



PE-INSULATED COPPER TUBE



Our PE-insulated copper tube is produced in our Hartselle, Alabama, factory and features fire retardant insulation and an abrasion and chemical resistant external layer.

ICOOL Insulation System

Fire Retardant Insulation layer: Self-Extinguishing and no residue after combustion, consistent with **UL** and French **"M"** standards

Extraordinary **Heating-Shielding** performance: Compact structure of tiny bubbles thwarts heat transfer

Embossed polyethylene film for **abrasion resistance**

External layer is **non-toxic, chemical resistant, and UV resistant**

Working temperature is **-40° F to 248° F**

Plain end or flared end

ICOOL PE Insulation Specifications

ITEM	ICOOL INSULATION	TEST METHOD
Cell Structure	Closed Cell	N/A
Density	0.028 ~ 0.032 G/CM3 (1.75-2 lbs/ft3)	ASTM D1667
Temperature Range	-40°C - 110°C (-104°F to 230°F)	N/A
Water Vapor Permeability	Less than 0.1 MG/CM2	ASTM C355
Water Absorption Volume	0.042 MG/CM2 or Less	ASTM C209
Thermal Conductivity	0.037 Kcal/M2H°C or Less	ASTM C518
Flammability	ASTM E84 25/50	ASTM E84 25/50
UV Weather Resistance	Excellent	ASTM G154
Ozone Resistance	No Cracking	ASTM D1171
Smoke Density	Self Extinguishing	ASTM D635
Flexibility	Excellent	N/A
Copper Tube	Commercial Grade Refridgeration Tubing(ASTM B280 & ASTM B743 & ASTM B88)	
"R" Values	3/8" - R2.3 1/2" - R3.3 3/4" - R5.2	

RUBBER-INSULATED COPPER TUBE



Our rubber-insulated copper tube is produced in the USA using closed-cell technology to conserve energy and prevent condensation.

ICOOL USA is able to produce custom lengths up to 164 feet.

DESCRIPTION

Our rubber insulation is an NBR/PVC-based **closed cell**, flexible elastomeric foam insulation. It is **environmentally-friendly** as it is free of CFCs, HFCs, HCFCs, PBDEs, formaldehyde and fibers. An EPA registered antimicrobial agent is incorporated into the product providing additional protection against mold, fungal and bacterial growth. It is UL GREENGUARD Gold Certified for low VOC emissions. The product's key physical properties are approved by Factory Mutual.

BURIED APPLICATIONS

Our rubber is acceptable for use in buried applications using the same installation principles as above ground applications. For lines above the water table, use a clean fill such as sand (**3"-5" layer**) to protect the insulation before backfilling. For optimum performance, the lines should be encased in a conduit to protect them from problems associated with ground water intrusion and compaction. If a conduit is not used, the insulation thickness should be increased by one thickness size to compensate for compaction.

APPLICATION

Our rubber is recommended for applications with service temperatures ranging from -297°F (-182°C) to $+220^{\circ}\text{F}$ ($+104^{\circ}\text{C}$). The product is used to **retard heat gain and prevent condensation** or frost formation on line sets or extended length copper piping for chilled water or refrigeration systems. It can be used with heat tracing tapes. It also retards heat loss from medium hot systems, including hot water plumbing, liquid heating, dual temperature, and solar thermal piping, among others.

INSTALLATIONS

Our rubber is flexible (**even at low temperatures**), durable, safe to handle, and lightweight for an efficient installation. We recommends that insulation is installed on **non-operational** systems with clean, dry surfaces in ambient conditions between 40°F and 100°F . All seams, butt joints, termination points and open ends should be **sealed** with an approved contact adhesive, making sure both surfaces to be joined are coated. Longitudinal seams should face downward and vapor stops should be installed as needed.



RUBBER-INSULATED COPPER TUBE

ICOOL Rubber Insulation Specifications

ITEM	ICOOL INSULATION	TEST METHOD
Cell Structure	Closed Cell	N/A
Density	3/6 lb/ft ³	ASTM D1667
Temperature Range	-183°C - 104°C (-297°F to 220°F)	ASTM C534
Water Vapor Permeability	Less than 0.1 perm-in	ASTM E96
Water Absorption Volume	0	ASTM C209
Thermal Conductivity (K)	0.258 (0.0372)	ASTM C177
Btu-in/hr-Ft ² -°F (W/mK)	0.245 (0.0353)	
90°F (32°C) Mean Temp	0.235 (0.0339)	
75°F (24°C) Mean Temp 32°F (0°C) Mean Temp		
Flammability	ASTM E84 25/50	ASTM E84 25/50
UV Weather Resistance	Excellent	QUV Chamber Test
Ozone Resistance	Pass	ASTM D1171
Smoke Density	Self Extinguishing	ASTM D635
Flexibility	Excellent Pass: Cold Crack Test at -40°F (-40°C)	ASTM C534 ASTM D1056
Copper Tube	Commercial Grade Refrigeration Tubing (ASTM B743 & ASTM B88)	

“R” VALUES PER SQUARE FOOT

Nominal Insu-I.D.	3/8" WALL	1/2" WALL	3/4" WALL	1" WALL
3/8"	2.7	3.6	5.6	8.5
1/2"	2.5	3.4	5.4	7.9
5/8"	2.5	3.3	5.4	7.5
3/4"	2.3	3.1	5.4	7.5
7/8"	2.3	3.2	5.4	7.2
1-1/8"	2.2	3.1	5.5	7.1