

 Western
COLLOID

FLUID APPLIED REINFORCED ROOFING

**Understanding
Solar Retrofits**



Over the last 20 years, solar panel technology has significantly improved and become more cost-effective. Coupled with rising energy costs, green energy incentives and an increasing number of municipal ordinances, building owners and operators have performed solar retrofitting on their facilities with great success.

Before considering a solar roof installation – ask yourself...

Is your building a candidate?



Can Solar Panels Themselves Harm the Roof?

Solar panels generate heat and additional UV exposure for its roofing system. Most roofs aren't designed to handle the heat that's generated underneath solar panels. It is necessary to make sure the installation of solar panels won't void the warranty.

What Will Happen if I Need to Re-roof Once I Have Solar?

Modern solar panels are meant to last decades and so is your building's roof. Unfortunately, it's rare for roofing replacement materials and solar panels to coincide. Eventually you'll have to repair or replace your roof without causing solar panel damage.

As more buildings utilize the roof deck as a solar field, the roofing industry is faced with creating strong solutions for re-roofing buildings.

Managing a retrofit for traditional roof systems, means removing panels before undertaking roof replacement. Even in those necessary cases, solar panel removal can be costly and inconvenient.

Risk of damage to panels or the roof below is likely whenever solar panels are removed or installed. That damage can lead to reducing the roof's lifespan or voiding the roof's warranty.

In the past if your aging commercial roof needs a replacement a complete solar removal was the only option. Today you may have available options that would allow contractors to complete the roofing project without solar panel removal.



Examples of damage to a TPO roof from solar arrays.

Can Your Roof Support Additional Weight?

According to reports about 40% of commercial buildings aren't suitable for solar panels due to structural limitations and shading.

When analyzing and quoting solar panel installation, reputable solar companies will confirm whether your building can handle the additional weight of the system itself and, for non-penetrating systems, the ballast used to secure them. Fortunately, most of today's rack systems are extremely lightweight. Keep in mind that some states and localities require a sign-off from a certified engineer before project approval.

Roof Surface Concerns When Installing Solar Panels

Anytime you cut into, penetrate, or even set equipment on top of your roof membrane, your roof's integrity gets damaged. Along with a solar contractor, a roofing contractor should make sure these areas are protected and repaired during installation. This may also be the time to evaluate the life left in your roof.

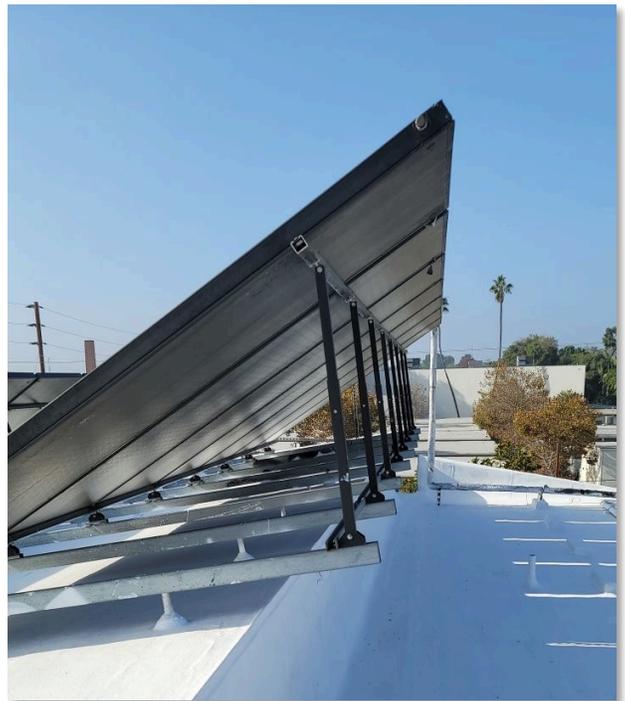
A proven solution when dealing with solar roof installation is a Fluid Applied Reinforced Roof ([FARR](#)) system. Western Colloid has several systems designed specifically for use under solar panels. When properly specified, it can be applied to the roof surface prior to the installation of the solar panels and mounting hardware. Once installed, using a product like Elastic Cement the mounting hardware can reinforce the joints between the coating and hardware to improve overall watertightness.

Drainage

A good installer will study your roof's drainage patterns and install the system so as not to impede them.

Foot Traffic

Roofing products are designed to be water-resistant with as little foot traffic as possible, since something as simple as the sharp edge of a toolbox or a dropped drill can cause roofing damage. There is constant upkeep required for solar panels including maintenance and cleaning, which makes the collection of energy more efficient. Building owners don't want to compromise solar collection's efficiency, so they need a roofing system that can handle the stress such as fluid-applied roofing products.

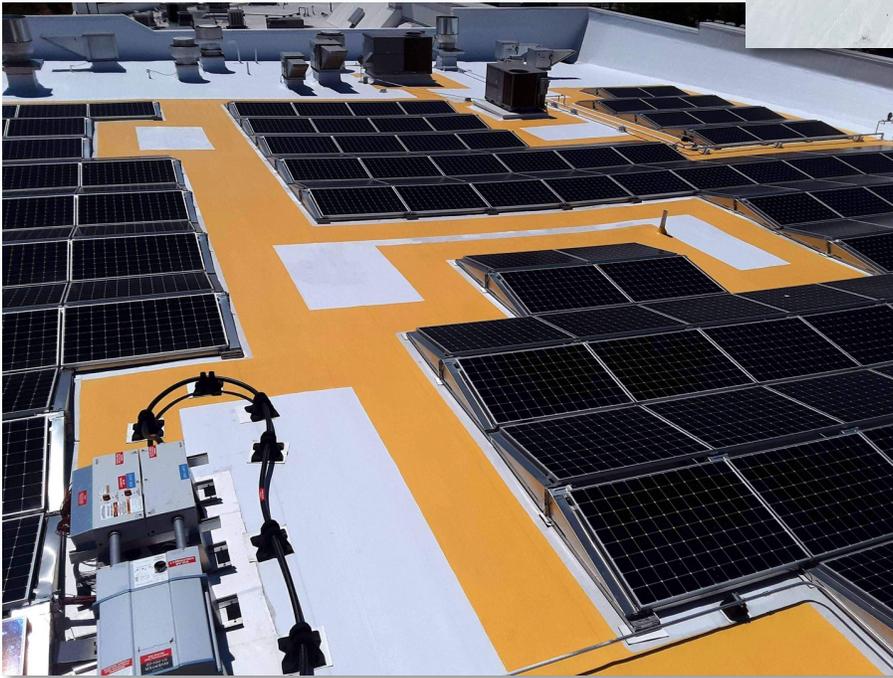
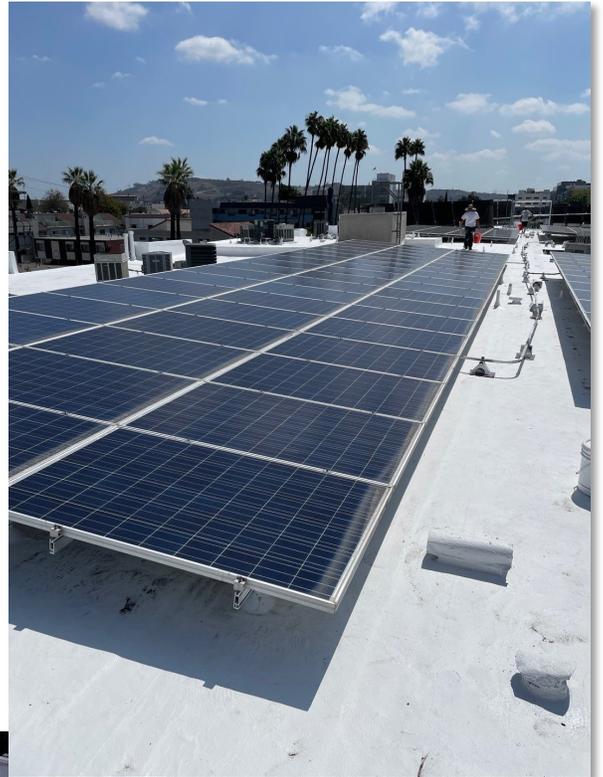


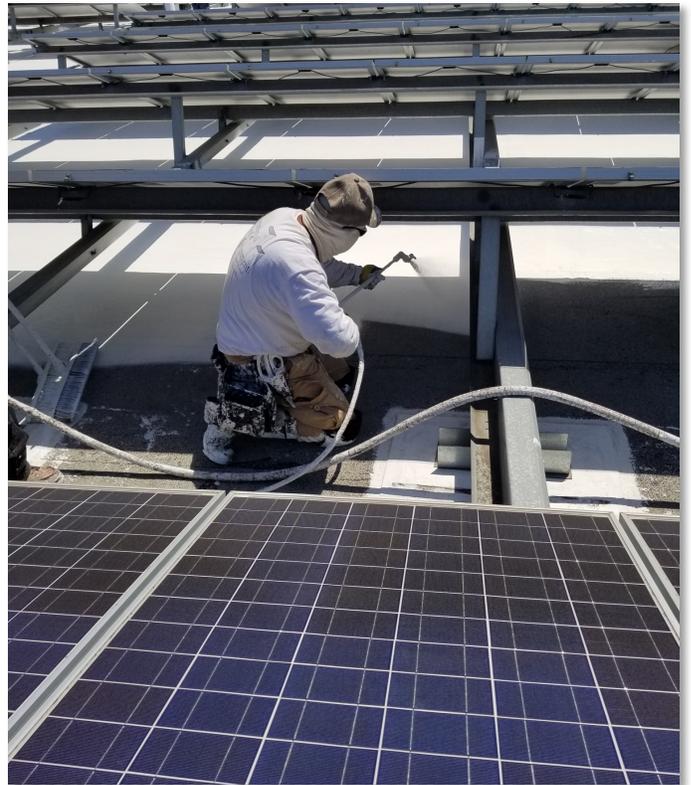
Consider Western Colloid

A considerable solution is to install a FARR system, which can be installed with the solar arrays left in place in many cases. A FARR system can be directly applied over the existing roofing material. This system is applied in liquid form, either as a spray, by roller or soft brooms.

Western Colloid products provide a permanent seal around roof penetration with the ability to go over most substrates including EPDM, TPO, Foam and BUR. Our solution means less work for contractors and stronger waterproofing for building owners.

It's time for the industry to look beyond sheet-applied roofing and provide solutions, such as our FARR systems. Please contact us so we can help you with your roofing installation.





Temple Beth-El

Roofing Contractor: Commercial Roof Management

Solar Contractor: RA Power and Light

Job Location: Aliso Viejo, California

Objective:

The goal was to install a roof system that can handle the installation and maintenance traffic of a solar system installed on top of it. The roof system used needs to last the term life of the solar system installed.

Challenges:

The obvious challenge, besides the difficulty anytime in installing solar on a roof, was the addition of the natural light turret in the middle of the building's roof. The turret was installed after the building and roof were originally built which created bad shear points. This resulted in roof damage literally pulling the existing roof apart. Once stabilized a roof system was needed that could adapt to these difficult design challenges.

Solution:

Was the selection of a Western Colloid Cool Roof System that was sustainable, energy efficient and could handle traffic and impact. This new system needed to be able to provide watertight seals in the most difficult roof details. Additionally, we needed to match the roof system life with the term life of the solar system.

This system is tested and approved by Factory Mutual and meets the FM 4470 Class 1 rating.



Department Store Chain

Roofing Contractor: Commercial Roof Management

Job Location: Various, California

Challenges:

Western Colloid provided the roofing system for eighteen department stores. Each building had over 50% of the roof area covered with a new solar system on them but the majority of the buildings' substrate was old worn TPO with a few EPDM roofs.

Another challenge was certain buildings were in areas with dew causing water to drip off the solar panels over 200 days per year, damaging the TPO membrane underneath.

Additional challenges were:

- Solar damages some roofing products.
- Some roofing products compromise the efficiency of the solar.
- A solar installation may void the roof warranty.

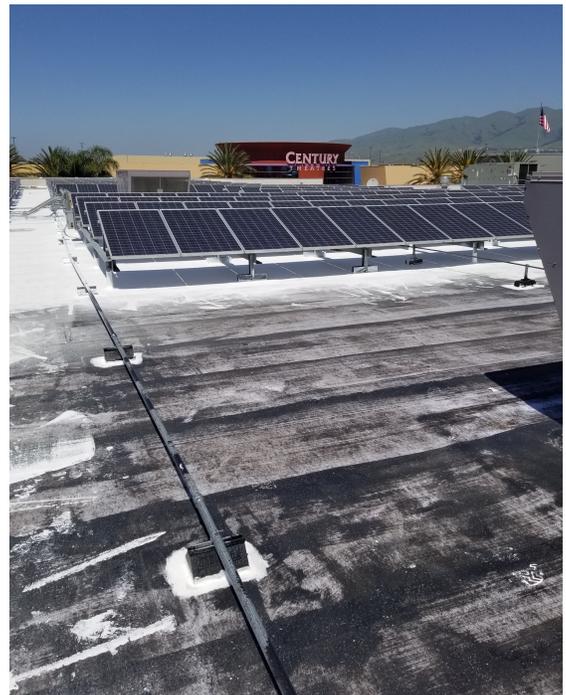
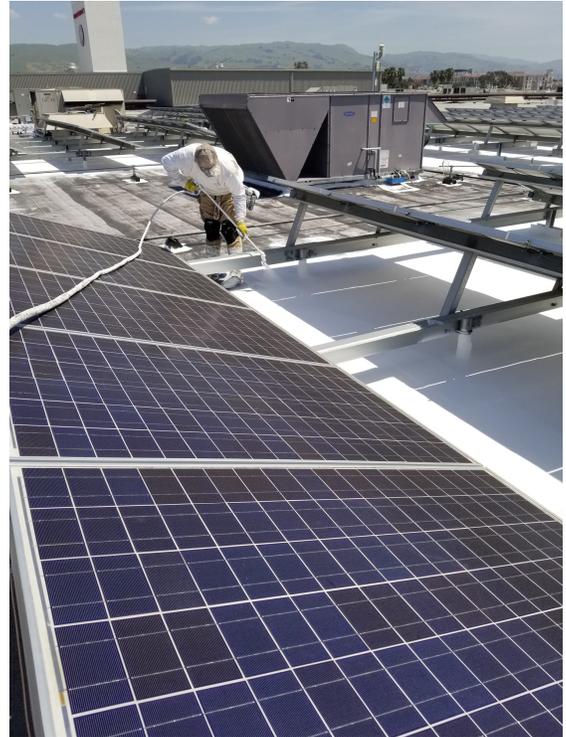
Traditionally, most re-roof projects would have required removing the solar, removing the TPO and installing a new roof and re-installing the solar, but with the fluid applied solution the contractor avoided the nightmare in logistics and a substantial increase in price.

The contractor was able to avoid removing the solar and with the Western Colloid FARR system they were able to install a permanent seal around the roof penetrations.

The project installation images shown here reflect that the FARR system was the right solution for these challenging buildings.

Solution:

The building owner and roofing contractor selected a Western Colloid fluid-applied reinforced roof system that was sustainable, energy efficient and could handle traffic and impact. Additionally, Western Colloid matched the roofing system life with the term life of the solar system. Western Colloid also provided specifications to be tested and approved by Factory Mutual meeting the FM 4470 Class 1 rating, so that the entire system met specifications, code and the building owner's requirements.





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