

SMISOL® Clim Platinum

The climate specialist

APPLICATIONS

- Air conditioning.
- Refrigerant gas transportation (R32, R410A, R407,...).

In compliance with applicable regulations.



This copper tube is manufactured according to EN 12735-1 and is pre-insulated in closed cell expanded polyethylene, where the cells are of regular size and evenly distributed (compliant to EN 14114). It is distributed in coils. The copper tube diameter is expressed in inches, as required by standard EN 12735-1. The insulation sheath is manufactured in full compliance with European Regulation EEC/EU 2037/2000 that enforces the use of insulating expanded foam sheaths devoid of CFCs and HCFCs, which are harmful to health and the environment. The sheath thickness is designed to satisfy the various requirements of this application area. Given the particular application field, special attention is reserved for the external protective polyethylene film co-extruded directly on the foam insulator, thus creating a sheath with special anti-aging characteristics and high resistance to moisture infiltration in a single cover.

SHEATH CHARACTERISTICS

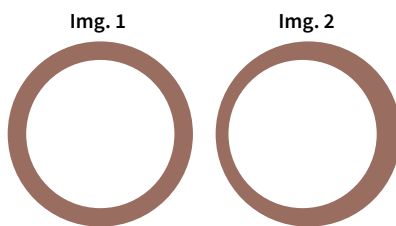
- Thermal conductivity: $\lambda \leq 0,038$ W/mK at 40°C.
- Average value of the water vapour diffusion resistance factor " μ " > 15.000.
- Average sheath density: 33 kg/m³.
- Free from ammoniacal residues.
- Excellent resistance to external chemical agents.
- Reaction to fire classification: BLs1d0 (EN 13501-1).
- Devoid of CFCs and HCFCs (Reg. EEC/EU 2037/2000).
- Colouring of the outer reflective "Silver grey" film.
- Superior UV resistance.
- Halogen-free flame retardant.

SMISOL®Clim Platinum is also characterised by **extremely low eccentricity values**, a very important feature for flaring operations.

It conforms to the technical characteristics required by the European standard regarding air conditioning and carrying of the new cooling fluids (R32, R410A, R407, ...).

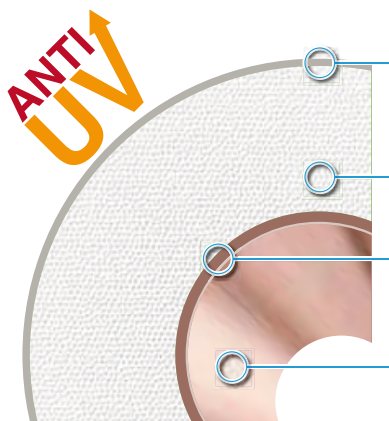
INTERNAL SURFACE

The inner surface of the copper tube is bright, clean and dry, essential characteristics of products such this normally available on the market for industrial use. This particularity allows for the achievement of an integrated system with the terminal elements of the plant. The particular internal cleanliness of SMISOL®Clim Platinum is safeguarded by the closure of each coil ends by means of stoppers directly in the production phase.



ECCENTRICITY

Eccentricity defines the distance between the centre of the outer circumference and that of the inner one. It is a fundamental parameter for the operation of ends endforming and flaring. Zero eccentricity occurs when the two centres coincide perfectly (Img. 1), while in the presence of eccentricity, the greater its value, the more variation is evident in the wall thickness (Img. 2).



High-" μ " protective polyethylene film

Polyethylene foam insulating sheath (reg. EEC/EU 2037/2000)

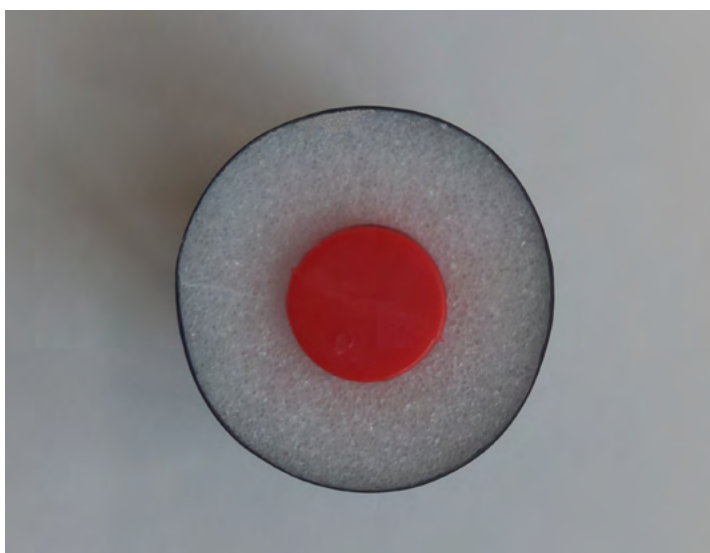
Copper tube diameter manufactured under continuous laser gauge control

Internal surface cleanliness according to EN 12735-1

TABLE OF STANDARD PRODUCT DIMENSIONS - COILS

dimensions Ed x Th		coil length min. guaranteed	min. sheath thickness	burst pressure	operating pressure ASTM	water content
(mm)	(inches)	(m)	(mm)	(MPa)	(MPa)	(L/m)
6.35 x 0,8	1/4"	50	6	56,54	14,14	0,018
6.35 x 1	1/4"	50	6	70,68	17,67	0,015
9.52 x 0,8	3/8"	50	8	37,71	9,43	0,049
9.52 x 1	3/8"	50	8	47,14	11,79	0,044
12.70 x 0,8	1/2"	50	10	28,27	7,07	0,097
12.70 x 1	1/2"	50	10	35,34	8,83	0,090
15.87 x 1	5/8"	25	10	28,28	7,07	0,151
19.05 x 1	3/4"	25	10	23,56	5,89	0,228
22.22 x 1	7/8"	25	10	20,20	5,05	0,321

Ed = External diameter Th = wall thickness



INSULATOR TUBULAR SECTION

The expanded insulator of the tubular section guarantees better adhesion to the tube and better performance in terms of thermal insulation and moisture formation.



EXTERNAL PROTECTION

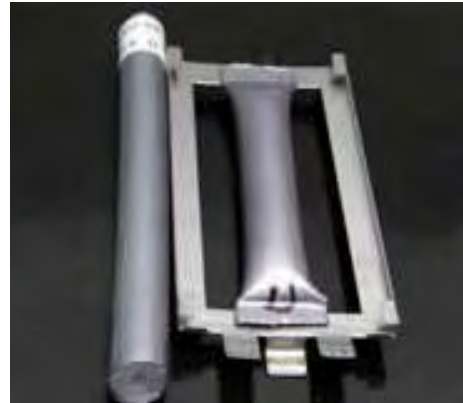
Polyethylene closed cell expanded foam with average **water vapour diffusion resistance factor “μ” greater than 15.000**. The insulating sheath is manufactured under full compliance to European Regulation EEC/EU 2037/2000 which enforces the use of expanded foam insulation sheaths devoid of CFCs and HCFCs which are harmful to health and the environment.

Reaction to fire classification: BLS1d0 (EN 13501-1).

The outer polyethylene film has a darker pigment than the traditional white to counter the PE crystallisation process. In addition, normal anti-UV additives tend to degrade the flame retardant treatment necessary for the product. In order to avoid this drawback, the SMISOL®Clim Platinum sheath contains an environmentally friendly halogen-free flame retardant that does not counteract the anti-UV action. Tests conducted according to ASTM G-155 (accelerated ageing) confirm that SMISOL®Clim Platinum is **suited for areas with high annual solar radiation**. At the end of the exposure test, the sample did not show any sign of degradation (see photo).

ACCELERATED AGEING TEST

The test is scheduled to last 4.000 hours with exposure to a Cl65 Xenon lamp in a weatherometer, in Kly, equivalent to approximately 3 years of continuous exposure in Northern Italy or 2 years in Southern Italy.



Zero hour sample (prior to exposure) and a sample subjected to an accelerated ageing test after 4.000 hours of exposure.



REACTION TO FIRE

European classification EN 130501-1

Main classification

A1	+++++	non-combustible materials (glass and glass fibre, metals, porcelain, etc.)
A2	++++	
B	+++	non flammable combustible materials
C	++	combustible materials not easily flammable
D	+	
E	-	
F	-	easily flammable materials

Ancillary classification

s	1	++ (the best)	s = smoke: smoke production during combustion
	2	+	
	3	- (the worst)	
d	0	++ (the best)	d = dripping: dripping during combustion
	1	+	
	2	- (the worst)	

NATURAL AGEING TEST

(samples exposed to the external environment)

Other tubes



1st year



2nd year



3rd year



4th year



5th year



6th year

Smisol Clim Platinum



ANTI
UV

