First Solar

PV PACKAGING INSTRUCTIONS FOR RECYCLING & VALUE RECOVERY

Follow this guide to safely prepare your First Solar panels for shipping and protect their value

SOLAR WASTE SOLUTIONS
VALUE RECOVERY EXPERTS

WELCOME

Thank you for taking the important steps to recycle your solar modules safely. At Solar eWaste Solutions, safety is paramount. To protect everyone involved in loading and unloading end-of-life solar panels, it's essential to load panels in a way that minimizes exposure to hazards like broken glass, sharp edges, tipping risks, and shifting during transit. Please use the following steps as a guide for secure packaging. For questions or specific requests, reach out to Solar eWaste Solutions.

Ideally, replicate the original manufacturer's packaging and loading method. If adjustments are necessary, consult your Solar eWaste Solutions representative for guidance.

STEP ONE

GATHER THE RIGHT MATERIALS

To package your First Solar panels to preserve their reusability and recyclability, you will need the following items before you can start stacking, strapping, and loading your panels.

- PALLETS - Good, sturdy panels with standard dimensions
- STRAPS - Nylon or polyester
- WRAP - Commercial shrink wrap
- LABELS - Found at the end of this document
- EQUIPMENT - A forklift or skid steer and pallet jack for loading the truck

STEP TWO

STACK PALLETS NEATLY

Use sound pallets with standard dimensions.

To optimize the number of panels transported per truck, double stacking is often necessary. Below are the details regarding the Original Manufacturer's pallet specifications, dimensions, and packaging density:

Series	Description	Weight (lb.)	Modules / Pallet	Pallet Weight (lb.)	Pallets/ Truck	Total Modules/Truck	Pallet/Packing Dimensions (inches)		
							L	W	H
Series 4	Frameless	26	50	1,466	32	1,600	54"	44.4"	34.8"
Series 6	Aluminum Frame	76	27	2,276	18	486	86.4"	51.6"	45.6"
Series 7	Frameless with steel back rails	88	46	4,461	10	460	90"	48"	

Frameless Series 2, 3 & 4 Panels

If the original packaging for First Solar Series 2 and 4 panels is unavailable, an alternative packing method is outlined below. First Solar Series 4 panels can be stacked flat on a standard Series 6 or similar pallet. Up to three stacks of 40 panels can be arranged side by side, accommodating a total of 120 panels per pallet. To ensure stability, alternate the orientation of the panel junction boxes, stacking panels glass-to-glass and junction box-to-junction box. Use at least five straps to secure the pallet and prevent movement during transit.

Stacking Series 6 and 6+ Panels

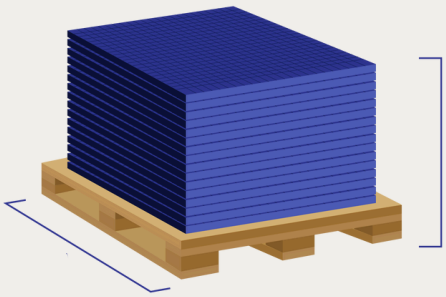
Panels from the First Solar Series 6 and 6+ lines should be placed on pallets with the glass side facing upward. This arrangement helps prevent water accumulation, which could increase pallet weight and create transport or recycling challenges. Each pallet should hold 27 panels oriented glass side up.

Frameless Series 7 Panels

When original OEM crate packaging is unavailable, First Solar Series 7 panels can be stacked flat on pallets by alternating their orientation, placing them glass-to-glass and rail-to-rail. A stack of 40 panels should be secured with at least four straps and heavy-duty shrink wrap. To prevent damage, use spacers made from 2x4 lumber or similar materials to distribute pressure and avoid glass breakage from straps. This method requires transport in a dry van, and loading will need to be performed with a pallet jack or equivalent equipment.

Group broken glass panels and panels of similar sizes on the same pallet.

Place broken glass panels on pallets separate from those with intact glass. Ensure that only one type of panel is stacked on each pallet.



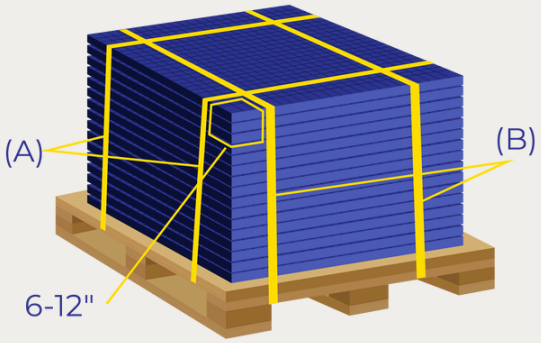
Please note: Failure to follow the specifications outlined in this manual may result in additional handling and/or freight charges.

Solar eWaste Solutions reserves the right to apply any commercially reasonable fees if these specifications are not met.

STEP THREE

STRAP & SECURE PANELS TO PALLETS

Secure the First Solar panels to the pallet using nylon or PET straps

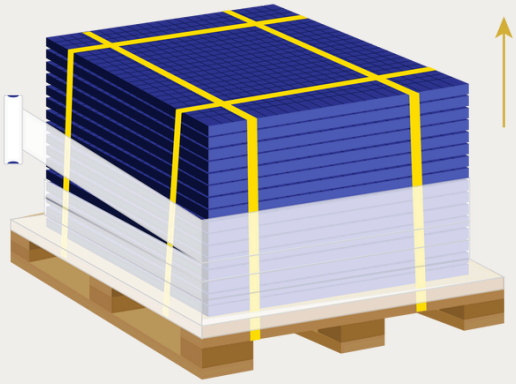


Ensure the straps hold the panels and pallet firmly in place to prevent further damage. For steel straps, two to three are typically adequate when using original packaging. For nylon straps, six or more are generally required. In certain cases, such as with First Solar Series 7 panels, use spacers made from 2x4 lumber or similar materials to distribute pressure and avoid additional damage or glass breakage evenly. Take care not to strap in a way that obstructs the forks of pallet jacks or forklifts.

STEP FOUR

WRAP BROKEN MODULES

If the First Solar module glass is broken, the entire pallet should be wrapped using commercial shrink wrap.



If the glass on the First Solar panels is significantly damaged and at risk of falling from the stack, wrapping is mandatory to prevent the glass from spilling during transport. However, if the broken glass remains securely contained within the stack, wrapping is not needed. Wrapping the stack is essential for panels with severe damage, such as torn back sheets or laminates, missing frames, or loose glass debris. Cover the entire pallet from bottom to top with multiple layers of heavy-duty shrink wrap, and secure the loose end of the wrap firmly with packing tape or similar material to prevent it from unraveling during transit.

Please note: Certain projects may require a customized load plan. If a site-specific load plan is provided, be sure to follow the instructions outlined in that plan carefully.

STEP FIVE

LABEL YOUR PALLETS

Print and adhere labels to each pallet.

A dedicated truck will be used for most collections, so pallet labeling is not required. However, if the load is only a partial truckload and additional pickups are planned, labeling each pallet becomes necessary. A label template is included at the end of this document. Complete all required fields, print the labels, and attach at least one label to each pallet.

STEP SIX

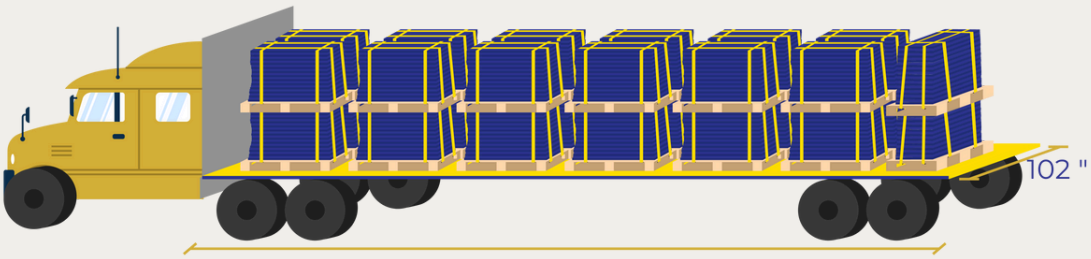
LOAD YOUR PALLETS

Print and adhere labels to each pallet.

Pallets should be arranged to ensure easy access for a pallet jack or forklift. To prevent tipping or damage to the lower stack, place a layer of cardboard or plywood between the stacked pallets. Ensure there is adequate space between pallets to facilitate efficient loading and unloading.

The following pallet capacities apply for each truck:

- FSLR S4: 12 pallets with 120 panels, single stacked.
- FSLR S6: 18 pallets with 27 panels, partially double stacked.
- FSLR S7: 12 pallets with 40 panels, single stacked.

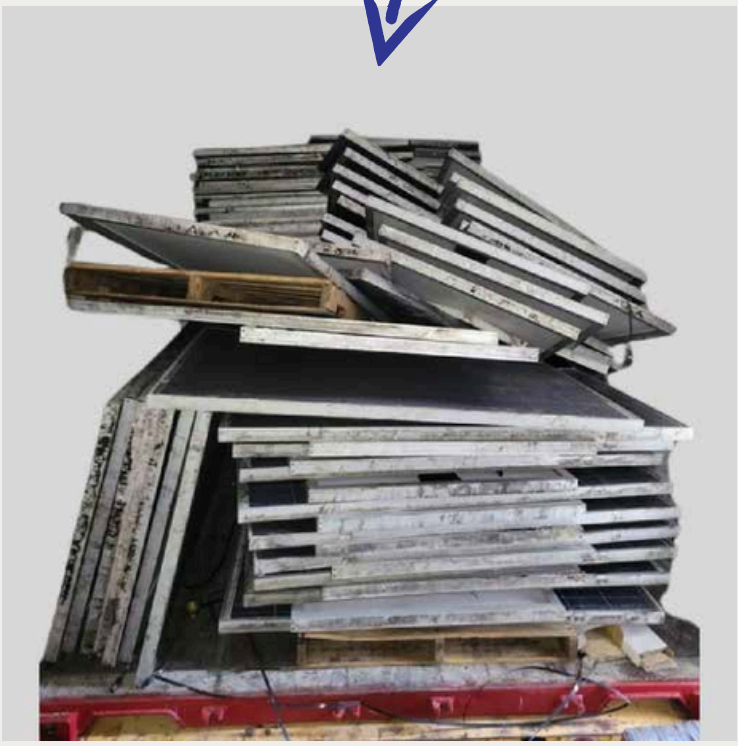


Standard 53' **flatbed trailer**

DO THIS

- Select pallets that are the correct size and in good condition; do not use cracked or damaged pallets.
- Separate modules with broken glass from those with intact glass.
- Secure the modules to the pallet using straps.
- Insert cardboard or other protective materials between double-stacked pallets.

NOT THAT



- Mix panel sizes with larger panels placed on top
- Panels not centered on the pallet
- Place broken and intact glass modules on the same pallet
- Loose straps obstructing forklift access
- Use fewer than four straps to secure the load
  Use damaged or unstable pallets
- Stack pallets more than two high or above 51 inches
- Not use protective material between stacked pallets
- Inconsistently load truck, leaving large gaps between pallets or pallets placed too closely together/touching

Pallet #	
Module Quantity	
Broken Glass (Yes/No)	

Customer Order Number	

Module Manufacturer	Model Number