

## GELCOPPER<sub>US</sub> MINI SPLIT SYSTEM LINE SETS

DOUBLE INSULATED COPPER PIPES  
CONDITIONING

100%  
GREEN  
recyclable  
product

- don't kink
- easy bending
- don't scratch
- long length means less scraps
- 100% made in Italy
- large always available in U.S. inventory
- save energy
- save environment
- save money

### Purpose

Mini split ductless line sets consist of two copper pre-insulated pipes to connect the outdoor air conditioner or heat pump to the indoor air handler. The smaller pipe is called the liquid line, the larger pipe is referred to as the suction line.

### TECHNICAL SPECIFICATIONS

#### POLYETHYLENE FOAM INSULATION

The polyethylene foam assures thermal insulation from surroundings. Product is made likewise ASTM C1427-07, type I (tubular), grade I (insulation material for use on typical commercial system non-crosslinked).

#### FURTHER SPECIFICATIONS

**LOW DENSITY POLYETHYLENE FOAM:** closed cell foam; CFC and HCF gas free.

**SURFACE BURNING CHARACTERISTICS:** currently under UL (Underwriters Laboratories) 94 test method (contract nr. 10MIL0317160230, on March, the 17th, 2010) and ASTM E84.

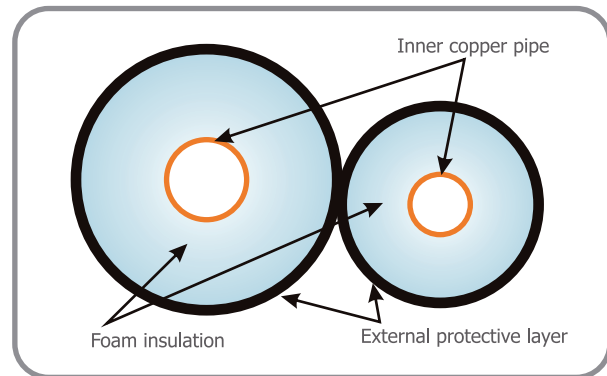
• This test method does not always define the hazard potentially presented by preformed flexible PE expanded cellular thermal insulation under actual fire conditions. It is retained for reference in this standard as test data are required by some codes.

• Preformed flexible cellular PE expanded thermal insulation is an organic material and is combustible. Do not exposed it to flames or other ignition sources. In some applications, the fire test response characteristics of the material are addressed through requirements established by the appropriate governing documents.

**THERMAL CONDUCTIVITY** ("k value" or "lambda") at 104 °F (40 °C) -mean temperature-,  $\lambda = 0.26$  (Btu in.)/(sq.ft. °F h) (0.038 W/(m K), according ISO EN 8497 (1999) and likewise to ASTM C 335-95. Thermal resistivity: ("r value") at 104 °F (40 °C) -mean temperature-,  $r = 3.8$  (Btu in.)/(sq.ft. °F h) (26.3 (m K)/W).

**THERMAL RESISTANCE** ("R value"). "R value" is in not consistent for cylindrical symmetry geometry solid, but only for slab geometry. Anyway it could be computed for pipe insulation for calculations about heat dispersion. It does not give the insulation rate, physical property, for the insulation material itself.  
 $R = OD/2 \ln(OD/ID)/k$ ; OD, Outer Diameter; ID, Inner Diameter.

**THERMAL CONDUCTANCE** ("C value") "C value" is in not consistent for cylindrical symmetry geometry solid, but only for slab geometry. Anyway it could be computed for pipe insulation for calculations



about heat dispersion. It does not give the insulation rate, physical property, for the insulation material itself.

**C=1/R**

**WATER VAPOR PERMEABILITY** is 1.15 10<sup>-4</sup> mg/(m h Pa) = 3.19 10<sup>-11</sup> g/(Pa s m), according to EN UNI 13469 (2001), likewise to ASTM E 96-00.

**WALL THICKNESS** 1/2 in. (12.7 mm).

**USE TEMPERATURE**, according to ASTM C1427-07, type I (tubular), grade 1 (material for use on typical commercial system non-crosslinked), -150 °F to 200 °F (-101 °C to 93 °C).

**OUTER SURFACE:** covered by additional polyethylene skin, white, to repair foam insulation from scratches; helpful for threading.

**MARKING:** PDMUS GELCOPPERUS (copper pipe diameter) in. ## (progressive No.) ft.

**COIL LENGTH:** 50 ft.

#### COPPER PIPE

Copper pipe assures the highest benefits in term of hygiene and mechanical performances. Plastic caps maintain dry and clean the inner pipe surface. It is according to ASTM B 280 - 08 or EN 12735-1.

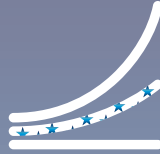
#### FURTHER SPECIFICATIONS.

**COPPER UNS** No. C 12200, DHP (phosphorous deoxidized, high residual phosphorous), 99,9%.

**OD TUBE SIZES:** 1/4 in., 3/8 in., 1/2 in., 5/8 in., 3/4 in., 7/8 in.



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## PRODUCT TABLE

LIQUID LINE SUCTION LINE	1/4 x 3/8	1/4 x 1/2	1/4 x 5/8	1/4 x 3/4	1/4 x 7/8	3/8 x 1/2	3/8 x 5/8	3/8 x 3/4	3/8 x 7/8	1/2 x 5/8	1/2 x 3/4	1/2 x 7/8	5/8 x 3/4	5/8 x 7/8
INSULATION	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
CARTON BOXES PER PALLET (SKD)	12	12	9	9	9	12	9	9	9	9	9	9	9	9
LENGTH OF LINESET	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT	50 FT

	k		r	
	[ W / (m K) ]	[ (Btu in.) / (h °F sq.ft.) ]	[ (m K) / W ]	[ (h °F sq.ft.) / (Btu in.) ]
	0,038	0,26	26	3,8
	R		C	
	[ (sq.m K) / W ]	[ (h °F sq.ft.) / Btu ]	[ W / (sq.m K) ]	[ Btu / (h °F sq.ft.) ]
NPD				
1/4 in.	672	3.9	0.0015	0.26
3/8 in.	597	3.4	0.0017	0.29
1/2 in.	551	3.2	0.0018	0.32
5/8 in.	519	3.0	0.0019	0.33
3/4 in.	495	2.9	0.0020	0.35
7/8 in.	477	2.7	0.0021	0.36

**LEGEND** | ID inner diameter | OD outer diameter | ND nominal diameter | WT nominal insulation wall thickness | NPD nominal pipe diameter

