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ADVISORY REGARDING USE OF A2L REFRIGERANTS

Issued November 12, 2024

The following advisory was issued pursuant to M.G.L. c. 30A, §8 by the Board of Building Regulations and Standards (“BBRS”) at its regular meeting held on November 12, 2024. The purpose of this advisory will be to advise stakeholders, including registered design professionals, installers, and building officials of the BBRS’ interpretation of the application of the 10th Edition Massachusetts Building Code (780 CMR) to the use of equipment utilizing A2L refrigerants.

1. Introduction

Effective January 1, 2025, a rule imposed by the federal government will take effect which will prohibit the manufacture¹ of certain equipment deemed to have a high Global Warming Potential (“GWP”). This prohibition directly impacts air conditioning and refrigeration products which historically have depended on high GWP refrigerants. Once the prohibition goes into effect, new equipment must be manufactured to utilize alternative low GWP refrigerants, which are generally classified as mildly flammable, or A2L. Historically, this flammability rating caused these refrigerants to be prohibited for widespread use. That prohibition is reflected in the 2021 International Mechanical Code, which the BBRS has adopted as part of the 10th Edition Massachusetts Building Code (“10th Edition”).

Since the federal government announced the ban, industry stakeholders have worked to address the safety issues regarding A2L refrigerants by way of drafting updated codes and standards to govern these installations. The BBRS is currently reviewing the 10th Edition to determine appropriate updates for the continuing transition to A2L refrigerants. However, though some elements of the 10th Edition do not reflect these latest updates, by way of its adoption of certain referenced standards as well as provisions for alternative compliance, the 10th Edition as written already facilitates the use of A2L refrigerants.

2. Advisory

It is the interpretation of the BBRS that the 10th edition of the Massachusetts Building Code allows the installation of equipment utilizing A2L refrigerants based on the following pathway:

¹ Already installed equipment is not impacted by this prohibition; equipment manufactured prior to January 1, 2025 may continue to be installed until January 1, 2026,



Authority of Building Officials to approve Alternative Materials, Design and Methods of Construction and Equipment

Even though the 2021 International Mechanical Code does not facilitate A2L refrigerants, the 10th Edition foresaw this issue and was able to adopt four important referenced standards which do, specifically the following are adopted in 780 CMR 2802:

1. ASHRAE 15-2022 - Safety Standard for Refrigeration Systems
2. ASHRAE 34-2022 Designation and Safety Classification of Refrigerants
3. UL/CSA 60335-2-40-2022 Household and Similar Electrical Appliances - Safety - Part 2-40: Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers; and
4. UL/CSA 60335-2-89-2021 Household and Similar Electrical Appliances - Safety - Part 2-89: Particular Requirements for Commercial Refrigerating Appliances with an Incorporated or Remote Refrigerant Unit or Compressor

The BBRS is in the process of comparing these referenced standards to the 2021 International Mechanical Code and will likely update the 10th Edition accordingly to address any provisions of said code that are outdated. However, it is the opinion of the BBRS that, to the extent that the 2021 International Mechanical Code is deemed to conflict with an installation abiding by one of the above referenced standards with regards to the use of A2L refrigerants, said installation is approvable pursuant to 780 CMR 104.11:

“104.11 Alternative Materials, Design and Methods of Construction and Equipment. The provisions of 780 CMR are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by 780 CMR, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of 780 CMR, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in 780 CMR in quality, strength, effectiveness, fire resistance, durability and safety.”

It is the opinion of the BBRS that the use of A2L refrigerants in compliance with the referenced standards listed above complies with the “intent of the provisions of 780 CMR, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in 780 CMR in quality, strength, effectiveness, fire resistance, durability and safety.” Accordingly, the BBRS advises that any such installation consistent with this advisory is readily approvable by a reviewing building official.

Based on the above pathway, the BBRS is of the opinion that equipment utilizing A2L refrigerants, when installed in compliance with the updated safety and design standards, is legal and appropriate for installation in Massachusetts based upon the 10th Edition Building Code.