

Department of Defense Sustainability Roof Project

MacDill Air Force Base (MAFB), Florida

Location: Building 3070

General Contractor: Alternative Coatings Solutions (ACS) Inc.

Roof Restoration Project #: B3070

Roof Manufacturer: Instacoat Premium Products (IPP)

This roof deck required repairs to eliminate leaks, water damage and annual maintenance repair costs on a 37K square foot roof. Design calling for a full roof tear-off and replacement would require TPO membrane removal and construction costs to raise curbs, drains, flashing, and installing new iso-board. Following sustainability guidelines listed in Executive Orders and the Federal Acquisition Regulation, MAFB project design pursued sustainability goals applying a liquid applied cool roof approach to roof repair and restoration. This design change eliminated the demolition phase and prevented 28 tons of construction waste from entering local landfills and reduced Carbon Dioxide (Co2) emissions for the construction phases. (EPA WARM model)

Existing Roof Details:

- 37,000 square feet (ft2)
- 60mils TPO membrane mechanically attached, over 4K 8" screws in the steel deck (leak pts)

Project Details:

- Instacoat Premium Products (IPP) roof restoration system: Liquid Applied Seamless Cool Roof
- New monolithic, liquid, cold applied, highly reflective, UV stable, seamless silicone membrane
- Existing seams, curbs, and drains, sealed with 250HS white silicone and reinforcement fabric
- 250HS UV stable highly reflective white silicone topcoat, 25mils silicone 10-year NDL warranty
- Cool Roof Rating Council (CRRC)-SRI Values exceeded--Replaced DOE Energy Star roof products

Instacoat Premium Products Sustainability Design Benefits:

- Exceeded 50% waste reduction goal; obtained 100% reduction, 28 tons of waste prevention
- 88% Solar Reflective reduced Heat Island Effect, reduced deck temperatures 30-60 degrees
- **Seamless system**, significant cost savings over lifetime of roof--90% of leaks are seam related
- IPP seamless systems provides an air/thermal barrier across the deck, saving M&O tax dollars
- California Energy Commission rated 33% energy savings with installed cool roof technologies
- Co2 emissions reduced, less HVAC run cycle times, equipment life cycle/maintenance extended
- No demolition construction waste: reduced Co2 emissions at MAFB, FL--Net-Zero Goals
- IPP sealed decks prevent energy loss, promote energy conservation and dollar cost savings

Selecting cool roof technologies for this project helped the DOD meet or exceed sustainability goals. The documents and sources listed below contain the sustainability goals followed on this project.

- Executive Orders: 13990, 14005, 14008, 14057 Sustainability Design
- DAF Climate Action Plan: Priority 2-Climate Informed Decisions and Acquisitions
- Federal Acquisition Regulation (FAR) Part 23 Environment/Energy--Cool Roof Rating Council (CRRC)
- FAR 36.104 Policy-Energy Savings, Waste Reduction, Co2 Reduction, Renovation Cost Savings
- Environmental Protection Agency (EPA)-Heat Island Mitigation Strategies (cool roof technology)
- Third-party ratings: Miami Dade HVHZ, UL, CRRC, CA Title 24, NSF, ASHRA Zone 2 Cool Roof