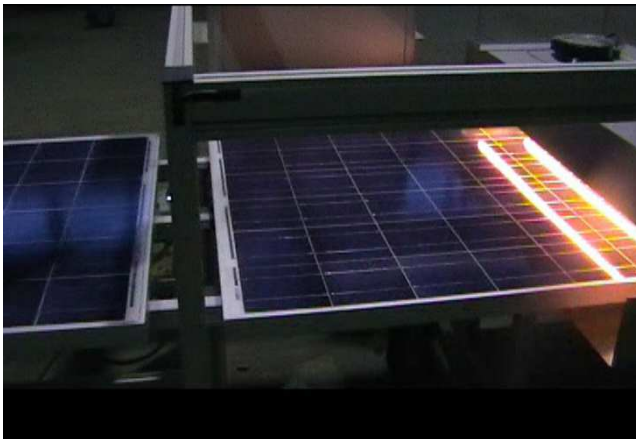




Infrared Heat Cures Nano Sealants More Efficiently

Solar modules convert solar light into electrical energy. As they are located on roofs or in open fields, they are exposed to the environment. Deposits of pollen or bird droppings can significantly impair the efficiency of a solar cell. A new nano sealing helps to break down particles of dirt photo-catalytically, so that they can be easily removed by wind or rain. All protective coatings must be applied and dried homogeneously so that the functional property is effective equally and reliably over all the surface of the coated component. The Nanoproofed® Group from Gleschendorf offers many years of experience in surface sealing of industrial- and building glass. When the company developed a system for the nano sealing of solar modules, it also looked for a drying system which could be easily and quickly controlled. It was important that only the surface should be heated and that this heat should not be transmitted into the depth of the workpiece. Hot air tunnels or simple, conventional infra-red emitter did not meet the requirements. Carbon emitters give out infra-red radiation in the medium wave region and essentially heat only the workpiece surface. They transfer large amounts of energy in a short time and are very responsive. In contrast to a tunnel solution, a constant power is distributed homogeneously over the full width and surface. Tests established an automation of the process and identified the correct amount of applied heat, the optimum wavelength of the radiation, the most efficient workpiece-emitter spacing and the associated heating time. Nanoproofed® products consist of nano particles with components which bond with the surface and other particles which repel rain, ice, snow and dirt. These particles are bound in the nano sealing by glass-type components which give the coating its hardness. The nano sealing is applied in a very thin solution by means of a special air gun process, which guarantees the required very thin coating thickness. During the application, the particles arrange themselves intelligently. The binding components of the nano sealing migrate to the surface and the non-stick components align themselves to the air. This “self-organisation” allows an ultra-thin glass-type layer to be formed. Fine adjustment of the complete system is one of the requirements for a maintenance-free, automated coating. Alexander Illing, managing director of the Nanoproofed Group is enthusiastic about the new system, “Our tests show that solar modules with the nano sealing offer one to five per cent higher output, because of the optimized transmission and the self-cleaning process.”



Features

- Drying of nano sealing on solar cells
- Infrared emitters transfer heat without contact
- Targeted heat to surface of products
- Nano sealant can improve output of solar modules

Technical Data

- Medium wave Carbon infrared heaters
- Response times of Carbon emitters are within seconds, this minimizes thermal damage in the event of conveyor belt stoppage
- Sealing unit with automatic spray gun, automatic conveyor belt, a compressor, a control unit and a tank system for the photo-catalytic sealing solution

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