



Land Development Services

# Technical Bulletin

**Subject: A2L Refrigerants in One-Family and Two-Family Residential Construction**

**Date: 05/14/2025 No.: 25-04**

**Summary:** This technical bulletin provides information on the permitting, review, and inspection processes for A2L refrigerants in one-family and two-family residential construction in Fairfax County. The 2021 Virginia Uniform Statewide Building Code (VUSCB), effective Jan. 18, 2025, has added provisions that allow the installation of heating and cooling appliances that utilize A2L refrigerants for human comfort. These provisions can be found in Chapter 14 of the Virginia Residential Code (VRC).

**Effective Date:** Immediately

**Background:** The use of A2L refrigerants introduces new safety considerations due to their flammability classification. These requirements ensure proper installation, testing, and labeling to mitigate risks associated with A2L refrigerants. The installation of these refrigerants must comply with applicable codes, applicable standards, and the manufacturer's installation instructions. Land Development Services has provided the policy below that applies to all proposed installation of equipment using A2L refrigerants.

## Policy:

- **Permit Requirements:** A permit is required for refrigerant changes from A1 to A2L classifications. A permit is required for any new installation of equipment using A2L refrigerants.
- **Installation and Safety Requirements:**
  - Equipment must be installed according to the manufacturer's installation instructions. The manufacturers' installation instructions must always be on site.
  - Field installed items in the ductwork, such as electric heating elements, open flames, or devices switching electrical loads, may not be above 2.5kVA
  - Installed units must be labeled with installer contact information, system charge, and refrigerant number.
  - Maximum refrigerant charge for a single A2L system is 34.5 lbs.
- **Pressure Testing Requirements:**
  - Contractors must self-certify pressure tests.
  - A self-certification form must be submitted before the final inspection. It is the responsibility of the contractor or owner to perform the test. [Download the form online.](#)
  - Pressure tests must be conducted for a minimum of 60 minutes at 450 PSI using either oxygen free nitrogen, helium, or argon. This requirement is based on the testing pressures recommended by most manufacturers and on the working pressure of the A2L refrigerants.
- **Refrigerant Detection System (RDS) Verification:**

- Systems with an RDS must be tested per UL-60335-2-40 before the final mechanical inspection.
- Contractors must self-certify proper installation of the RDS.
- A self-certification form confirming the RDS installation and testing must be submitted with pressure test documentation. It is the responsibility of the contractor or the owner to perform the test. [Download the form online.](#)

If you have any questions, please contact Jonathan Weaver in the Residential Branch of the Building Division at **703-508-7993, TTY 711**

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