



Let's talk about prevention with Diot-Siaci

Photovoltaic panels: the risk is on the roof (but not only)

While it was trivial at the beginning of the century, the photovoltaic solar sector began timidly in 2009, and mainly concerned small residential installations (<9kW). This technology is now booming, accounting for more than 6% of electricity generated in France in 2022. While this is due to various factors (particularly the maturity of the technology that offers better yields and lower installation costs), political decisions have made a significant contribution. In France, for example, since 2019 the law states that new constructions with over 1,000 m² of land use must incorporate either a renewable energy production process, a green roof or any other mechanism that has the same result. This obligation often leads to photovoltaic panels due to a faster return on investment.

However, whether they are put up with or chosen, photovoltaic installations remain electrical installations with inherent risks. The Insurance Market has paid to see, and its various players now view these facilities as aggravations. And so does the legislator, who reversed this obligation in 2020 for certain Installations Classified for the Protection of the Environment. The risks described below obviously do not stop at French borders.



Fire

The fire risk occurring on the panels is the one that comes to mind first: potentially more destructive, but above all, more spectacular. Poor quality or damaged panels, poor connectors, installation on a combustible construction... the causes vary. Nor should we neglect inverters, the installation of which is not always wise.

In addition to being a source of fire, a photovoltaic installation is also a vector for spreading to the building on which it is located, as well as to its contents and may constitute an obstacle to intervention (difficulty reaching the panels and the risk of electrocution for firefighters). The damage is no longer limited to the installation alone but to the site's main activity: this is what Insurers fear, especially when the owners of the installation and the building are different.

In the Technical Document D20, the CNPP proposes a guide to best practices to be implemented to limit risk and each insurer has published its own recommendations. To name but a few:

- Non-combustible roof or at least BroofT3
- Good ventilation of the rear side of the panels: the temperature can reach 80°C (176°F)!
- Dedicated premises and firewall for equipment such as inverters
- Use of certified equipment
- Emergency shutoff devices
- Installation accessibility
- Installation maintenance

In general, it is preferable to install photovoltaic panels on a non-strategic building or on a car park shade canopy.



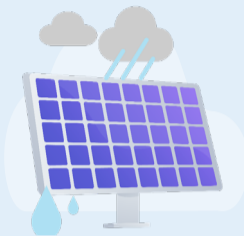
Natural events

Apart from fire, photovoltaic panels can be damaged by natural events. And when all or part of the panels are destroyed, electricity generation also stops.

- Hail: the only solution to date is the choice of the most resistant panels possible.
- Storm: this again concerns the panels and to a lesser extent the roof to which they are attached. Installation and compliance with the attachment systems and their implementation are essential.

With the increase in the intensity of natural events due to global warming, we should expect an increase in this type of loss experience.

Finally, the additional load made up of photovoltaic panels and wiring must be the subject of a structural study to ensure that in the event of a snow storm, for example, all or part of the roof will not collapse. In Europe, Eurocode 1 is used as a reference. Where necessary, structural reinforcements will be required.



Waterproofing

In the past, some countries such as France had chosen «integrated» installations rather than «superimposed.» In this configuration, where the panels serve as roofing, a lot of water infiltration damage occurred in buildings due to a lack of waterproofing.

Historical installations are disappearing naturally, and this configuration has been abandoned in all new projects.



Summer tips

For some sites, the summer period goes hand in hand with a shutdown for general maintenance or even closure of sites. This is a critical period because the site is understaffed and subject to high-risk operations such as hot works which are managed by lots of subcontractors. In any case, it does not work in its usual configuration. Added to this, for a few years now, are heat waves, which have a demonstrated impact on the fire loss experience. Here are some tips for a quiet summer:

- Cut non-essential power
- Reduce the fire load in buildings (stock level, waste disposal)
- Move external storage of combustible materials away
- Preventative clearing of surroundings
- Firefighting facilities must remain operational, or the deployment of compensatory measures should be considered
- Ensure that fire water reserves are sufficient and usable
- Alarm reporting: adapt the alert chain (leave, presence in the day only, etc.).
- Adapt site monitoring: increase the number of rounds/appointment a night and weekend security guard, for example



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