Bulletin – Solar Panel Cleaning

Solar panels are a great investment for harnessing “green”, sustainable, renewable energy. They are a popular choice for generating electricity. They are designed to capture sunlight and convert it into electrical energy. The panels over time become dirty and covered with debris, reducing their efficiency and output.

Dirty solar panels can reduce the amount of sunlight received by solar panel cell system. This reduces amount of electricity generated. One study showed that dirty solar panels can negatively impact the solar panel efficiency by as much as 30%! Dirty solar panels equate to losing a significant amount of money through loss of electricity going back to the power grid.

The pay back is huge dividends when properly maintained. The key is maintenance. Proper maintenance ensures optimized electricity stream being returned to the grid for consumption. Maximum efficiency results from solar panels when a structured maintenance program is in place and followed. It is a new field of knowledge that commands knowledgeable engineering contractors with comprehensive understanding of the complexities of solar panels. It is not for the light-hearted or the weekend DIY warriors.

Ideally the contractors should have training and an understanding of the different material properties of construction the OEM use to make solar panels such as polycrystalline vs monocrystalline silica. They should also have extensive chemical cleaner understanding (biodegradable surfactants) to deal with different substrates. This knowledge base will allow them to construct programs to ensure the longevity, sustainability, optimization, and environmental elements involved with solar panels with minimum carbon footprint on this planet.

Cleaning your solar panels will extend their lifespan. Dirt, dust, bird droppings, animal feces, and debris can accumulate on the solar panel surface. This can cause abrasions and scratches with the natural elements of wind, rain, and snow. Over time scratches can damage the solar cells’ anti-reflective coating and reduce the lifespan. Clean solar panels can help prevent damage and extend the life of solar panel system.

Solar Panel Soap

Solar Panel Soap should be designed and developed specifically for the solar panels and surrounding environment. The soap should be soft, gentle, biodegradable, and environmentally friendly for solar panel substrate components to remove the dirt and grime with no residue or damage to the panels.

This should entail the following: (a) the soap should be free from harsh chemicals, which can damage solar panels. Avoid using detergents, abrasive cleaners, or soaps that contain ammonia, bleach, fluorides, or vinegar. (b) the pH of the cleaner should be neutral at pH 7 with a range between 6 and 8. This will prevent damage to the anti-reflective coating on the panel and the panel frame. (c) the composition of the cleaner should be biodegradable and eco-friendly. This way the cleaner does not negatively impact the environment or panel. (d) the cleaner must be effective at removing dirt, grime,

baked on soil, bird droppings, and animal feces from the panel surface and frame without any residue. (e) check the OEM literature for the solar panels to ensure soap compatibility with the type of solar panels.

Contractor's Solar Panel Precautions

1. The first step should be to locate and shut off circuit breaker or disconnect the panels from the inverter. This prevents any electrical hazards.
2. It is imperative when cleaning solar panels to use soft materials such as microfiber cloth or sponges to avoid scratching the surface of the panels. Do not use abrasive materials such as steel wool or brushes with hard bristles. Avoid harsh chemicals and pressure washers. It is important to avoid using strong chemicals such as ammonia, bleach, fluorides, acetic acid, since they can damage the surface of the panels. Solar Panel Soaps are designed and developed specifically for solar panels with Supplier's TDS instructions to yield superior performance. Please read TDS carefully before operation.
3. Caution should be exercised for roof panels. It is important to take extra precautions to avoid falls or injuries. Wear slip-resistant footwear and use stable ladder or scaffolding to access panels.
4. The last stage before wetting the panels with water before cleaning should be inspection of the panel fasteners to the roof and check for any damage on the panels such as cracks or chips. If damage, call the installer or professional to repair or replace panels before proceeding.