

## Your roof is at stake

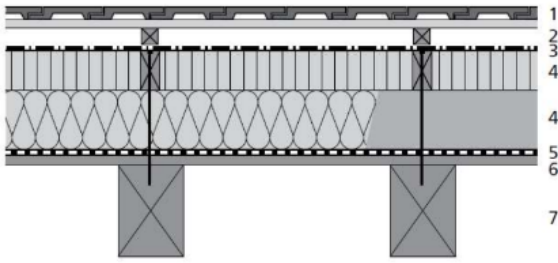
Today the whole (energy-) world is talking about photovoltaics and how easy we can use our roofs (steep and flat ones) in order to cover up our future energy consumption. All stakeholders along the process chain (local authorities, installer, electrician, energy supplier, administration and of course the customer itself) have smoothen their processes in order to be ready to deliver a “normal” project (which is a single detached house up to 10 kWp) within a couple of months.

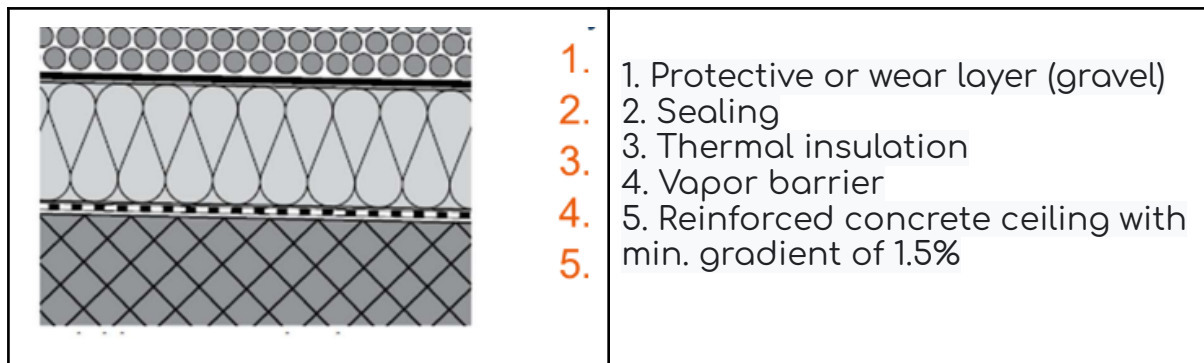
This is really cool and I am excited about it but the more I understand the process of installation the more I see the risks, especially for your ... roof. Yes! The roof is the crucial part of your house and therefore we need to have a closer look at it.

Basically a roof has the following functions:

1. **Protection** against nature (like sun, rain, hail, snow, wind or lightning)
2. **Dissipating** humidity from out- and inside
3. **Leading** the (rain) water to the ground
4. **Protection** against sound, vibrations and animals (e.g. birds)
5. **Giving atmosphere** for the residents

One can not imagine but even the sea level has an impact on the construction and on the material in use. It is a science for itself! Here we go for a little excursion in roof construction:

| Steep roof (insulation over rafters principle)                                      |                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ol style="list-style-type: none"><li>1. Roof covering (tiles)</li><li>2. Counter battens / Ventilation space</li><li>3. Under roof</li><li>4. Thermal insulation</li><li>5. Vapor barrier</li><li>6. Wooden formwork</li><li>7. Rafters</li></ol> |
| Flat roof (warm roof principle) → 90% of all flat roofs in CH                       |                                                                                                                                                                                                                                                    |



Without going through the details it is easy to understand that any impact on this construction can cause massive damage. I am not talking about things like broken tiles because they are easy to detect (you will have water in places it does not belong quickly after the next rain). But there are - depending on the type of installation (rooftop system vs. in-roof system) - installation failures your roof will never forget. Here the worst ones:

- Extra heat from the panels can weaken the roof in case the ventilation space is not sufficient → **heat buildup**
- Shadow, caused by the panels, will weaken the tiles over the years (tiles are made for weather exposure) and not for being covered → **moss covering**
- Damage on thermal insulation and / or vapor barrier allows the water to intrude the construction and the wood will be rotten over the time → **mold and rot**

All these alone or in combination will destroy the roof and damage your house. Of course, a roof lifecycle is - according to SIA - about 25 years. But more often a well constructed and maintained roof works properly for up to 40 years ... and more than these extra 15 years are now at stake because installers do not pay that much attention to the details and customers are not willing to go the extra mile (which is roof maintenance).

Therefore I call the photovoltaic initiative better "roof builder initiative" because in less than 20 years a vast amount of roofs need to be restored urgently. The reason is so simple: installers do not know much about the complexity of roofs.

### Here is my advice of the day

- **for clients:** Before you order a photovoltaic installation first let the roofer check your roof. This money is well invested and does not harm your purse in the long run.
- **for installers:** Clients who ignore this issue are the wrong clients.



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As an expert in **photovoltaics, heating systems and rainwater retention systems**. He knows all aspects about the technology in use and how to deliver a properly managed project.

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Zug, Mai 2024