



# THE 2025 SOLAR MOUNT PLAYBOOK

Choosing the right solar panel mount is crucial for ensuring a secure, durable, and cost-effective installation. Factors like surface type, load capacity, installation method, durability, cost, and local weather conditions all play a significant role in selecting the best mount for the job. This paper explores these key considerations in detail, providing installers with a comprehensive guide to making informed decisions that balance budget, performance, and long-term reliability.

(888) 567-0832 | [QUICKBOLT.COM](https://www.quickbolt.com)





## KEY POINTS

### Surface Type

The type of surface, like a roof, ground, or pole, determines the mount type. For example, tile roofs need different mounts than metal ones, and ground mounts may need extra foundation work based on soil.

### Load Capacity and Structural Integrity

The mount must support the weight of the rack and panels while withstanding environmental stresses like wind and snow to ensure a safe and durable system.

### Installation Method

The method used to attach the mount – bolted, ballasted, or clamped – affects installation cost, time, and roof impact. Bolted mounts provide strong, stable support and evenly distribute fastening force. Ballasted mounts avoid penetrating the roof but concentrate weight on specific points.

### Durability and Longevity

Mounts should last 25-30 years, matching panel lifespan, using materials like aluminum or steel to resist weather and reduce maintenance costs.

### Cost

Mounts typically account for about 10% of the total solar system cost but are the foundation of its stability. Selecting lower-quality materials may result in long-term expenses, such as maintenance, leak repairs, and system issues.

### Local Weather Conditions

When installing in regions with extreme or varying weather conditions, ensure the mounts are built to handle local stresses like high winds or heavy snow and comply with county safety codes.



# QUICKBOLT'S DETAILED ANALYSIS OF SOLAR PANEL MOUNT SELECTION

## Importance of Surface Type

The type of surface where the solar panels will be installed is a foundational consideration. Mounts must be compatible with the surface, whether it's a residential roof, commercial flat roof, or ground. For instance, roof types such as tile, metal, or asphalt shingles require different mounting solutions, such as [17662](#), [16320](#), [17766](#), [17587](#), or [17612](#) (see more on [pg. 5](#)). Ground mounts offer flexibility but may need additional foundation work depending on soil type. The surface type affects the overall design and cost, ensuring the mount fits securely without damaging the structure.

## Load Capacity and Structural Integrity

Load capacity and structural integrity are critical to ensure the mount can support the weight of the solar panels and endure environmental stresses. This includes resistance to wind, snow loads, and seismic activity, emphasizing the need for mounts to last over 20 years. The mount must be engineered to prevent failure, which could compromise the entire solar system, making this factor essential for safety and reliability. Installers should be aware of the load capacity and pull-out-strength specifications and ensure compliance with local building codes. QuickBOLT provides AHJ packets online where you can find all of our testing documentation: [quickbolt.com/testing-certifications](http://quickbolt.com/testing-certifications)

## Installation Method and Its Implications

The method of installation, such as bolted, ballasted, or clamped, affects both the installation process and long-term performance. Mount choice impacts labor costs, installation time, and potential surface integrity, making it a key consideration for project planning and budget management.

QUICKBOLT mounts were designed to meet these challenges by being quick to install, easy to understand, and bundled with parts for easy ordering and carrying to the roof. For example, bolted mounts provide a secure attachment for sloped roofs, ballasted mounts are ideal for flat surfaces to minimize penetration risks and adjustable corrugated metal mounts like the QB RibRider® are ideal for metal roofs with ribbed profiles.

## Durability and Longevity Expectations

Durability and longevity are vital, as the mount should have a lifespan of at least 20-25 years, matching the expected life of solar panels. Materials like aluminum and steel are commonly used for their weather resistance. QuickBOLT mounts are made from 304 stainless steel and have 25-year manufacturer warranty. This ensures the system remains functional without frequent replacements, reducing maintenance costs and enhancing return on investment. Steel also has the flexion capacity to bend with the system, rather than break, as weather changes may cause expansion and contraction on the roof, causing rail to shift slightly. Installers should look for mounts with warranties that reflect their expected durability, ensuring long-term reliability.

## Cost Considerations and Budget Alignment

Cost is a significant factor, encompassing the price of the mount itself and associated installation and labor expenses. It typically accounts for about 10% of the total solar system cost. Installers must balance cost, quality and availability, ensuring the mount meets technical requirements without exceeding the project budget, which is crucial for both residential and commercial projects. QUICKBOLT mounts are available Online and from distributors, allowing for competitive pricing, options, and availability. QuickBOLT's orders ship out same or next business day whenever possible unless otherwise arranged.

## Local Weather Conditions and Environmental Factors

Local weather conditions, such as high winds, heavy snow, or extreme temperatures, must be considered to ensure the mount can withstand these challenges. This is particularly important in regions with severe weather, as the mount's design must comply with local building codes and environmental standards, ensuring safety and performance over time. QuickBOLT's QB2 for rafters, Butyl Bottom Deck Mount for direct-to-deck, and #17612 hook for Stone Coated Steel are all Miami-Dade approved, meeting the requirements for the most severe weather conditions.

# COMPARATIVE ANALYSIS OF FACTORS

To organize the factors and their implications, the following table summarizes key details:

FACTOR	DESCRIPTION	IMPACT ON INSTALLATION
Type of Surface	Determines mount type (roof, ground, etc.) based on surface material and slope.	Affects mount compatibility and installation method.
Load Capacity and Structural Integrity	Ensures mount can support panel weight and environmental stresses.	Critical for safety and system longevity.
Installation Method	Method of attachment (bolted, ballasted, etc.) affects cost and surface impact.	Influences labor costs and potential damage.
Durability and Longevity	Mount must last 20-25 years, matching panel lifespan.	Reduces maintenance and replacement costs.
Cost	Includes mount price and installation, typically 10% of total system cost.	Must fit within project budget.
Local Weather Conditions	Design must handle winds, snow, and temperature extremes.	Ensures performance in specific climates.

This table highlights the interplay between technical, economic, and environmental factors, providing a comprehensive view for installers.

## ADDITIONAL CONSIDERATIONS AND INDUSTRY INSIGHTS

While the six factors above are primary, other considerations like aesthetics, maintenance access, and code compliance are also worth consideration.

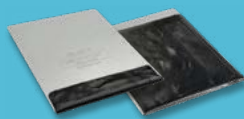
In conclusion, the six most important factors for choosing solar panel mounts—type of surface, load capacity and structural integrity, installation method, durability and longevity, cost, and local weather conditions—provide a robust framework for installers. These factors ensure the system meets technical, economic, and environmental needs, enhancing overall performance and safety. By evaluating each factor, installers can select mounts that lead to successful, long-lasting solar installations.



# QUICKBOLT'S ROOFTOP MOUNTS

	PART #	MOUNT	ROOF TYPE	RAFTER OR DECK	MAX PULLOUT	OTHER MAX LOAD	CERTIFICATIONS
	<b>17662, 17862</b>	QB2 with Microflashing®	Asphalt Shingle, EPDM & TPO	Rafter Mounted	1418 lbs. avg. uplift	491 lbs. avg. lateral load, 475 lbs. avg. shear load, 45 lbs. avg. bending	MIAMI-DADE Approval, UL Recognized Components
	<b>16319, 16320</b>	Butyl Bottom Deck Mount	Asphalt Shingle, EPDM & TPO	Direct-To-Deck Mounted	1310 lbs. avg. uplift	460 lbs. avg. torsional, 1073 lbs. avg. bending	MIAMI-DADE Approval, UL Recognized Components
	<b>17766</b>	QB RibRider®	Exposed Fastener, Trapezoidal, and Ribbed Metal	N/A	1510 lbs. avg. uplift	716 lbs. avg. lateral load with L-Foot Down, 410 lbs. avg. lateral load with L-Foot Up	UL Recognized Components
	<b>17747</b>	The Throne	Standing Seam Metal	N/A	1103 lbs. avg. uplift	790 lbs. avg. shear load	UL Recognized Components
	<b>17587, 17589</b>	Height Adjustable All Tile Roof Hook for Side Mount Rails	Flat or Curved Tile	Rafter Mounted	2091 lbs. avg. uplift	395 lbs. avg. compressive load, 487 lbs. avg. shear load	UL Recognized Components
	<b>17608, 17542</b>	Flat Tile Roof Hook for Side Mount Rails	Flat Tile	Rafter Mounted	1506 lbs. avg. uplift	141 lbs. avg. compressive load, 316 lbs. avg. shear	UL Recognized Components
	<b>17572</b>	5mm Adj. Height for Side Mount Rails	Curved / Spanish Tile	Rafter Mounted	2240 lbs. avg. uplift	326 lbs. avg. compressive load, 484 lbs. avg. shear	UL Recognized Components
	<b>17612</b>	Height Adj. 18mm for Side Mount Rails	Stone Coated Steel	Rafter Mounted	816 lbs. avg. uplift	243 lbs. avg. shear load	MIAMI-DADE Approval, UL Recognized Components

**AND MORE**



**QuickPATCH™**  
Seals Roof Holes Quick  
17782, 17783, 17785



**Conduit Puck™ Kit**  
For Rooftop Conduit Support  
16323

**SEE ALL ROOFTOP MOUNTING SOLUTIONS ON [QUICKBOLT.COM](https://www.quickbolt.com)**

If you have any questions about solar mounts or would like to discuss your project, QUICKBOLT is here to help. Our team is ready to consult with you and recommend the best mounts for your specific installation needs. Please reach out to your local QUICKBOLT [sales consultant](mailto:sales@quickbolt.com) with any questions.