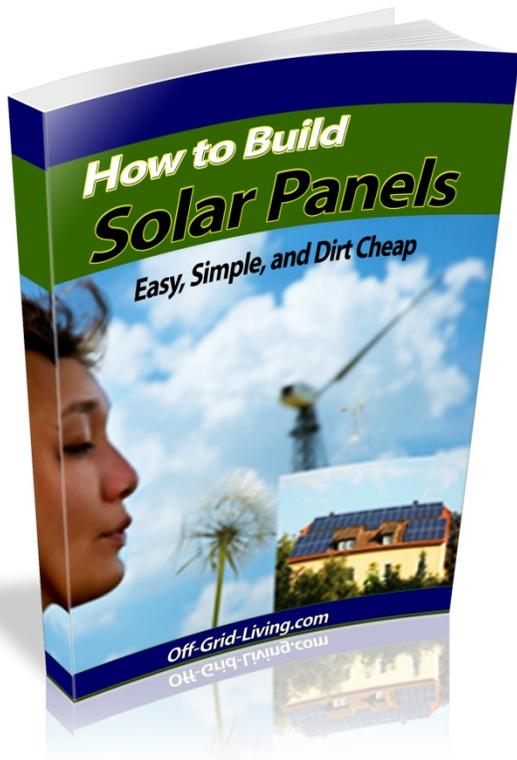


Off-Grid-Living

In An Urban and Suburban World



Lesson #18 ... Mounting your solar panels on the roof

The Disclaimers, Legal Stuff and Butt-Covering Section:

Before attempting to build a solar system for your entire house, take my course "Home Energy Made Easy" Go here: <http://Off-Grid-Living.com> I'll give it to you for free for being a member of this course. Understanding the concepts in that course will save \$1000's of dollars when you go to build your system.

This is but one small section of a complete action plan for building solar panels dirt cheap. Which is one small section of a course on going off the grid in Urban/Suburban America. You can learn how to

- Grow your own food year around, no matter where you live.
- Slash your energy and living expenses by 50% or more.
- Create your own fuel
- Finding economical shelter
- Alternative methods of (Legally) making money
- How to live anonymously

Check out <http://Off-Grid-Living.com>

NOTICE: You Have the Right Give This To Anyone You Want!

But You Can't Resell this Report for your own profit!

© Copyright 2008-2016 <http://Off-Grid-Living.com>

ALL RIGHTS RESERVED. Liability Disclaimer: By reading this document, you assume all risks associated with using the advice given below, with a full understanding that you, solely, are responsible for anything that may occur as a result of putting this information into action in any way, and regardless of your interpretation of the advice. You further agree that our company cannot be held responsible in any way for the success or failure of your enterprise as a result of the information presented below. It is your responsibility to conduct your own due diligence regarding the safe and successful operation of your enterprise if you intend to apply any of our information in any way to your operations.

In summary, you understand that we make absolutely no guarantees regarding the outcome as a result of applying this information, as well as the fact that you are solely responsible for the results of any action taken on your part as a result of this information.

Terms of Use, Personal-Usage License: Go ahead and copy it and give it away if you want. But don't sell it, don't chop it up, and don't change it.

How To Build Solar Panels

Introduction

This is David Sieg with off-grid-living.com and we are at the last formal chapter in this tutorial. I want to congratulate you on making it this far. Good job!

I had a number of misgivings with this chapter. One, to fully explain this topic I also needed to explain basic carpentry which seemed like a waste of time since you can find that for free all over the internet. Two, everyone's roof is different. Different slope angles, different materials, different climates, so how was I to cover it all?

Instead I decided to take a different approach. I'm not going to insult your intelligence. I'm going to assume you know basic carpentry, and I'm going to assume you know your own roof. If you don't know the answers to the above questions, then just google the question and you'll be knee deep in answers.

What I decided to do instead was give you a "Right Way" and "Wrong way" on how to correctly mount your solar panels.

In this manner you can see classic mistakes people make, as well as how to correct any mistakes you might make before making them. This is a moment when "Do it right the first time" really should be taken to heart. Your roof is an important part of your house. Untold problems are ahead if you don't mount your solar panels correctly.

So let's get started.

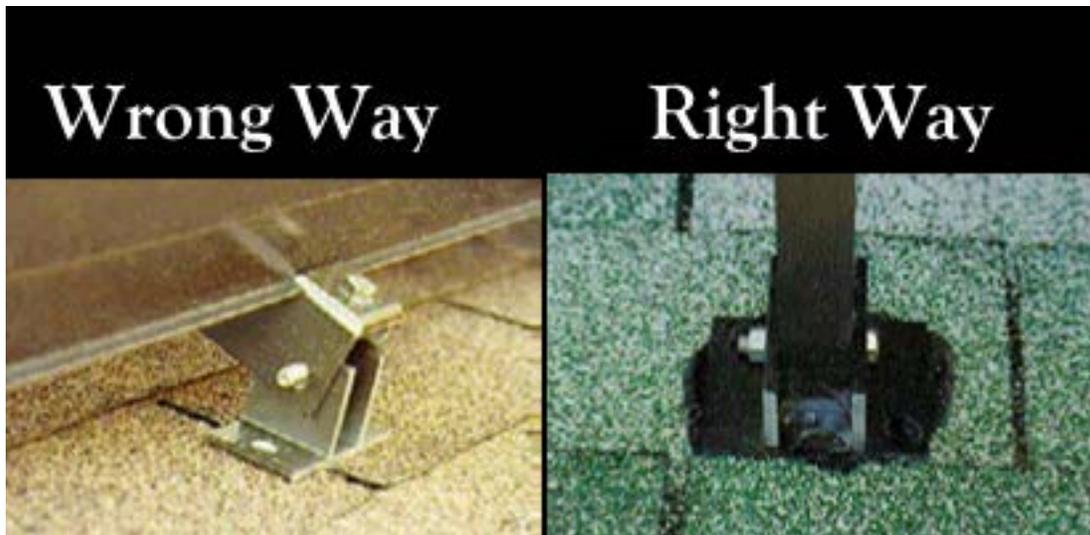


Always confirm that where you plan to mount your solar panels that the solar exposure is unobstructed. Shading is a critical flaw in a lot of installations.

How To Build Solar Panels

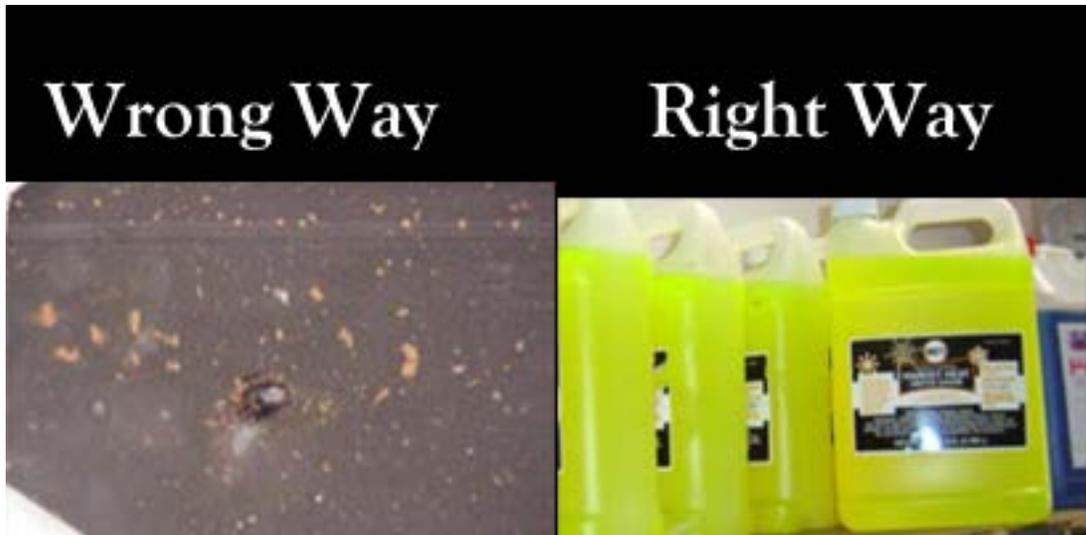


Efficient roof placement of your solar panels minimizes pipe runs and keeps pipes sloping downward. Keep pipe runs should be less than 20 feet if possible.

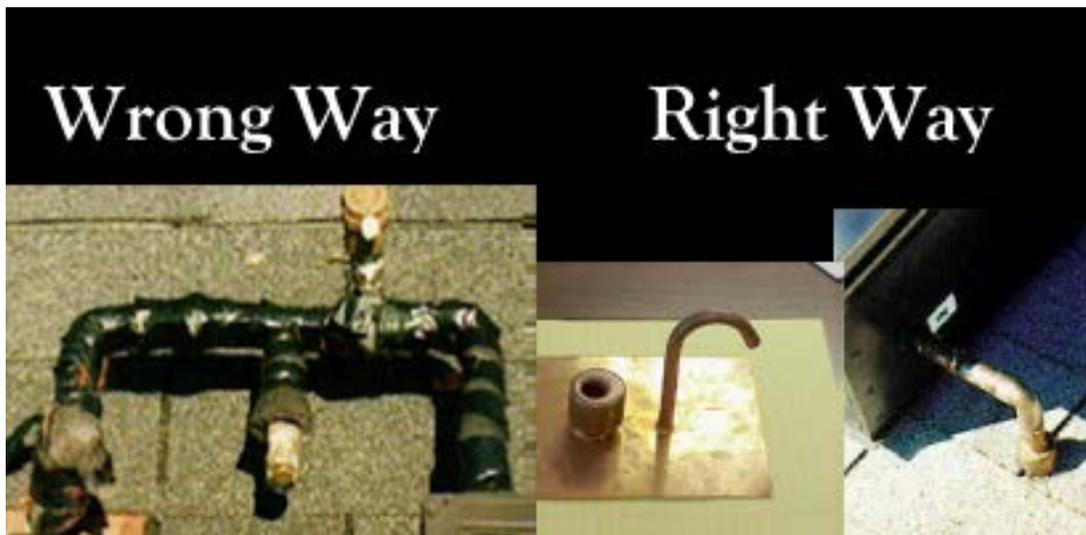


Bolts used in mounting must be secured and the mount must be sealed.

How To Build Solar Panels

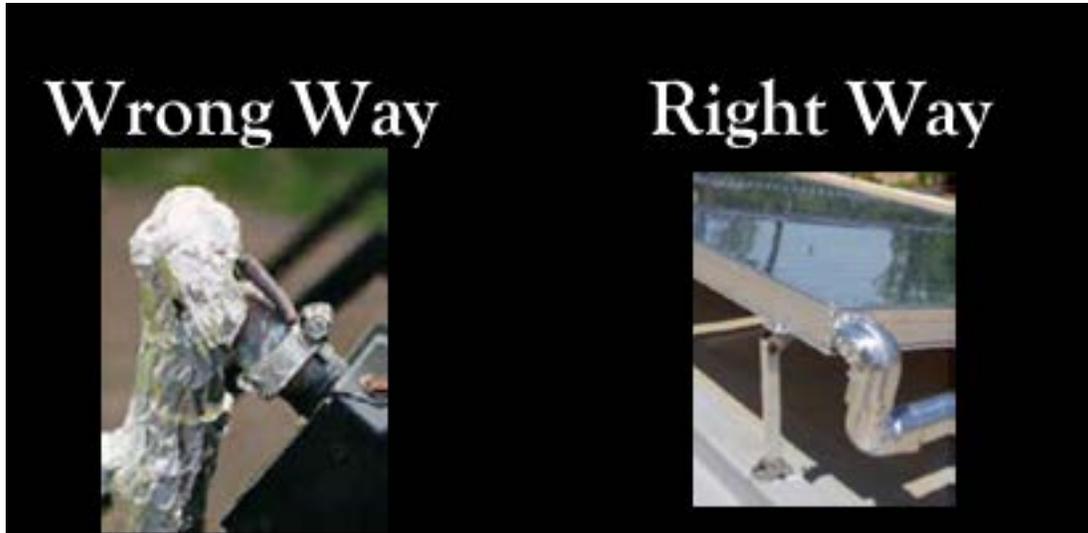


If local water is corrosive to copper, use treatments or indirect systems.

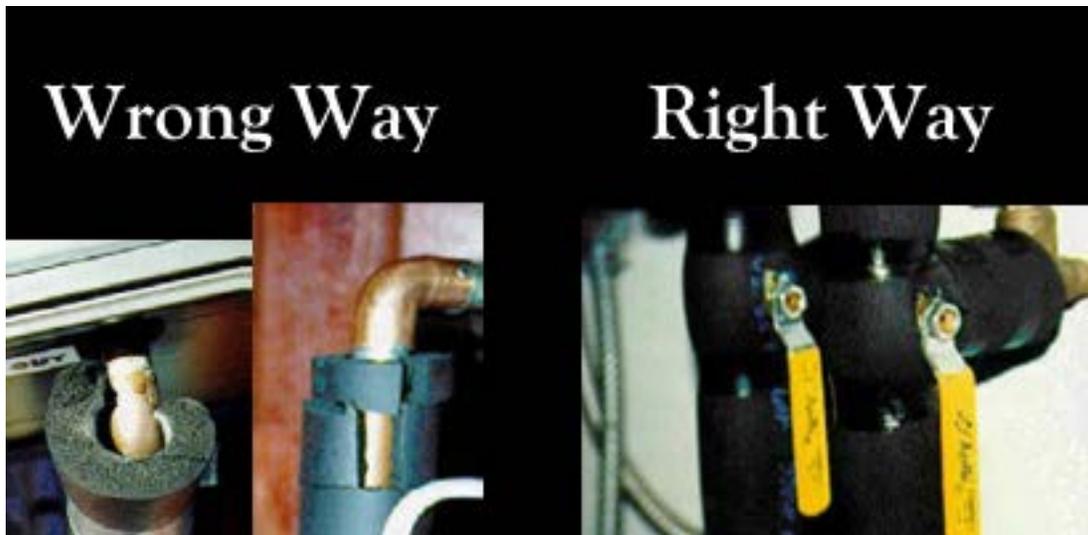


Roof penetrations must be properly flashed and sealed and racks properly bolted.

How To Build Solar Panels



All exposed wires, sensors, and insulation must be protected against ultraviolet sunlight and weather.



Insulation should be carefully applied to fit around corners, gauges, and valves.

How To Build Solar Panels



All wires exposed to the weather should be jacketed with PVC pipe, or aluminum, or painted.

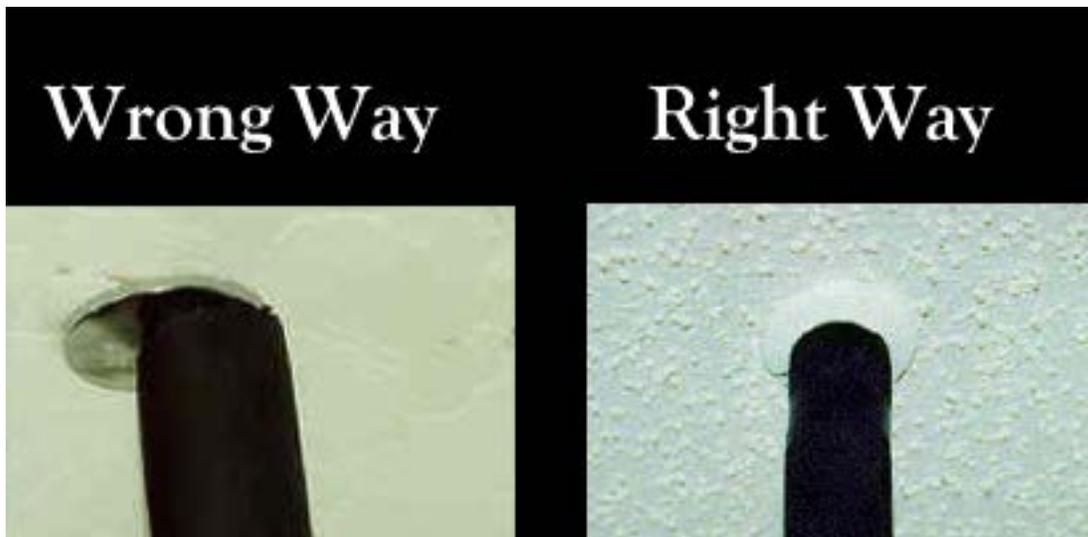


Install air vents in a true vertical position.

How To Build Solar Panels

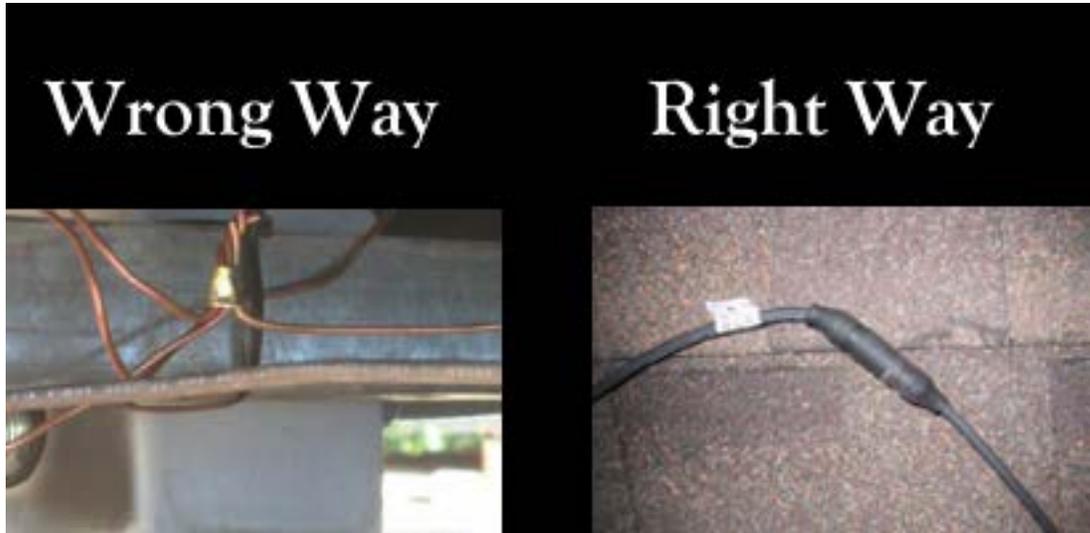


Attic wire penetrations must be secured. Insulation on right is glued and mitered. Note that insulation abuts roof decking and does not penetrate it. The hole through the deck must be caulked.

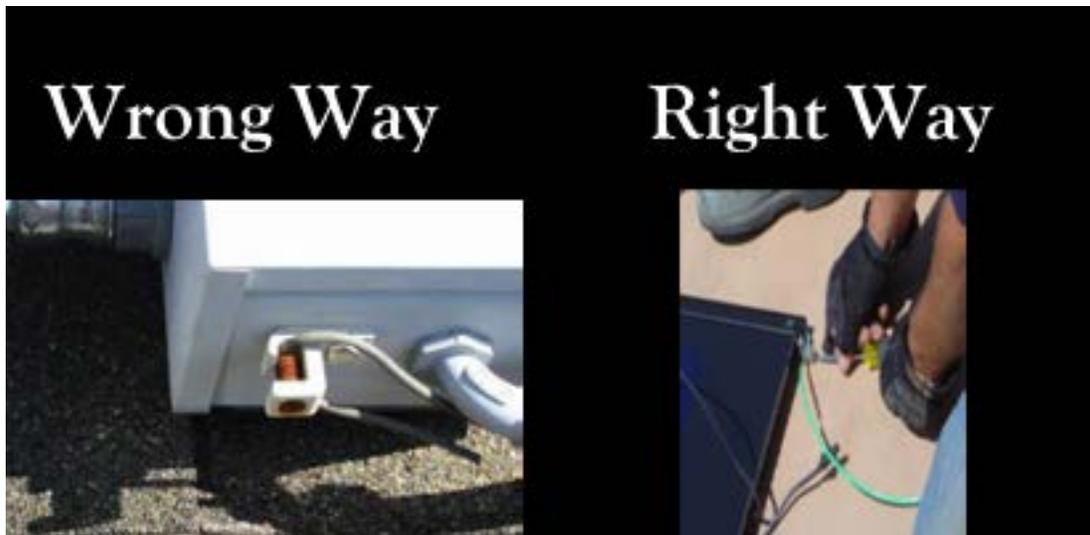


Seal and hide penetrations through interior ceilings and walls for fire protection and to block air leaks. In new construction, these types of penetrations should be minimal.

How To Build Solar Panels

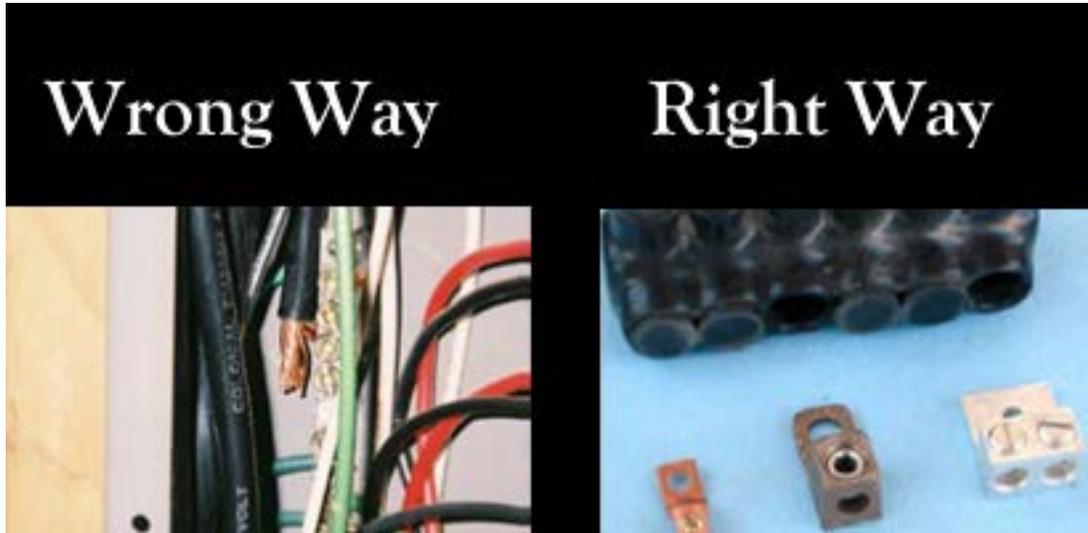


Wire connections must be properly installed. New "plug-and-play" wires systems help solve this problem.



Electrical materials (lugs, screws, wires) selection is critical for a safe and durable system. In the picture to the left, indoor rated materials were used for an outdoor grounding application.

How To Build Solar Panels



Materials must be properly installed. Wires must fit lugs. Use lugs listed for proper environment

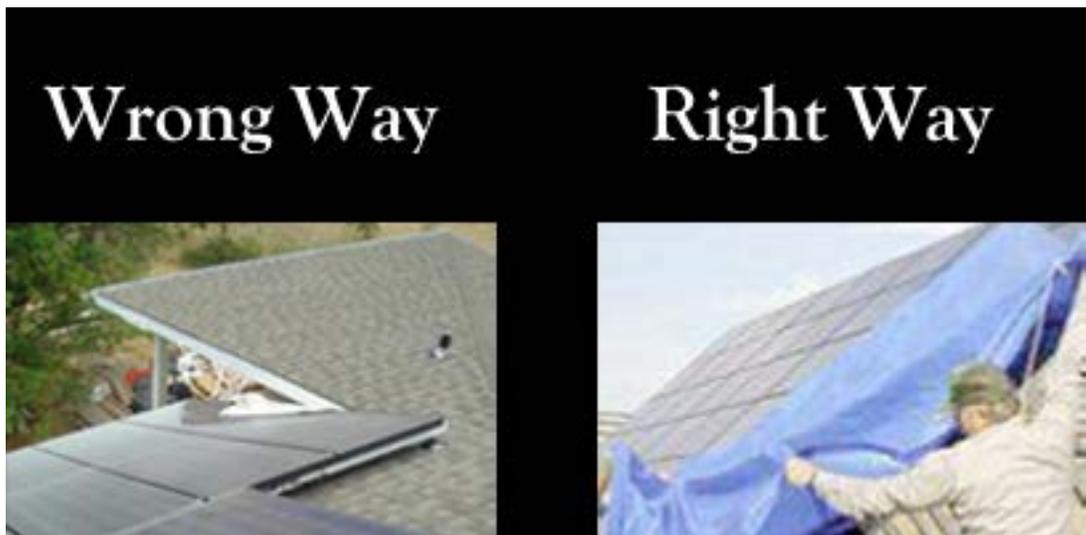


Testing as arrays are installed allows for isolating problem panels and troubleshooting the overall system. A non-functioning array might as well be constantly facing the night sky.

How To Build Solar Panels



Service providers must be able to disconnect each piece of serviceable equipment in the PV system, such as arrays and inverters. In simple systems there will be a DC disconnect between the modules and the inverters and an AC disconnect between the inverters and the panel. Components need to be placed in readily accessible locations.



Arrays must be protected from construction activities, including paint overspray.

As always if you're unsure of how something works or is installed, you should get professional advice before continuing.

So that's it. We've reached the end. I've enjoyed creating this tutorial. I hope you've gotten something out of it. Please take the time and rate this course. I always welcome suggestions on how to better the course as well.

How To Build Solar Panels

I wish you the best of luck in building your solar panels as well as going off the grid. Many of us think it's time to unplug from the current system and start creating localized solutions not only for energy, but food and social services as well. It's time to move away from the corporate control of our food and energy. If you agree, come visit me at www.off-grid-living.com and learn how to live off the grid in urban and suburban America.

PS...Don't forget you can get personalized coaching at Off-Grid-Living.com/ For some this is the ideal way to get hands on experience as well as personal attention needed to make this work for you.

Coming Up Next ...

Lesson #19: "Buying ready-made solar panels"

The next lesson is a print out you can use to decide if building or buying solar panels is right for you.