

AEROFLEX EPDM™ Insulated Copper Coils

OVERVIEW

PRODUCT

Reftekk has partnered with AEROFLEX to provide an insulated copper coil product specifically for VRV/VRF systems:

- 1-1/2" thickness to comply with energy codes (IECC, T24, ASHRAE 90.1, etc.) for lines containing fluids with normal-operating temperatures between 141-200°F
- Continuous 257°F temperature rating to comply with VRV/VRF manufacturers' installation instructions



FEATURES

Continuous 257°F Temperature Rating: Hot gas lines in VRV/VRF systems can operate at temperatures up to 248°F. When EPDM can continuously handle this temperature, why risk insulation degradation/failure with products that can only handle these temperatures intermittently?

1-1/2" Thickness Complies with Energy Codes for VRV/VRF Hot-Gas Lines: Most of the current and applicable energy codes (such as IECC, T24, ASHRAE 90.1, etc.) specify insulation thicknesses based on both the line size and the fluid's normal-operating temperature. With the hot-gas lines of most VRV/VRF systems normally operating between 141-200°F, the applicable energy codes generally require 1-1/2" thickness (for tubing up to 1-3/8" O.D.).

Closed-Cell Elastomeric Insulation - The Only Choice for Below-Ambient Fluid Temperatures: In the event the outer skin gets damaged, the EPDM's closed-cell elastomeric structure will act as a barrier to prevent water from intruding and spreading throughout/underneath the insulation. Conversely, open-cell or fiberglass insulations would allow water intrusion, leading to insulation failure and other serious issues.

Built-in Vapor Retarder: No supplemental vapor retarder required for most applications. **Supplemental vapor barrier may be required in extreme low temperature or high-humidity applications. Protective jacket required for direct-bury applications and if insulation may be subjected to mechanical damage.*

Nonpolar Insulation: The EPDM insulation does not induce or react with water and is non-corrosive to copper piping.

Superior Fire Safety: 25/50 rated (ASTM E84, UL723, CAN/ ULC- S102) and self-extinguishing (ASTM D635).

Suitable for Modern Refrigerants:

- R410A
- A2L such as R-32 and R-454B
- Sub-critical CO2
- And others

Greater UV Resistance than NBR/PVC Insulation: Minimal cracking or color change caused by UV in accordance with ASTM G7.

Suitable for Interior & Exterior Applications: **For exterior applications, Aerocoat®, Aerocoat LVOC®, or an insulation jacket are recommended for UV protection to maximize the insulation's life cycle.*

Naturally Mold-Resistant: No biocides required.

GREENGUARD Gold Certified: For low chemical emissions.

Does Not Contain: asbestos, fibers, formaldehyde, lead, mercury, mercury compound, or nitrosamine.

Compliant with EPA TSCA: Does not contain PFAS, PBT, and POP chemicals.

Ultra-low PVC Content: Less than 1%.

Domestically Manufactured: Insulation, copper, and packaging are all proudly manufactured in the USA.

Total Qty		Product #	Tube OD	Length (Feet)	Insulation Thickness
Each	Feet				
		CCE0206060	1/4"	60	3/4"
		CCE0306060	3/8"	60	
		CCE0406060	1/2"	60	
		CCE0506060	5/8"	60	
		CCE0606055	3/4"	55	
		CCE0706055	7/8"	55	

NOTE: Quantities are estimates only. Contractor is responsible for quantities required on project.

Total Qty		Product #	Tube OD	Length (Feet)	Insulation Thickness
Each	Feet				
		CCE0208050	1/4"	50	1"
		CCE0308050	3/8"	50	
		CCE0408050	1/2"	50	
		CCE0508050	5/8"	50	
		CCE0608045	3/4"	45	
		CCE0708045	7/8"	45	
		CCE0412060	1/2"	60	1-1/2"
		CCE0512060	5/8"	60	
		CCE0612060	3/4"	60	
		CCE0712060	7/8"	60	

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SPECIFICATIONS

Reftekk does not independently verify information provided by its vendors and makes no representation to the accuracy or completeness of information

GENERAL

Manufactured in USA: Yes

Available Lengths: 60 ft

Suitable for the following uses:

- Up to 700 psi working pressure
- Hot fluid temperatures up to 257°F (125°C), continuous
- Below-ambient fluid temperatures down to -297°F
- Exterior Applications (*Aerocoat®*, *Aerocoat LVOC®*, or an insulation jacket are recommended)
- VRV/VRF, Split Systems, Mini-Splits, and others
- All CFC, HCFC, HFC, HFO, and Class A2L refrigerants and refrigeration oils, including R410A, R-32, R-454B, synthetic refrigerant, and others
- Sub-critical R744 (CO2) with proper design pressure considerations
- **NOT suitable for use with ammonia (R 717) or Methyl Chloride (R40) refrigerants**

COPPER TUBING

Material: UNS C12200 DHP (Deoxidized High Phosphorus) Seamless Copper

Property	Details / Test Result	Mfg. Standard / Test Method
Copper Content	≥ 99.9% pure copper	ASTM B75
Temper	O60 (Soft Anneal)	ASTM B1003-16, ASME B31.5
Tensile Strength	≥ 30 ksi (207 MPa)	
Elongation in 2 inches	≥ 40%	ASTM B1003-16
Dimensions and Tolerances	Per standard	
Cleanliness	Pass	
Pressure Rating	700 psi @ 250°F	

INSULATION

Material: Closed-cell EPDM (Ethylene Propylene Diene Monomer)-based rubber elastomeric foam pipe insulation

Standard Specification: ASTM C534, Type I (tubular), Grade 1

Available Thicknesses: 1-1/2"

Property	Test Result	Test Method
Service Temperature, CONTINUOUS	-297°F to 257°F -183°C to 125°C	ASTM C411 ^{a,b}
UV Resistance	Minimal Cracking or color change ASTM G7	ASTM D1171
Ozone Resistance	No cracking ASTM D1171	ASTM E96
Water Vapor Permeability, Max	0.02 perm-inch (4.38 x 10 ⁻¹¹ g/Pa.s.m)	ASTM E96
Water Absorption (% by Volume), Max	0.2%	ASTM C209/C1763
Surface Burning/Flammability (through 2" thick)	Pass	UL94 V-0
	25/50	ASTM E84, UL723, CAN/ULC-S102
	Pass	NFPA 90A/90B
	Self-extinguishing	ASTM D635
VOC Emissions	< 0.5 mg/m ³	CDPH Standard Method v1.2
Corrosion of Stainless Steel	Non-corrosive	ASTM C692, DIN 1988
Fungi Resistance	No Growth	ASTM C1338/G21
Mold Resistance	No Growth	UL181 Section 13
Density	3.0-6.0 lb/ft ³	ASTM D1622
Linear Shrinkage	< 7.0%	ASTM C534

R-Value ^c			
Tube OD	Thickness		
	3/4"	1"	1-1/2"
1/4"	6.7	10.1	N/A
3/8"	6.1	9.1	N/A
1/2"	5.6	8.3	14.1
5/8"	5.2	8.1	13.4
3/4"	5.0	7.7	12.8
7/8"	5.0	7.4	12.8

c) 75°F (24°C) mean temperature

a) AEROFLEX® EPDM flexibility begins to decrease at -70°F and below. This does not impact the insulating properties of the material.

b) Approved for intermittent operating temperatures to 300°F / 150°C for up to 30 minutes within a 24-hour period.

! IMPORTANT

1) Liability for the following decisions belongs solely to the project's Designer, Specifier, Engineer, Contractor, Purchaser, and/or Commissioning Agent:

- Suitability of the product for the intended application and pressure requirements
- Proper insulation thickness(es) to **1) avoid condensation**, 2) meet code requirements, and 3) meet manufacturers' installation instructions
- **Compliance with 1) national and local building codes, 2) energy codes, and 3) manufacturers' installation instructions**
- Covering the installed product for protection, concealment, and/or other reasons

2) The applicable version of International/ Energy Conservation Code likely requires, not just recommends, protection for piping exposed to the outdoors.

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IMPORTANT INSTALLATION NOTES

GENERAL

- 1) Refer to AEROFLEX's website (<https://www.aeroflexusa.com/>) for additional information.
- 2) Refer to Reftekk's website (<http://www.reftekk.com>) for additional information.
- 3) Install insulation with the mindset to **KEEP THE PIPE DRY**.
- 4) Install in straight lines and avoid creating traps due to sagging tubing.
- 5) Install carefully and avoid tearing or deforming the insulation during installation.
- 6) **Do NOT** allow the insulation to be deformed by unistrut, wire, straps, or wire ties.

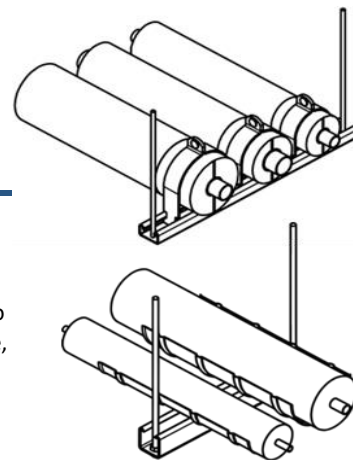
General Insulation
Installation Guidelines:



SELECTING INSULATION THICKNESS(ES)

For each tube size and corresponding fluid temperature (varies by line type: liquid, suction, hot gas, etc.), insulation thickness(es), at minimum, must be chosen as the thickest requirement from each of the following criteria:

- 1) Equipment manufacturers' installation instructions
- 2) Code requirements (specifically city/county/state/federal adopted energy codes, such as IECC, T24, and/or ASHRAE 90.1)
- 3) Condensation prevention, affected by the fluid temperature and humidity. For humidity, consider the following:
 - Geographic location of project
 - Installed location within project (saunas, pools, locker rooms, kitchens, shafts with minimal airflow, etc.)
- 4) Engineering specifications



SUPPORT

- 1) At a minimum, support the piping at the spacing intervals as required by relevant codes and/or project specifications.
- 2) Support with Cush-A-Therm insulated pipe supports.
 - If Cush-A-Therm supports are not possible and saddle supports are used instead, the insulation will compress at these locations, and condensation may occur if the compressed insulation thickness is less than what is required to prevent condensation. A good "rule of thumb" is to assume the insulation will compress 50% over time. Therefore, if using saddle supports, the installed insulation thickness(es) should be at least twice the minimum thickness than what is required to prevent condensation.
 - **Do NOT** use saddle supports vertically or outdoors.

BRAZING / CONNECTING

- 1) **Brazing:** ensure a **wet rag** is **wrapped around the copper tubing** and located between the insulation and joint to be brazed.
 - **Do NOT** apply heat directly to the insulation, and **do NOT** apply heat without using a wet rag.
- 2) **Flares and Mechanical Couplings:** install per manufacturers' installation instructions.

Important: Ensure all joints are properly insulated. Separate insulation jackets may be required to ensure the insulation is not compressed or deformed.

SEALING

- 1) **KEEP THE PIPING SYSTEM DRY**
- 2) Repair any tears in the insulation with Aeroseal® contact cement and cover with Aeroflex Protape®.
- 3) All seams & joints **must** be sealed w/ Aeroseal® contact cement and taped with Aeroflex Protape®.
 - All seams and joints **must** be water and vapor tight.
- 4) Use **ELECTRONIC GRADE** silicone sealant between the insulation and the copper at all terminations (valves, equipment, etc.).
 - Insulation ends **must** be water/vapor sealed to increase protection against intrusion of any rain, moisture, chemicals, and/or contaminants.
 - **ONLY** use electronic grade silicone sealant.

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