

The Installation of a Protection Layer under Ballasted Photovoltaic Racking Systems

The proliferation of rooftop mounted photovoltaic (PV) solar collection systems in Ontario has witnessed a number of “new players” finding themselves working over ICI low-sloped roofing systems.

A well designed and well planned rooftop PV system brings together a number of parties each with a specific expertise. This partnership will vary depending on the specific project but generally consists of an electrical contractor, a roofing contractor, possibly a specialized PV contractor and often times parties representing the building owner, for example a general contractor, architect and structural engineer.

The most common approach to installing rooftop PV systems is to mount the solar collection modules on a support structure or rack, generally referred to as a PV array. Typically these racks are mounted on roof-penetrating support stands or in some cases they are installed on curbs or sleepers.

Another popular method of mounting these systems, especially on an existing building, is to “ballast” the racks. This technique is attractive because it dramatically reduces the number of penetrations through the roofing system. The ballasted approach involves mounting the racks onto support pads which sit directly on the roofing membrane system.

These rack supports vary in design amongst rack manufacturers; at some point though they all end up sitting on the roofing system. Where a rack or support pad sits directly on a roof, it is customary to install some sort of cushion over the roofing membrane and under the rack support or pad. This cushion often times is a layer of extruded polystyrene insulation or a membrane protection layer/slip sheet made of the same material as the roofing membrane. Some roofing system manufacturers sell specialized protection mats or they use a variation of a roof walkway pad.

The purpose of this bulletin is to advise all parties involved with these installations that only qualified roofing contractors should be installing these membrane protection layers. We have been made aware of a number of instances where solar contractors, general contractors and unskilled labourers are performing this work.

These protection layers are designed to protect the roofing membrane from punctures, abrasion and general damage that may result in leakage into the building. It should also be noted that there may be roof system warranty implications when these protection layers are not installed by a qualified and approved roofing contractor.

When installing rooftop PV systems that require ballasting the racking or support system, consult with the roofing system manufacturer or the roofing contractor who installed or is installing the roof, to make sure that the appropriate protection layer is being incorporated. Zero tolerance must be exercised in order to maintain system warranties and protect the life-span of the roofing system.

And finally, this bulletin focuses on only one aspect of installing PV systems on low-slope roofs. Those entertaining such installations should refer to CRCA (Canadian Roofing Contractors' Association) Technical Bulletin Volume Number 57, dated November 2010 and titled *Photovoltaics in Roofing*. That document provides a general overview of the subject and addresses important issues such as combustibility, roof loading, drainage and specific roof considerations. A copy may be found on CRCA's website, www.roofingcanada.com.
