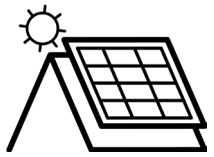




Case Study — Emirates National Bank Dubai

PVKIT® & S-5-V™ Clamp



At-A-Glance

Location

Dubai, United Arab Emirates

Architect

BURO LINK Architectural Engineering consultant

General Contractor

Naresco Contracting LLC

MEP Contractor

Al Madaen Electromechanical Works

Solar Contractor & Installer

SDG Energy (Sharaf DG) Contracting LLC

Module Manufacturer

545 Jinko Solar

Inverter Manufacturer

Sungrow

Roofing Contractor

Aegis Roofing Company

Roof Profile

Aegis 50 architectural standing seam metal roof, 1 mm

Industry

Commercial

Situation

Solar installers needed a lightweight, aesthetic solar attachment solution for the standing seam metal roof on the Emirates NBD parking garage project.

Result

The S-5! direct-attach (rail-less) solar PV mounting solution provided a low-profile system, allowing the maximum use of space and making it easier for installers than a traditional rail system.

Project Stats

- Roof Measures: Approximately 1250 square meters (13,500 square feet)
- Roof Pitch: 330 mm (13") standing seam @ 7 degrees
- Project Size: 236kW
- S-5! Products Supplied:
 - PVKIT MidGrab (830)
 - PVKIT EdgeGrab (410)
 - S-5-V Clamp (quantity 2160) used for cable trays, walkways, fall protection systems



The Project

Emirates NBD (National Bank Dubai) is a leading banking group in the MENAT (Middle East, North Africa and Turkey) region with more than 28,000 employees representing 70 nationalities.

As part of the United Arab Emirates' (UAE) ongoing sustainability strategic initiative *Net Zero by 2050*, a national drive to achieve sustainability through energy-efficient building technologies, NBD wished to construct a multi-story parking building to meet the parking requirements for its head office building.

An iconic project and the first of its kind in Dubai, this new eight-story building is located near the palace of Sheikh Mohamad, the ruler of Dubai. It has a built-up area of approximately 33,800 square meters (364,000 square feet) for 1,000 parking spots and is poised to achieve Gold Park Smart Certification.

The car park features an architectural double-folded standing seam metal roof with a 236kW solar array secured in place utilizing the non-penetrating **PVKIT® direct-attach™** rail-less solar mounting solution specifically designed, engineered and load-tested for this architectural profile.

The Challenge

The goal for the car park was to create a structure 100% powered by solar utilizing the entire rooftop space allotted. The system would not only need to power the structure's elevators, EV charging stations and lighting throughout, but would also need to supplement the office building nearby.

Additionally, the deflection of the roof was between 20-30 mm (3/4 to 1.2 inches), which made installing and aligning the solar modules challenging. Installers needed a lightweight solution to secure the solar modules to the standing seam roof.

This was a premium project for installer SDG Energy (Sharaf DG) Contracting LLC so they sought a premium solar mounting solution to meet all of the requirements for the project.



The Solution

Extreme hot weather conditions in Dubai (reaching up to 48 degrees Celsius during the summer months/118 degrees Fahrenheit), and the available sun energy of 2200 kWh per KWp presented the optimal opportunity for rooftop solar.

The solar installer selected the PVKIT® direct-attach™ (rail-less) solar solution paired with the S-5-V™ clamp to provide an aesthetically pleasing, low-profile mounting system, allowing the maximum use of space on the roof.

Featuring just three components, the U.S.-made PVKIT enabled solar installers to fix solar panels directly onto the metal roof. The PVKIT's pre-assembled components considerably reduce installation time and cost for PV mounting by eliminating the need for an elaborate rail system, while also providing better load distribution into the roof and substructure. Using the S-5! mounting gear was also a mere 15% of the weight of rail mountings, and the only system recommended by the roof system manufacturer Aegis Roofing Company.

How Did the PVKIT Help?

- Cut material costs in half, including freight costs
- Cut installation costs in half by eliminating the assembly and installation required by traditional racking
- Minimized the amount of time workers must spend in harnesses
- Improved aesthetics
- Eliminated the risk of a voided roof manufacturer warranty—no holes/no damage
- Saved 85% of the weight of rails
- Minimized all jobsite logistics due to compact size and weight

Long-Term Outlook

The Emirates NBD parking garage project was able to utilize the maximum roof space for its 236kW solar array by utilizing the lightweight PVKIT solar solution, in line with its goal to achieve sustainability through energy-efficient building technologies.



“Traditionally, we are a rail-based installer. We wanted to use S-5! for a long time because we understand the mechanics of S-5! products are top quality. With imitation products, you can literally put your finger under the panel and lift them right off the roof. That doesn't happen with S-5! The design of the building is robust and quite impressive so utilizing an aesthetic solar mounting solution was of utmost importance. The PVKIT was easy to assemble and fix around. Everything fell right into place.”

— Ayaz Alware, Senior Manager – Engineering, Sharaf DG Energy



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