



This interpretation is intended to provide guidance to staff for consistency of review and is subject to change without notice. Application of this interpretation, policy or code alternate to specific projects may vary.

Code Issue: Refrigerant lines connect various components of heat pumps and other HVAC equipment and are required to be insulated in residential and commercial buildings. How does SDCI enforce requirements for refrigerant line insulation in residential and commercial buildings?

“Residential buildings” include single-family, two-family, and 1 – 3 story multifamily buildings. “Commercial buildings” include all buildings not defined as “residential buildings,” and thus include multi-family buildings four stories or taller.

Interpretation:

For Residential Buildings:

The 2018 Seattle Residential Code (SRC) Section M1411.6 requires R-4 insulation for refrigerant lines. The 2018 Seattle Energy Code (SEC) Section R403.4 requires R-6 insulation for mechanical system piping insulation. Where there is a conflict between a general requirement and a specific code requirement, the specific requirement governs, according to SRC Section 101.5 and SEC Section R101.4. The insulation of refrigerant piping requirement per SRC M1411.6 is the more specific requirement and governs over the requirements of SEC R403.4.

The minimum insulation requirement on vapor lines in residential building is R-4 insulation. Mini-split and certain other heat pumps typically also require liquid line insulation. The required insulation per the manufacturer’s recommendations must be provided and may have a higher R-value than the code required minimum.

For Commercial Buildings:

Refrigerant piping, other than piping factory installed in HVAC equipment, shall be insulated per SEC 403.10.4 and as follows:

For lines that convey hot gas:

- Minimum 1-inch insulation on piping outside the building thermal envelope.
- Minimum 1/2-inch insulation on piping within the building thermal envelope.

For liquid lines:

- A minimum of 1/2-inch insulation for mini-split systems and for other systems is required where the manufacturer requires insulation, or where the metering device is in the outdoor unit.
- No insulation is required for other heat pump types or for cooling-only units, unless required by the manufacturer.

**2018 SRC M1411.6, SEC R403.4
and SEC C403.10.4
Refrigerant Line Insulation**
Release Date: December 10, 2021
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For questions about whether this code solution applies to your project:

- If you have submitted a permit application, contact the Building Code plan reviewer assigned to your application.
- If you have not submitted an application, send us a question through the SDCI website www.seattle.gov/sdci/resources/send-us-a-question or in person at the Applicant Services Center.
- Visit the Applicant Services Center website for more information about hours and location www.seattle.gov/sdci/about-us/who-we-are/applicant-services-center