TECHNICAL MEMORANDUM

DATE: September 17, 2025

FOR: Web Portfolio / Project Showcase

FROM: Roofing & Home Improvement Pro Division

SUBJECT: High-Velocity Hurricane Zone (HVHZ) Shingle-to-Metal Reroof Conversion Compliance

1. Overview of Structural Conversion

This memorandum outlines the structural engineering criteria, product specifications, and code compliance validations under the Florida Building Code 8th Edition (2023) for a comprehensive residential reroofing transformation. The project safely executed a substantial weight-load reduction and structural upgrade, converting the property from a heavy, traditional tile layout to a high-performance, mechanically fastened blue metal architectural panel system engineered specifically for the strict wind-uplift demands of the High-Velocity Hurricane Zone (HVHZ).

2. Product Specifications & Engineering Evaluation Metrics

The new structural roof envelope utilizes top-tier, impact-resistant metal components designed to achieve optimal wind-load distribution across both steep-slope and low-slope roof sections:

Component A: Steep-Slope Metal Panel Roofing System

- **System Manufacturer:** Sentrigard Metal Roofing Systems, LLC (An NBHandy Company)
- **Florida Product Approval / NOA Number:** FL46113-R4
- **Roof Covering Model:** Sentrigard ML150 Series Standing Seam Roof Panel (0.032" Aluminum, 20" Wide x 1-1/2" tall architectural profile finished in a custom blue architectural coating).

- **Substrate Interfacing:** Mounted directly over 5/8" CDX plywood decking attached to core framing elements.
- **Engineering Performance Ratings:** Designed and tested to easily resist localized minimum design wind pressures calculated at **Zone 1: -74 PSF, Zone 2: -98 PSF, and Zone 3: -128 PSF**.
- **Core Testing Metrics:** Met mandatory high-velocity standards including **TAS 100** (wind-driven rain resistance) and **TAS 125** for structural uplift defense.

Component B: Low-Slope Secondary Layer Roofing System

- **System Manufacturer:** CertainTeed LLC
- **Florida Product Approval / NOA Number:** 24-0906.04
- **Roof Architecture Components:** Self-adhered multi-ply configuration containing an integrated Flintlastic SA Ply Base and finished with a high-durability Flintlastic SA Cap sheet.
- **Deck & Drainage Profile:** Installed over 5/8" wood decking at a 0/12 drainage layout utilizing a 1/4" to 12" tapered insulation strategy fastened with FlintFast #12 hardware and 3" steel plates.
- **Maximum System Design Pressure:** Certified structural threshold rating of **-127.5 PSF**, safely clearing site-specific design load mandates (Zone 1: -64 PSF; Zone 2: -84 PSF; Zone 3: -115 PSF).

3. Secondary Protective Barriers & HVHZ Enhancements

To maximize structural resilience and shield the conditioned interior framing against severe atmospheric pressure differentials, specialized protective underlayments were fully integrated into the installation layout:

- **Fire Barrier Core:** Deployed Titanium FR fire barrier shielding underlayment (NOA #23-1102.02) arranged with self-adhesive laps spaced at 12" o.c. to establish an advanced protective seal.
- **Uplift & Deck Management:** Executed deck-fastening modifications designed to align directly with ASCE 7-16 wind load maps and FBC Section 1524 required owner notifications regarding wood deck renailing during reroofing transitions.

4. Conclusion

The technical conversion from a traditional tile layout to a high-velocity standing seam blue metal envelope dramatically modernizes the home while removing immense dead-weight load from the framing. Based on the field application metrics, independent evaluation reports verified by Scott Wolters, PE (62354), and professional oversight by qualifier Lizet Braceras (Licensed Roofing Contractor CCC1336894), the completed project fully satisfies all high-velocity structural safety regulations mandated by the State of Florida.