S-5-N Clamp

Case Study — Genics, Inc.

At-A-Glance

Project Name
Genics, Inc.

Location
Acheson, Alberta, Canada

Structural Engineer
Lex 3 Engineering, Red Deer, Alberta

General Contractor/ Solar Contractor
Sunfind Solar Products, Inc., Alberta

Roof Profile
24 gauge, one-inch nail strip metal roof

Module manufacturer
Canadian Solar, Ontario

Inverter manufacturer
SolarEdge, U.S

Industry
Commercial / Industrial

Situation
In line with Genics' approach to environmentally-friendly products and its commitment to corporate environmental responsibility, the company sought to supplement the power generation at its manufacturing facility utilizing renewable energy sources.

The Result
The **S-5-N** clamp provided a simple, secure and economical solution for mounting solar PV via a rack-and-rail system to the metal rooftop of Genics' manufacturing facility.

The non-penetrating clamp did not compromise the roof integrity and eliminated the risk of voided roof warranties.

Project Stats
- Roof Measured: 80" x 252"
- Roof Pitch: 2/12
- Project Size: 148kW DC
- S-5-N: quantity, 1036

The Project
Alberta, Canada is home to the building products and services industry, world-renowned for its expertise in ensuring a building retains heat in the winter and remains cool in the summer, while using energy wisely and cost-effectively. Additionally, approximately 95% of commercial roofing in Alberta is metal roofing.

Genics is a global industry leader and international inventor, specializing in the development and manufacture of environmentally responsible, worker-safe products used to preserve and protect wood, and extend the service life of wood assets. Based in Acheson, just two miles west of the province's capital city of Edmonton, the Genics' facility manufactures quality wood treatment products for utilities, builders, contractors, farmers and homeowners throughout North America and Europe.

Being an environmentally-conscious company with a high level of energy consumption on site, Genics sought to utilize renewable energy sources to supplement its power generation and "going solar" was their method of choice. Genics' manufacturing facility is a 20,000+ square foot metal-clad building featuring a one-inch nail strip metal roof and a 148kW DC solar array secured to the roof with the S-5-N clamp.

The Challenge
The main goal for Genics was to reduce its operating costs and find an environmentally-friendly solution. The biggest challenge for the project was the availability, or lack thereof, of engineering documents for the entire building.

Structural Engineering Firm, Lex 3 Engineering was brought in to measure the roof profile, including the height of the ridges, the gauge, the rafters and the girders. From there, they would need to complete the structural engineering required for the project.

Due to the facility's high level of energy consumption, solar installer Sunfind Solar was charged with fitting as much solar on the roof as possible and finding an economical anchoring system that together would meet the engineering requirements.

"Sunfind Solar has been using S-5! roof attachments since its inception nearly 16 years ago. With a large number of metal roofs utilized in Western Canada, Sunfind Solar quickly discovered that S-5! has a superior product, which provides a reliable rack-to-roof anchoring solution for our systems.

With the wide variety of solar system solutions Sunfind Solar provides, S-5! has a roof attachment that we can depend on to meet the engineering and quality standards required. S-5! offers superior component design and quality, which in our opinion, makes S-5! the best value on the market. Sunfind Solar exclusively chooses S-5! attachments for all of our metal roof applications!"

—Caleb Schmidt, Founder, Sunfind Solar

The Solution

The shallow design of the facility's roof and the southeast orientation of the building necessitated that the solar system be installed facing slightly southeast and with a 10-degree module tilt, so they elected to utilize a tilted rack application for the project.

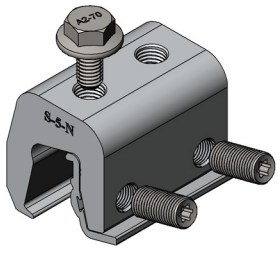
In addition, the roof features a nail strip profile; therefore, Sunfind Solar selected the **S-5-N** clamp to secure the tilted rack array. The S-5-N is specifically designed for nail strip profiles and provided the best tested holding capacity to the seam.

The clamp features an innovative insert that ensures a superior custom-fit to the seam profile and angled setscrews facilitate easy installation. The nose of the clamp and the angled wall of the clamp both engage the overlapping portion of the nail strip panels.

As a result, Genics was able to achieve supplementing 20% of its facility's annual energy consumption, thereby reducing its overall operating costs.

How Did the S-5-N Help?

- **Certified manufacturing quality/superior product design**
- **Documented by certified testing to meet engineering requirements for the project**
- **Ease and speed of installation via angled setscrews**
- **No special tools required**
- **Eliminated the risk of a voided roof manufacturer warranty—no holes/no damage**



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Long-Term Outlook

Genics is now contributing to producing its own clean energy, while reducing utility costs and putting an otherwise empty roof space to work.