction through the fine material webs and the high air content (95-98%) is dramatically reduced. AeroThin pipes are covered by an outer PVC sheath including a silicon cable for the link of a temperature sensor of the solar panel. AeroThin pipes are available in grey and dark red color and with diameters of DN12, DN16, DN20, DN25, DN32 and DN40. The thickness of insulation is 5,5 mm or 11 mm.

Characteristics

FAST AND EASY INSTALLATION



AeroThin pipes are 3 times thinner than conventional EPDM ones.

Installation can be done with up to 50% time saving, specially in tight, hard to install areas (bays, channels, in-wall, under the roof).

The connecting membrane between the two tubes can be cut or shortened with a simple cutter to separate them. So, the connection to collectors, pump station and cylinder can be easily done.

The middle section of the sheath can be used for direct mounting of the tube with screws or nails: no brackets or clamps are needed.



MAXIMUM RESISTANCE TO ATMOSPHERIC AGENTS

In AeroThin pipes the insulation is exclusively made with Aerogel. The essential difference to EPDM insulation is that aerogel's thermal insulation properties do not degrade over time. Its durable resistance is the major feature of our product.

The compact, flexible, heat and pressure-resistant PVC cover has a thickness of 0,5 mm and protects against the impact of extreme atmospheric conditions, UV rays and, respect to conventional EPDM tubes, also provides reliable protection against pecking and biting.

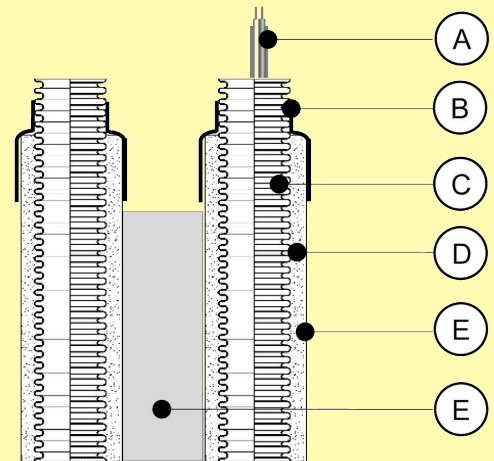


PRESSURE LOSS TABLE

DN12		DN16		DN20		DN25		DN32	
Pressure Drop [mbar/m]	Flow rate [LPM]	Pressure Drop [mbar/m]	Flow rate [LPM]	Pressure Drop [mbar/m]	Flow rate [LPM]	Pressure Drop [mbar/m]	Flow rate [LPM]	Pressure Drop [mbar/m]	Flow rate [LPM]
2	0,8	1	1,69	2	5,38	1	8,27	1	16,67
4	1,3	2	2,40	3	7,21	2	12,28	2	24,40
5	1,63	3	3,03	4	8,18	3	14,59	2,5	26,30
7	2,01	4	3,26	5	9,12	4	16,28	3	27,36
13	2,86	5	3,52	6	9,63	5	17,68	4	31,69
19	3,39	7	4,17	8	11,30	7	21,70	6	42,81
24	3,72	9	4,77	10	13,01	8	21,80	7	45,38
33	4,33	11	5,14	12	14,15	10	25,08	8	46,20
		13	5,53	14	15,00	12	27,49	10	51,74
		15	5,82	16	15,84	14	29,31	12	57,49
		17	6,16	19	17,32	16	31,07	14	62,36
		20	6,86	21	18,09	19	34,95	16	65,91
		23	7,33	24	19,31	22	37,67	18	68,89
		26	7,64	27	20,60	25	39,64	21	74,04
		29	7,94	30	21,71	28	42,18	23	78,15
		32	8,51	33	23,42	31	43,73	26	84,50
		35	8,92	36	24,40	34	45,28	29	86,84

Technical Data

Models	Diameter pipe stainless steel AISI316L	Color	insulation [mm]	Spool lenght [m]
AL12/6-250R	DN12	Dark red	5,5	250
AL12/6-250G	DN12	Grey	5,5	250
AL16/6-200R	DN16	Dark red	5,5	200
AL16/6-200G	DN16	Grey	5,5	200
AL20/6-150R	DN20	Dark red	5,5	150
AL20/6-150G	DN20	Grey	5,5	150
AL25/6-100R	DN25	Dark red	5,5	100
AL25/6-100G	DN25	Grey	5,5	100
AL32/6-60R	DN32	Dark red	5,5	60
AL32/6-60G	DN32	Grey	5,5	60
AL40/6-50R	DN40	Dark red	5,5	50
AL40/6-50G	DN40	Grey	5,5	50
AL12/11-150G	DN12	Grey	11	150
AL16/11-150G	DN16	Grey	11	150
AL20/11-100G	DN20	Grey	11	100
AL25/11-60G	DN25	Grey	11	60
AL32/11-50G	DN32	Grey	11	50
AL40/11-50G	DN40	Grey	11	50



A	Cable for temperature sensor
B	Heat shrink sleeve
C	Stainless steel tube
D	Aerogel insulation
E	PVC cover

AEROGEL INSULATION

thermal conductivity coefficient (TCC) (according to EN 12667, $t_{av} = 10^{\circ}\text{C}$)	0,017 W/mK
maximum application temperature	675°C
permissible collector stagnation temperature according to EN 12975-2	675°C
Hydrophobic material resistant to water and moisture	
Fire classification (EN 13501): A2-s1, d0	








PVC COVER

thickness	0,5 mm
tensile strength	1800 N/5 cm
weight	650 g/m ²
fire classification (EN 13501)	B1-s2, d0
UV resistance	very high



Also available in pre-assembled rolls (insulation 5,5mm)
with following diameters and lengths:
DN16-DN20-DN25 10m-15m-20m-25m

Mechanical fast mounting Fittings

						
A - Male	B - Female	C - Coupling	D - Cylindrical straight fitting	E - double straight fitting on copper	F - TEE fitting	G - Bushing
DN12 x 1/2"	DN12 x 1/2"	DN12 x DN12	DN12 x 12 mm	DN12 x 12 mm	DN16 x 3/4"	DN12
DN12 x 3/4"	DN12 x 3/4"	DN16 x DN16	DN12 x 15 mm	DN12 x 15 mm	DN20 x 1"	DN16
DN16 x 1/2"	DN16 x 1/2"	DN20 x DN20	DN12 x 18 mm	DN12 x 22 mm*	DN25 x 1"	DN20
DN16 x 3/4"	DN16 x 3/4"	DN25 x DN25	DN16 x 22 mm	DN16 x 15 mm		DN25
DN16 x 1"	DN16 x 1"	DN32 x DN32	DN20 x 22 mm	DN16 x 22 mm*		DN32
DN20 x 3/4"	DN20 x 3/4"	DN40 x DN40	DN25 x 22 mm	DN20 x 22 mm*		DN40
DN20 x 1"	DN20 x 1"			DN25 x 22 mm*		
DN25 x 1"	DN25 x 1"			DN32 x 28mm		
DN25 x 1-1/4"	DN25 x 1-1/4"			DN40 x 35 mm		
DN32 x 1-1/4"	DN32 x 1-1/4"					
DN32 x 1-1/2"	DN32 x 1-1/2"					
DN40 x 1-1/2"	DN40 x 1-1/2"					
DN40 x 2"	DN40 x 2"					

* Reduction to copper 18mm optional. (VR-18K)