Module PV Panel Construction

Test 1

Name the 6 major components of a PV panel.

* Glass top
* Cells
* Encapsulant
* Backing
* Junction Box
* Aluminum Frame

Define transmittance.

The percentage of light that goes through an object.

The glass used for PV panels has less of this in it.

Iron

What percentage of extra light comes through the glass compared to normal glass?

5%

Approximately how many times stronger is the PV glass compared to normal glass?

4 times

The heating and cool process for the PV glass makes what kind of glass?

Tempered glass

Besides being stronger, what other advantage is tempered glass?

Keeps together when broken

What are the two directions of force manufacturers list?

Front and back

What layer holds the cells together?

Encapsulant

How many layers of encapsulant are there?

Two

What type of panel has a glass backing?

Bi-Facial

The junction box houses what two components?

Wire leads and By-pass diodes

What is the most popular type of connector found on PV panels?

MC-4 connector

Name 3 features of the MC-4 connector.

Lockable

Waterproof

Unique to the solar industry

The MC-4 connectors can be opened under load?

No

When Aluminum is exposed to oxygen what is formed?

Aluminum oxide film

To keep the a Aluminum frame from oxidating what is done to the frame?

Anodized

Are the Aluminum frames conductive electrically from the outside?

No

To make the Aluminum frames bondable, what needs to happen?

The outer coating needs to be pierced.

What is the best material to bond with the Aluminum frame?

Stainless Steel

What does WEEB stand for?

Washer Electrical Equipment Bonding

How many times can the WEEB be used?

Once