



# Tin Metal Roof Mounting System Empery Solar

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### Table of Contents

- The Hidden Costs of Traditional Solar Mounting
- How Empery Solar Rewrites the Rules
- Cold-Formed Steel vs. Aluminum: Why It Matters
- Proven Performance in Harsh Climates
- U.S. Residential Solar Boom Demands Better Solutions

### The Hidden Costs of Traditional Solar Mounting

You know what's crazy? Over 23% of solar installation delays in the U.S. last year stemmed from roof compatibility issues. That's where the Tin Metal Roof Mounting System comes in - but wait, let's back up. Traditional clamps often damage tin roofs, right? The thermal expansion mismatch between aluminum rails and tin sheets causes micro-fractures that homeowners might not notice until leaks appear.

Last month, a Texas family discovered this the hard way. Their 5kW system started pulling away from the roof during a hailstorm - turns out the mounting hardware couldn't handle the 14°F temperature swing that morning. Situations like these are why Empery Solar developed their patented thermal compensation tech.

### How Empery Solar Rewrites the Rules

What if your mounting system actually strengthened the roof structure? The Empery Solar solution uses cold-formed steel brackets that distribute weight across multiple roof ribs. Each clamp grips three standing seams simultaneously, reducing point load by 62% compared to standard systems.

Pre-galvanized steel withstands salt spray (perfect for coastal Florida homes)

Adjustable tilt from 5° to 35° without drilling

Tool-free installation cuts labor costs by 1.5 hours per kW

But here's the kicker - their wind lift resistance of 150 mph isn't just theoretical. During Hurricane Ian, 94% of Empery-installed systems in Southwest Florida remained intact versus 67% survival rate for conventional mounts.

### Cold-Formed Steel vs. Aluminum: Why It Matters

Let's get technical - but not too technical. Aluminum's great until you consider galvanic corrosion. When dissimilar metals meet (like aluminum clamps on tin roofs), moisture creates a battery effect. Empery's steel

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components have matching galvanic potential with tin, basically eliminating this hidden corrosion risk.

Wait, no - actually, the real innovation's in the coating. Their triple-layer zinc-aluminum-magnesium alloy provides what engineers call "sacrificial protection." Even if scratched, the coating self-heals through a process called cathodic polarization. Fancy terms aside, it means your mounting system outlives the solar panels themselves.

## Proven Performance in Harsh Climates

Take Minnesota's Iron Range - temperatures swing from -40°F to 95°F annually. Empery's thermal expansion joints allow 1.2 inches of movement per 100 feet of rail. That's crucial when your roof expands/contracts like an accordion. Last winter, a Duluth installation withstood 78" of snow load without deformation - something aluminum rails simply can't achieve.

## U.S. Residential Solar Boom Demands Better Solutions

With residential solar installations projected to grow 21% year-over-year through 2026 (Wood Mackenzie data), the Tin Metal Roof Mounting System addresses three critical needs:

- Compatibility with America's 9 million tin-roofed homes
- Compliance with updated 2024 International Building Codes
- Reduction in soft costs (now 64% of total system price)

In California's NEM 3.0 era, where quick installations make or break ROI, Empery's click-lock rail system lets crews mount panels 40% faster. That's not just convenient - it's the difference between catching the 30% federal tax credit or missing the deadline.

## Q&A

Q: Can this system handle curved tin roofs?

A: Absolutely - the adaptive brackets accommodate radii up to 15 feet.

Q: What's the fire rating?

A: Class A fire resistance certified per UL 3703 standards.

Q: How does pricing compare to aluminum systems?

A: 12-18% upfront premium, but 30-year lifecycle costs are 42% lower.

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