

INDUSTRY INFORMATION BULLETIN



TO: Commercial Roofing Industry Photovoltaic (PV) Stakeholders

TOPIC: A Summary of SPRI Membrane Manufacturer Photovoltaic (PV) Ready Roof Systems and Services

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Context

Commercial rooftops are an attractive platform for the installation of solar photovoltaic (PV) electricity producing systems. It is important to remember, however, that the roof's function is, first and foremost, to protect the building contents and its people from the elements. Anticipating the *potential* risks associated with the installation of a PV system (array) on an existing warranted roof, SPRI Members have developed "PV Ready" roof assemblies and services designed to provide maximum protection for the roof (and maintain its warranty coverage). *The following are general guidelines from SPRI. It is important that each roof system manufacturer be consulted and specific requirements be followed prior to the installation of a PV system on a warranted roof assembly in both new construction and reroofing situations.*

Critical Issues

The installation of a PV system on an existing warranted roof raises many important questions for the building owner. For example, will the roof:

- accommodate the added weight of the PV array?
- service life and the PV service life be similar?
- watertight integrity be compromised by penetrations?
- drainage be compromised?
- system wind and fire approvals be impacted?
- warranty be adversely impacted?
- accommodate heavy foot and equipment traffic?
- membrane accommodate the heat generated by the PV array?

PV Ready Roof Membranes

A broad selection of membranes and thicknesses are available for consideration when a PV installation is planned. For example:

- EPDM, PVC, TPO, KEE and CPA smooth and fleeceback membranes;
- APP and SBS Modified bitumin membranes; and
- Certain types of "enhanced" membranes engineered for use with a PV array.

Some manufacturers require:

- An approved insulation board with a minimum thickness and compressive strength;
- The addition of an approved cover board to enhance insulation protection;
- An approved protection/separation sheet installed between the PV components and the membrane.

Existing Roof Requirements

To approve the installation of a PV system upon an existing warranted roof and maintain the warranty, manufacturers may have PV system specific requirements that the existing roof must meet, such as:

- Limitations on the current age of the existing roof system;
- Restrictions on the method of roof system attachment to the structural deck;
- Restrictions for a minimum approved roof membrane thickness;
- Requirements that an approved cover board be installed over the insulation;
- Pre-solar and post-solar system installation roof inspections; and
- A requirement that the building owner make any needed repairs at his expense.



Project Documentation

Manufacturers frequently require that project documentation forms be completed to install a PV system over an existing warranted roof. For example:

- A Standard Pre-Installation Notice with Roof Drawings;
- A PV Post Warranty Alteration Form; and
- Completed Inspection Reports (before and after PV installation).

Manufacturers may also require that an “Overburden (O/B) Waiver Form” be completed by the building owner, wherein the owner:

- Describes the PV materials to be installed (the “overburden”);
- Agrees to pay for the overburden removal when leak repairs are necessary; and
- Agrees to pay for repairs caused by the overburden removal and replacement.

General Issues

Here are some other general terms, conditions and suggestions that should be considered:

- Racks should have enough clearance above the membrane to allow for roof servicing.
- Set PV arrays so that all field seams and penetrations are accessible for repair.
- High traffic areas should be protected with walkway pads or pavers.
- It is the building owner’s responsibility to be sure that local building codes are met.
- Staging areas for PV materials for installation should be identified and protected.

Additional Services

Many roofing system manufacturers offer certain services to building owners in addition to the sales of the roofing systems products. For example:

- Solar products;
- Financial analyses to show ROI payback period for a planned solar installation;
- Specifications and details for both the roofing and solar system installations;
- Solar roof layouts;
- A single source warranty for both the roof system and the solar integration; and
- Warranty insurance that pays for the cost of overburden removal, if needed.

For More Information

The information provided above is drawn from a survey of information available on the websites and in the literature of the SPRI Member Membrane Manufacturers. It is a summary of the PV ready products, requirements and services offered by SPRI Members. Each SPRI Member may have its own PV ready program and no SPRI member may necessarily be considered to have all of above program elements. Always consult the manufacturer of the roof system specified for your new construction or reroofing project prior to the installation of a PV system on a warranted roof.

To review the scope of the PV ready program of any SPRI Member Roofing System Manufacturer, go to www.spri.org where a link to the website of each SPRI Member Manufacturer of roofing systems can be found.