

BCAB

Building Code Advisory Board of Palm Beach County

TECHNICAL ADVISORY

Issued on July 19, 2023
by Building Code Advisory Board

Subject: Rooftop Solar PV Mounting Structural Attachments (Rafter/Truss vs Wood Deck)

Purpose: The intent of this advisory is to encourage uniform enforcement of safe and code-compliant installation methods for rooftop solar Photovoltaic Array systems. Currently, only attachments directly to roof structural members (eg: trusses, rafters) have been validated to resist PBC's design wind-loads.

Background: The rapid expansion and growth of the solar industry over the last several years has outpaced code and regulatory development. While the National Electrical Code (NFPA 70) has been adding and revising requirements each code development cycle, the attention to structural components and systems used for mounting roof-top arrays has lagged behind.

Factors: The solar boom has inspired industry and entrepreneurial development of a variety of mounting components and systems. Initially, the majority of these were not undergoing third-party structural testing and/or evaluation.

UL 2703 [Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels] has evolved into the primary industry standard for PV Mounting Systems Certification; however, the scope of UL 2703 excludes "roof attachments for above roof mounting" [Section 1.4(l)]. Unfortunately, there is a widespread misconception that the standard does include roof mounting due to use of "mounting systems" and "mounting devices" in the title.

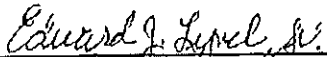
Rule 61G20-3 (Product Approval Rule, F.A.C.) includes "structural components" as a product category requiring "approval according to the provisions of this rule" [61G20-3(1)(g)]. Thus, PV mounting components and systems should be tested, evaluated and certified in accordance with the Rule; and is required to maintain a current Florida Building Commission approved evaluation report (FL, NOA, ICC-ES, ETL, etc.).

Each *approved* evaluation report must be thoroughly reviewed for limitations-of-use and design parameters that may restrict the product's use for a particular installation design.

To date, only products specifying truss/rafter attachment with lag screws have been validated to meet PBC's design wind loads. Numerous products and systems have proposed "deck/ sheathing only" attachment methods, but none of those have been able to produce sufficient load-resistance data.

Therefore, the Board strongly advises all those concerned to carefully review all PV mounting attachments and systems for compliance with the design wind loads of Palm Beach County. Site-specific engineering that demonstrates a continuous structural path capable of transmitting all applicable loads to the foundation, in accordance with the Florida Building Code, may be acceptable to the AHJ.

For Building Code Advisory Board


Edward Lynch, Chair

The Building Code Advisory Board of Palm Beach County was created by a Special Act of the Florida Legislature, at the request of the building code enforcement and construction industries. The purpose of the Board is to advise the Board of County Commissioners and local governments concerning the adoption of building codes and their enforcement throughout the County. The Act also granted Palm Beach County special powers concerning building codes, in the interest of the public's health, safety and general welfare.
2300 North Jog Road · West Palm Beach, Florida 33411-2741 · 561-233-5101 · FAX 561-233-5020

Revised: 7/2023

/Users/edwardsenior/Library/Containers/com.apple.mail/Data/Library/Mail Downloads/C0ECCBC2-BA89-433A-BB98-2F479488AD11/BCAB-Rooftop_PV_Attachments-to-Sheathing(FINAL).doc