



## **Preparing for Roof-Mounted Photovoltaic Installations**

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## A. General

Information included in this document is to be used as a guideline for consideration when a Photovoltaic (PV) system is to be installed on top of a new or an existing Versico roofing system.

A PV installation will subject the roofing assembly to extensive alteration work and an increase in foot traffic for the purpose of monitoring and maintaining the PV array(s). When assessing a roof assembly for a possible PV installation, consideration must be given to not only operation of the PV system, but also to the accessibility of the roofing assembly and the drains in order to perform adequate inspections, maintenance and repair.

Whenever additional loads are placed on a building or modifications are made to existing systems, prudent best practices mandate a comprehensive review by a licensed design professional. Prior to committing to or proceeding beyond a preliminary design of a PV system, a structural analysis by a registered Professional Engineer should be performed to ensure structural load limitations will not be exceeded.

Climatic and geological conditions, structural load limitations, module tilt, roof height, the racking/mounting method, frequency of membrane penetration, and the roof slope should all be taken into consideration.

## B. Design Considerations

In addition to the design considerations outlined in each of the Versico published roofing system specifications, listed below are additional design recommendations which should be considered when a P V system is to be installed on a new or an existing Versico roof.

The proposed design may be presented to Versico for assessment and specific recommendations, but at no time will Versico approve or warrant any PV system design. It is the building owner's, by its retained design professional, responsibility to ensure that the roofing membrane is adequately protected during construction of the PV array and throughout the serviceable lives of both the PV and roofing systems.

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1. It is Versico's recommendation that roofs expecting an immediate PV system installation and roofs being installed as 'PV ready', should specify the use of a adhered rigid insulation board, e.g. DensDeck, SECUROCK or HP Recovery board, and an adhered membrane of sufficient thickness as to match the expected warranted life of a PV system.
2. On projects with an existing Versico roofing membrane, membrane condition and installation details should be assessed to determine possible splice overlayment or the removal and replacement of certain membrane sections. A Roof assessment should be coordinated through Versico and performed by a Versico field service representative prior to finalizing any upgrades/repairs to the existing roofing system.
3. Rack-supported PV arrays should provide proper clearance to access the roof membrane for the purpose of maintenance or repairs if necessary with the goal of eliminating costly removal and re-installation of PV modules.
4. When penetration of the membrane is required to secure a racking system to the roof deck or building structure beneath the roofing membrane, the use of circular steel tubing will provide the best possible flashing option and facilitate the use of pre-molded accessories. In such instances, Versico specifications and details should be followed and the flashing performed by a Versico authorized roofing applicator to ensure that the warranty will not be voided.
5. Areas, of the roofing membrane, which are heavily traveled during array installation and subsequent periodic maintenance, should be protected with walkway pads and/or concrete pavers. If pavers are selected, they should be used in conjunction with pedestals or sections of walkway pads, used to elevate the pavers.
6. Ballasted PV systems should utilize protection pads between the ballast trays and the roofing membrane to provide protection and facilitate drainage.
7. PV laminates should not be directly adhered to a Versico roofing membrane. Regardless of age or condition, roofing membranes should be overlaid with similar material prior to adhering the PV laminates. This practice of using sacrificial sheets will facilitate the removal and re-installation of the laminates should access to the roofing membrane be required.
8. In order to minimize interruptions to a PV system's production, it is strongly recommended to position the array(s) so that field seams and penetrations are accessible for roofing inspections, maintenance and repair. When not feasible, all existing seams should be overlaid (stripped in) with pressure-sensitive flashing or other acceptable flashing details approved by Versico.

### **C. Versico Roof Assessment**

Prior to commencement of any work, new and existing roof installations with a valid Versico membrane system warranty will require a roof assessment to be performed by a Versico Field Service Representative (FSR) to assess roof condition and to review the proposed installation.

### **D. Warranty Inspections**

1. All work shall be completed by a Versico authorized roofing applicator and must be performed in accordance with Versico specifications or previously issued roof assessment reports written by a Versico FSR.
2. Upon completion of the work, and notification by a Versico authorized roofing applicator, an inspection will be performed by Versico to assess the work performed. Upon acceptance by Versico, a membrane system warranty will be issued for new roofing installations or a reinstatement of warranty for existing projects.
3. All field inspections are conducted by Versico for a fee. Should multiple inspections be required, a fee will be charged for each occurrence.

### **DI. Warranties**

Installation of a PV system will subject the roofing membrane to excessive traffic during installation, operation, and maintenance of the PV array(s). Access for membrane repairs may require the dismantling of panels and/or the remove of modules; therefore, it is important to enhance the membrane system durability to minimize the potential for damage or the probability of leaks.

For new or existing projects, the Versico roof system warranty will cover deficiencies in Versico-supplied material or labor performed by the Versico authorized roofing applicator associated with the installation of those materials.

1. Damages to the roofing system resulting from PV operation or maintenance are beyond the coverage of a new or existing Versico warranty.
2. Should the dismantling of panels and/or the remove of modules be required to complete repairs covered by the membrane system warranty, costs associated with removal and replacement and any increase in repair costs due to limited access shall be the owner's responsibility and are not covered by the warranty.

## F. Quality Assurance

The building owner, by its designated design professional should coordinate through the Authority Having Jurisdiction (AHJ) to ensure compliance with all applicable codes.

When selecting a PV system, the PV module manufacturer should be consulted to verify that the use of their product will not adversely impact the fire code classification of the roof assembly.

## G. Cautions & Warnings

1. Areas designated for staging of roofing or restoration materials and PV array components prior to construction should be protected to prevent damage to the membrane or the insulation below.
2. Maximum distributed, lateral and point loads should be determined by the building owner or his/her design professional to avoid exceeding the maximum compressive strength of the roofing assembly or the maximum loads for which the structure has been designed.
3. Coordination between various trades (Versico authorized roofing applicator and PV system installer/electrician) is essential to minimize delays, avoid unnecessary rooftop traffic over/through completed sections, prevent excessive soiling of highly reflective membranes and avert possible physical damage to the roofing membrane.
4. On new or existing membrane installations, attachment of slip-sheets, walkways, sacrificial sheets and all necessary flashings/terminations or modification to the roofing assembly must be performed by a Versico authorized roofing applicator. **Failure to comply will result in negating the issuance of a membrane system warranty or termination of all existing warranties.**
5. Versico will not warrant or approve the integrity, installation or performance of any PV system or PV system component.

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