



TECHNICAL MEMORANDUM

DATE: May 7, 2023

FOR: Web Portfolio / Project Showcase

FROM: Roofing Project Management Division

SUBJECT: Premium Tile-to-Metal Retrofit Conversion –Caribbean Drive

1. Overview & Property Details

This technical memorandum highlights the extensive engineering, structural adaptation, and architectural transformation executed at Caribbean Drive in Sarasota, Florida. The project involved a complete material retrofit, converting a heavy, high-maintenance tile roofing system into a high-performance, sleek, and storm-resistant standing seam metal roofing envelope designed to withstand coastal wind-uplift pressures.

- Property Address: Caribbean Drive, Sarasota, FL 34231
- Project Type: Residential Re-Roof / Tile-to-Metal Structural Retrofit
- Primary Objective: Weight reduction enhanced structural envelope longevity, and premium high-velocity hurricane zone (HVHZ) wind mitigation compliance.

2. Material Specifications

The newly integrated roofing assembly was curated using top-tier materials engineered specifically for coastal endurance and exceptional thermal performance:

- **Roofing Profile:** 1.75" Mechanical Standing Seam (MSS) Lock Profile
- **Material Premium:** Metal, offering maximum resistance to saltwater corrosion and coastal oxidation.
- **Finish/Color:** Dark Bronze (Premium Kynar 500® PVDF resin-based coating for maximum solar reflectance and fade resistance).
- **Underlayment Protection:** One (1) full layer of Polyglass Polystick® XFR advanced high-temperature, dual-purpose fire-resistant and self-adhering (peel-and-stick) waterproofing barrier. This premium, cutting-edge membrane delivers UL Class A fire protection and an impermeable secondary water barrier directly over the prepared substrate.

3. Structural Retrofit & Engineering Standards

Tile Demolition & Substrate Preparation

- **Load Reduction:** Removal of the existing concrete or clay tile roof safely eliminated thousands of pounds of dead load stress from the home's wood-truss framing, significantly improving structural safety margins.
- **Deck Inspection & Renailing:** Following tile extraction, the entire plywood deck substrate was meticulously inspected for moisture compromise, repaired where necessary, and re-fastened to meet current Florida Building Code (FBC) aerodynamic uplift and hurricane-nailing spacing schedules.

Fastener and Clip Wind Mitigation Spacing

To ensure absolute structural integrity along the Sarasota coast, high-load mechanical standing seam clips were integrated into a dual-zone anchoring pattern:

- **Perimeter Boundaries (Enhanced Uplift Protection):** Clips were structurally anchored at an ultra-tight 3 inches on center (O.C) interval along all eaves, rakes, valleys, and ridge lines to completely counteract high-pressure localized wind vortices.
- **Field Zones (Main Roof Slopes):** Panels across the primary field slopes were systematically secured at 6 inches on center (O.C), drastically exceeding standard building code minimums for unparalleled structural wind anchoring.

4. Advanced Craftsmanship & Detail Execution

- **Precision Thermal Accommodation:** The 1.75" Mechanical Standing Seam profile allows the premium Dark Bronze panels to expand and contract seamlessly during rapid Florida thermal cycles without placing binding stress on the fasteners or structural clips.
- **Elite Polystick® XFR Shield:** Utilizing Polystick® XFR over the plywood deck delivers an industry-leading shield capable of resisting extreme under-panel temperatures up to 265°F while offering critical fire-retardant performance and absolute waterproofing redundancy.
- **Immaculate Substrate Layout:** The peel-and-stick membrane was applied completely smooth and free of air pockets, creating a pristine surface that guarantees the dark aluminum panels lay structurally flat without mirroring underlying plywood seams or substrate variations.
- **Architectural Flashing Integration:** All transition flashing details, including valleys, wall intersections, and custom hip caps—were mechanically locked and sealed to match the Dark Bronze profile perfectly, delivering a cohesive, leak-proof architectural statement.

Conclusion: The tile-to-metal conversion at Caribbean Drive was successfully executed to the highest master craftsmanship standards. By upgrading the home to a premium 1.75" Mechanical Standing Seam system over a fortified plywood deck and a high-performance layer of Polystick® XFR underlayment, the property has been successfully retrofitted with an ultra-durable, beautifully modern, and highly engineered fire- and hurricane-defense envelope.