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MEET YOUR SAFEBUILT TEAM

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Letter from the SAFEbuilt Team

To all the Building Contractors working within the Town,

Thank you for your ongoing partnership.

We have proudly served the Town and its citizens for several years and are truly grateful for the relationships that we have built and maintained within the community. Working together we can build a better, safer community the citizens deserve.

This newsletter contains important information for you and your teams, so please take a moment to read through each section. If you have any questions, feel free to reach out to me or the SAFEbuilt team.

Enjoy the summer days.

Sincerely,

Russ Weber

Building Official / Regional Manager



UPDATES

State Electrical Board Temporary Variance- The State Electrical board has granted a temporary variance to Article 210.8 (F) NEC 2020 which requires GFCI protection for AC Equipment. This variance only applies to mini-split, heat pump, and other units employing power conversion equipment. This variance does not apply to typical AC condenser equipment. For additional information please see the variance request documentation on the following page or on the State Electrical Board website [Electrical HOME | Division of Professions and Occupations \(colorado.gov\)](https://www.colorado.gov/electrical-home).

STATE ELECTRICAL BOARD

Special Meeting Item

MEETING DATE: June 23, 2021

AGENDA ITEM: Request for Temporary Variance – Electrical Inspection Program

1560 Broadway Denver, Co 80202

Permit – N/A

COMMENT: Electrical Inspection Program is requesting a blanket variance to Article 210.8 (F) NEC 2020. This request is to temporarily waive outdoor outlet GFCI compliance for ductless mini-split-type heating/ventilating/air-conditioning (HVAC) equipment and other HVAC units employing power conversion equipment as a means to control compressor speed. The purpose of this Temporary Blanket Variance is not to eliminate the GFCI protection but provide time for the HVAC industry to understand and address the field tripping on ductless mini splits and units containing power conversion equipment.

Note: Power conversion equipment is the term used to describe the components used in HVAC equipment that is commonly referred to as a variable speed drive. The use of power conversion equipment to control compressor speed differs from multi-stage compressor speed control.

INSPECTOR SUPERVISOR OBSERVATIONS: The Electrical Board has received code inquiry's regarding ductless mini splits causing GFCI tripping. Many state electrical inspectors have seen the tripping firsthand. HVAC manufacturer's designs have a lower voltage for the power conversion equipment and controls, and in some cases, when using a control transformer, they use the equipment grounding conductor supplying the HVAC equipment for the grounded conductor return path, which is putting a large amount of leakage current on the equipment ground. Also, due to the use of the power conversion equipment, the change from AC to DC, and the ramping up and down in frequency, a leakage current could occur and be problematic.

Possible Board Motions:

(Board Members, before making the motion, please appropriately edit.)

I move to grant a Temporary Variance to Article 210.8 (F) of the 2020 National Electrical Code as the Board finds that:

1. The Electrical Board has received several inquiries and complaints regarding this code change, impacting ductless mini splits, and other relevant installations, causing GFCI tripping.
2. HVAC manufacturer's designs have a lower voltage for the power conversion equipment and controls, and in some cases, when using a control transformer, they use the equipment grounding conductor supplying the HVAC equipment for the grounded conductor return path, which is putting a large amount of power leakage current on the equipment ground.
3. Also, due to the use of the power conversion equipment, the change from AC to DC, and the ramping up and down in frequency, a leakage current could occur and be problematic.

Additional requirements/provisions:

1. This Temporary Variance will expire one-year from the date the Board grants the request and will be revisited for extension if needed;
2. If the NFPA issues an applicable Tentative Interim Amendment; or,
3. Upon the Board's adoption of the 2023 NEC.

OR

I move to deny this variance as it is the opinion of the Board that sufficient grounds have not been met to justify waiving current code requirements.



HIGHLIGHTS

Ladder Requirements for Re-roof Inspection- All re-roof installations are required to have an approved ladder set and secured to access all levels of the roof for inspection.

Ladder Requirements for Final Inspection- As part of the final inspection process inspectors need access to the above ceiling spaces for attic insulation verification. Please provide a ladder at the attic access points at all final inspections to ensure that this portion of the inspection can be performed safely.

Approved Plans- Please have your permitted documents on-site prior to inspections. This includes permit card, truss drawings, engineer foundation plans along with stamped approved construction plans, Energy Code Compliance Reports, and Manuals J,D,&S. Copied plans that are 11"x17" or larger are acceptable with approved stamp (11"x17" plans must be clearly legible). If you do not have the required paperwork available, we can not complete the scheduled inspection.



Building Code Spotlight

BUILDING CODE SPOTLIGHT-

N1101.10.1 (R303.1.1.1) BLOWN-IN OR SPRAYED ROOF & CEILING INSULATION

Per this section the thickness of the blown-in or sprayed fiberglass and cellulose roof and ceiling insulation shall be written in inches on markers that are installed at not less than one for every 300 square feet throughout the attic space. The markers shall be affixed to the trusses or joists and marked with the minimum initial installed thickness with numbers not less than 1 inch in height. Each marker shall face the attic access opening. The thickness and installed R-value of the sprayed polyurethane foam insulation shall be indicated on the certification provided by the insulation installer.

N1101.10.2 (R303.1.2) INSULATION MARK INSTALLATION

The insulating material shall be installed such that the manufacturer's R-value mark is readily observable at inspection