



# THERMACORE LINE SETS - SPECIFICATIONS

## PE INSULATION TUBE SERIES

The PE insulation tube series offers superior thermal performance, exceeding industry standards. Produced through electronically cross-linked polyethylene closed-cell foam molding, these tubes feature no interfaces, cracks, or voids — ensuring exceptional airtightness and consistent insulation. Formulated with a modified flame retardant, this product provides high flame resistance, meeting UL-94HF-1 standard.

### Structure and Features:

- **Inner Layer:** Water cross-linked PE foam, expanded 30 times with a closed-cell structure for outstanding airtightness and thermal insulation.
- **Middle Layer:** IXPE foam with dense cells — heat and cold-resistant, wear-resistant, eco-friendly, and fire retardant.
- **Surface Layer:** UV- and aging-resistant protective film, tested in accordance with ASTM G154 to ensure excellent resistance to deterioration, cracking, and water penetration. Environmentally friendly and flame retardant.



### Copper Tube Specifications:

- **Material:** 99.9% pure copper (C12200 / EN CW024A)
- **Purity:** Oxygen-free, high-conductivity grade
- **Thermal Conductivity:**  $\geq 225 \text{ BTU}\cdot\text{in}/\text{hr}\cdot\text{ft}^2\cdot^\circ\text{F}$
- **Tensile Strength:** 30,000–36,000 psi (annealed condition)
- **Elongation:**  $\geq 40\%$
- **Working Pressure:** Suitable for R410A, R32, and other common refrigerants
- **Surface Finish:** Degreased, dehydrated, and sealed to prevent oxidation
- **Compliance:** ASTM B280 / EN 12735-1
- **Jointing Compatibility:** Suitable for brazing, flare, and compression fitting

This high-purity copper tubing provides efficient heat transfer, long service life, and reliable performance in demanding HVAC and refrigeration systems.

### PE Insulation Specifications:

- **Material:** Electronically cross-linked, closed-cell polyethylene foam (IXPE)
- **Thermal Conductivity:**  $\leq 0.24 \text{ BTU}\cdot\text{in}/\text{hr}\cdot\text{ft}^2\cdot^\circ\text{F}$  at 75°F mean temperature
- **Temperature Range:**  $-76^\circ\text{F}$  to  $+248^\circ\text{F}$  ( $-60^\circ\text{C}$  to  $+120^\circ\text{C}$ )
- **Density:** 2.5–3.1 lb/ft<sup>3</sup> (40–50 kg/m<sup>3</sup>)
- **Water Absorption:**  $\leq 0.1\%$  by volume after 24-hour immersion
- **Flame Retardancy:** Meets UL-94 HF-1, DIN 4102-B1, and EN 13501-1 BL-s1-d0
- **UV Resistance:** Tested in accordance with ASTM G154; no visible deterioration after 500-hour xenon arc exposure
- **Ozone & Aging Resistance:** Excellent — no cracking or powdering after accelerated aging test
- **Vapor Permeability:**  $\leq 0.05$  perm-inch
- **Environmental Properties:** CFC-free, HCFC-free, low VOC, and RoHS compliant
- **Color:** Black (standard), White (optional)
- **Standard Thicknesses:** 3/8" to 1" wall (custom sizes available)

This advanced insulation delivers exceptional thermal efficiency, fire safety, and long-term UV protection, making it ideal for both indoor and outdoor HVAC piping installations.