Quick guide to cleaning
Ensuring the best performance of REC Peak Energy solar panels

Clean solar panels help ensure your solar installation generates optimal electricity. REC Peak Energy panels have been designed for easy installation and minimal maintenance, however, dust, pollen, leaves and other contaminants often find their way onto the panel and soil the surface. To overcome this, REC panels are manufactured with self-cleaning properties, where sufficient rainfall will clean them naturally if installed at a sufficient angle.

Nonetheless, factors such as the amount of dust and dirt in the air, the amount and regularity of rainfall and the optimum angle of installation are dependent upon location and the self-cleaning properties of the panel will not necessarily guarantee a permanently clean and dirt-free panel surface.

The dirt itself will not harm the panels, but allowing it to build up over time can affect system performance. Therefore, to optimize the electrical output, it is recommended to clean the panels when dirt can be seen on the glass surface.

Fig. 1
An example of dust build-up on solar panels over time.

Fig. 2
Dust fall on solar panels.

Before cleaning

Cleaning the front or rear of panels should only be carried out when the panels are cool to avoid thermal shock. During the day, ambient temperature rises and the panels heat up as they produce energy, usually to around 20°C above the surrounding conditions. Applying cool, cold or lukewarm water to hot panels can cause components (e.g. glass) to shrink rapidly, potentially causing cracks and breakages. Inversely, the application of hot or boiling water to cold panels may cause rapid expansion of components and similar breakage. Therefore, only water at ambient temperature should be used.

Panel cleaning should be carried out before reaching working temperature i.e. early morning and must only be cleaned with water at ambient temperature to avoid thermal shock.

Ideally, de-ionized water should be used to clean the panel. De-ionized water is water that has had the mineral ions and salts removed. If de-ionized water is not available, rainwater, tap water or diluted alcohol may be used as a secondary solution.

Ensure the water used is free from grit and physical contaminants that could damage the panel surface.

Staying safe

Solar installations come in different shapes and sizes, so the following steps are meant as a guide only and the installation should be assessed for safety and access before commencing cleaning. If in doubt at any time when cleaning the panels, stop and obtain professional advice.

Safety

When working at heights, use fall and personal protection measures throughout the cleaning process.

Remember: Never at any point stand on, walk on, lean on or apply pressure to the panels as this can cause both visible and non-visible damage to the panel.

The panel is designed to carry the certified load across its whole surface area. Standing on the panels applies force through a much reduced surface area, which can far exceed the certified design load. Equally avoid dropping or allowing any objects to fall on the panel as the impact may cause the panels to break or detach from the understructure, possibly resulting in damage or personal injury.

Cleaning the panels

Washing the panels

A standard flexible garden hose with domestic water pressure may be used to apply as much water to the panel or array as necessary, allowing the water to run down the entire surface. Although REC panels are manufactured to international standards and have passed all relevant certification tests, the use of high pressure hoses for cleaning is not permitted as these may exert pressure in excess of the certified load and cause impact damage, damage to the frame bonding, the laminate or cells and force water between the glass and frame.

The use of pressure or steam cleaners and high pressure hoses, knives, blades and metallic sponges is not permitted on REC panels and will invalidate the warranty.

For further cleaning

If the panels require more cleaning effort to remove stubborn marks, use a soft sponge, microfiber cloth or non-abrasive brush and lightly wipe over the affected area. This may be mounted on an extension pole for an extended reach. Treatment in this maner should remove any loose soiling from the panel glass.

Care must be taken not to scratch, mark or introduce any foreign elements to the glass surface

If marks still remain on the panels, a mild biological and biodegradable washing-up liquid may be used on the panels. The panel must be immediately rinsed with plenty of water.

Rinsing

To rinse the panels, apply as much de-ionized water as required to the highest point of the panel or system until all the loose soiling and/or cleaning solution is washed off. If soiling remains on the panels after rinsing, repeat the cleaning procedure or if any soiling continues to prove stubborn, IPA (Iso-propyl Alcohol) with a concentration of less than 10% may be be used. Acid or Alkali detergent must not be used.

Fig. 3: A clean and functioning solar installation

Drying

Using a rubber squeegee with a plastic frame on an extension pole handle, wipe the panel surface from the top downwards to remove any residual water from the panel glass. The panels can then be left to dry in the air or wiped dry with a chamois.

Avoid putting pressure on the panel surface when drying

Snow

If required, snow can be brushed or wiped from the panels in the same way as described above (i.e. with a non-abrasive brush). Beware of snow slippage from higher areas. However, as snowfall generally occurs at times of the year when irradiation is at its lowest, clearing snow build-up from the panels is not essential for maximum performance.

Congratulations, after completing this process, the panels are now clean and working at optimum efficiency again. With the right practices, cleaning solar panels should be easy and safe.

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