



STANDARD OPERATING PROCEDURES

PVpallet Series X



Overview & User Instructions

PVpallet Series X (PVP000031) is a stackable, collapsible, adjustable pallet with walls on the 48" side for increased load protection. These robust pallets are made from post-industrial HDPE and are ideal for shipping and storing solar modules in a sustainable way.

SPECIFICATIONS

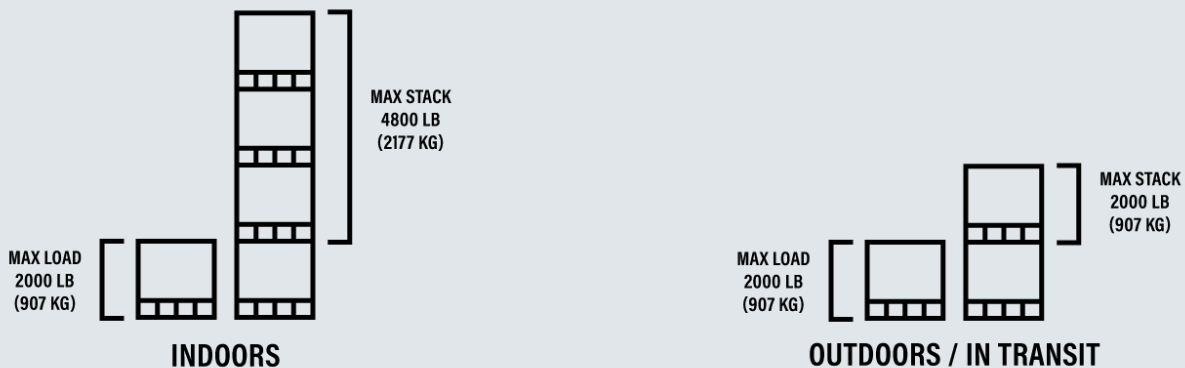
- ▶ **Exterior Dimensions (L x W x H):** 90" x 48" x 50.1", collapsed height: 10.5"
- ▶ **Maximum Interior Dimensions (L x W x H):** 83.5" x 44.8" x 42.2"*
- ▶ **Minimum Interior Dimensions (L x W x H):** 63.5" x 44.8" x 42.2"*
- ▶ **Side Wall Dimensions (L x W x H):** 44.9" x 3.25" x 42.2"
- ▶ **Total Pallet Weight:** 314 lb total (Wall: 53 lb, Base: 208 lb)
- ▶ **Module Capacity:** 32 (35 mm), 27 (40 mm)
- ▶ **Max Load Capacity:** 2,000 lb** (see stacking parameters below)

SHIPPING

- ▶ **53' Trailer Quantity:** 26 erect (13 stacks of 2 pallets), 130 collapsed (13 stacks of 10 pallets)

STACKING

- ▶ **Max Total Cargo Weight Stacked Above Base Pallet—Indoor:** 4,800 lb, max 4-high stack**
- ▶ **Max Total Cargo Weight Stacked Above Base Pallet—Outdoor:** 2,000 lb, max 2-high stack**



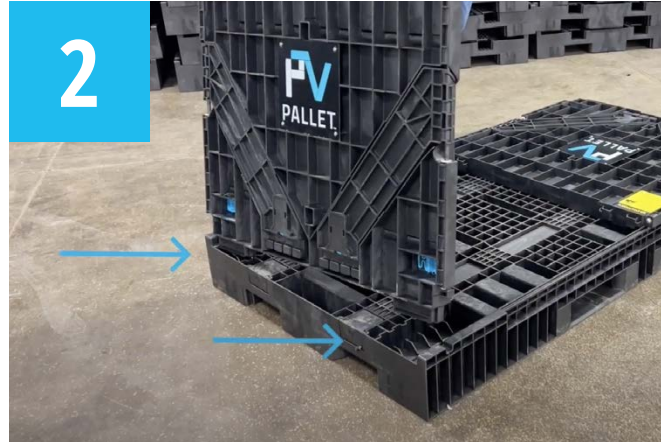
*Side walls adjustable in 2" (50.8 mm) increments. Dimensions may vary in extreme temperatures.

**As all products can have unique loading patterns and shifting characteristics, PVpallet recommends that customers perform their own load capacity testing. PVpallet's standard is to target and test to the maximum weight limits as shown here. PVpallet does not warrant that all loads will perform the same as lab testing.

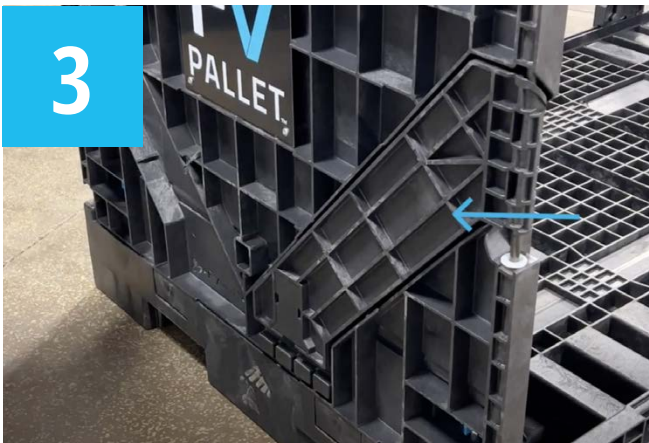
Erecting PVpallet Series X



- ▶ Release the sidewall from the base by compressing either latch and sliding the wall toward you.



- ▶ Lift the sidewall and place it into the preferred base post pockets.
- ▶ 6 slot options allow you to adjust the wall in 2" increments to better fit the length of your cargo.



- ▶ Remove the cross brace from the sidewall and lower it into position.

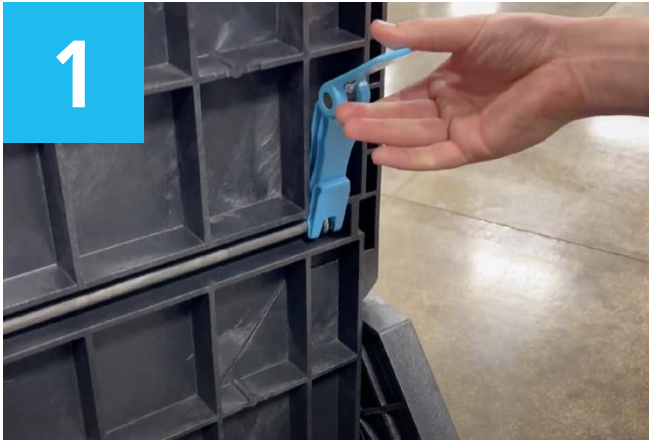


- ▶ Slam the slam latch to secure the cross brace to the base. **Engage all brace arms before moving or stacking.**
- ▶ Zip ties may be used for added security.

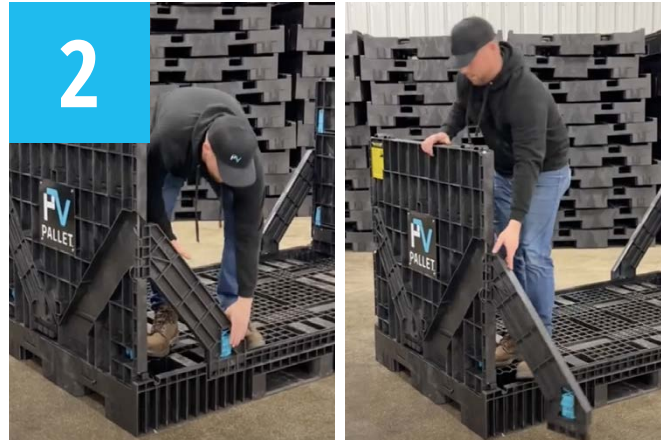
IMPORTANT: Inspect entire unit before and after each use. Look for missing/damaged/disengaged latches or any fractures in the pallet itself. If any damage is noted, the pallet **SHOULD NOT BE USED**. All features are involved in the proper function of the pallet, so any damage compromises its use. Make sure post pockets, sidewall posts, and cross brace latches are free of debris to ensure the sidewalls are fully secured into the base. **Never open cross braces while PVpallet Series X Units are stacked. Serious injury or death could result.**

Collapsing PVpallet Series X

Series X pallets collapse down to 1/5 of their original height. Collapsed pallets with nested walls can be stacked 20+ high.



- ▶ Ensure all slider handles are securely nested in the wall prior to collapsing the unit.



- ▶ Disengage the cross braces by releasing the blue slam latch.
- ▶ Rotate cross brace arm around 180 degrees, then lift slightly before rotating the remaining 90 degrees.



- ▶ Lift wall until the posts clear the base wall pockets.



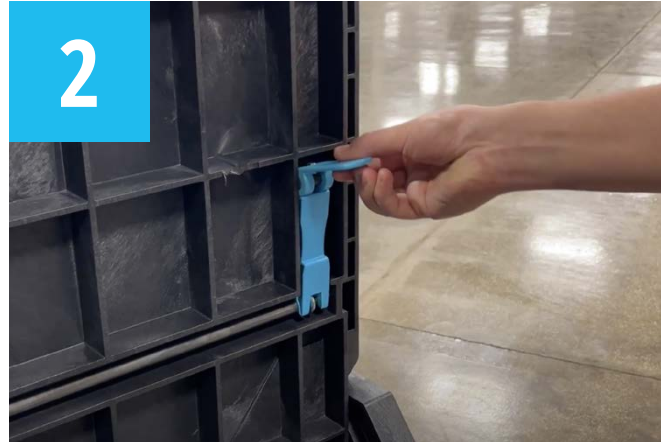
- ▶ Gently lay the side walls on the base.
- ▶ Move the wall until it nests securely in the base and the wall latch locks the wall in place.

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Using the Load Management System “Slider Handles”



- ▶ Four slider handles are located in each wall to aid with load management.



- ▶ Remove the handle from its stowed position by lifting the front lever, then pulling slightly toward you.



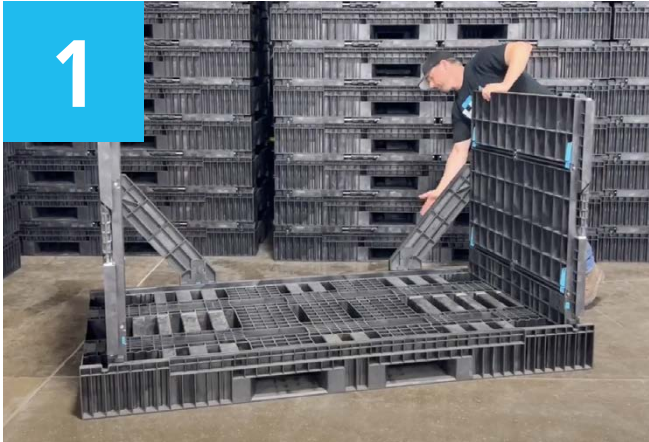
- ▶ Slide the handle along the rod to desire position.
- ▶ TIP: Use the vertical lines in the wall to align top and bottom handles.



- ▶ Lock the handle in place by squeezing the front lever back towards the handle.

IMPORTANT: Slider handles are NOT designed to be the primary means of load securement. The load management system is meant to aid in handling solar panels during loading and unloading. Always follow banding recommendations for load securement. In the event that the slider handles become loose, use 7/16” socket wrench to tighten.

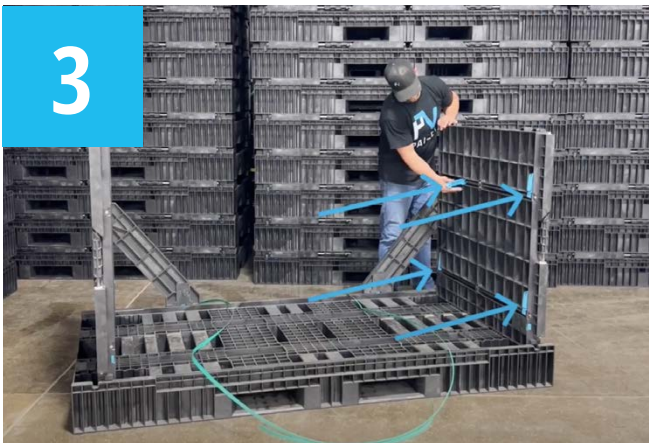
Loading Solar Modules



- ▶ Before loading your Series X, lock the two cross braces firmly in place on one side of the pallet.



- ▶ Lay out two bands used for vertical banding that your modules will rest on.



- ▶ Move the slider handles to the desired position.
- ▶ TIP: Slider handles are not needed for full loads.



- ▶ Load modules.
- ▶ Use remaining slider handles to position modules prior to banding.

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Banding Loads for Transit

Following banding recommendations is essential to protecting your solar modules during transit. The modules must first be cubed using two horizontal and two vertical bands, then secured to the pallet base with two vertical bands—one in each fork pocket.



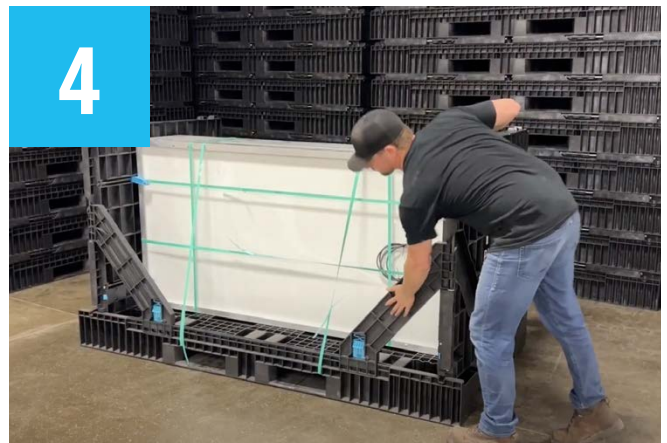
▶ First unitize the load with the vertical bands laid out prior to loading the modules.



▶ Then add two horizontal bands.



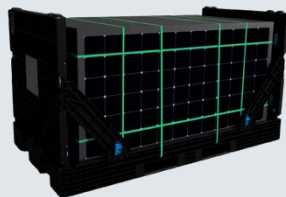
▶ Finally, add two vertical bands—one through each fork pocket. Keep banding to the side of the fork pocket to limit abrasion from forklift tines.



▶ Once banding is complete, secure the other two cross braces.

FINAL BANDING:

Cube modules with two horizontal and two vertical bands, then secure modules to base with two bands—one through each fork pocket.



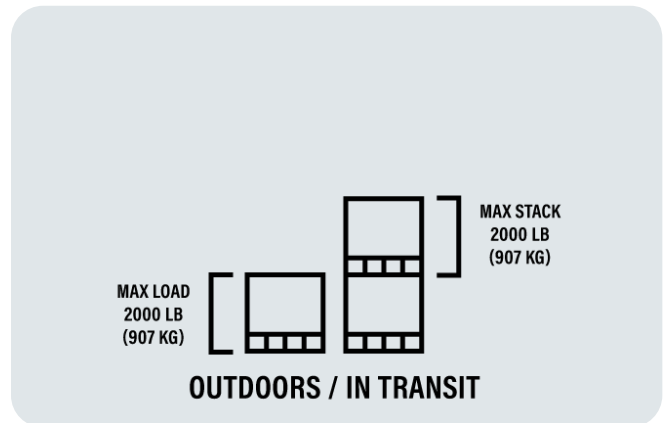
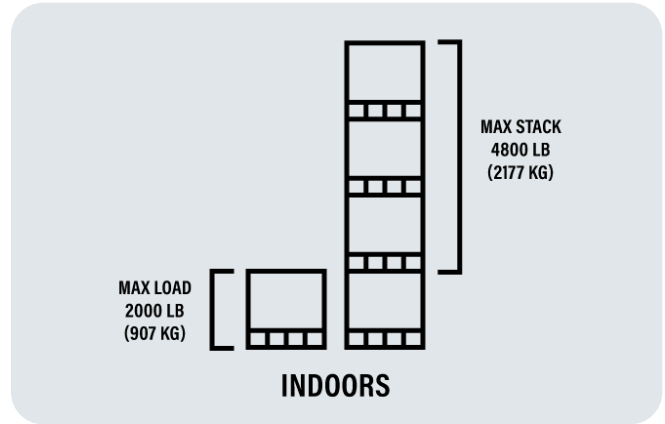
BANDING A 2-HIGH STACK:

X banding across upper Series X sidewalls and through lower Series X fork pockets.

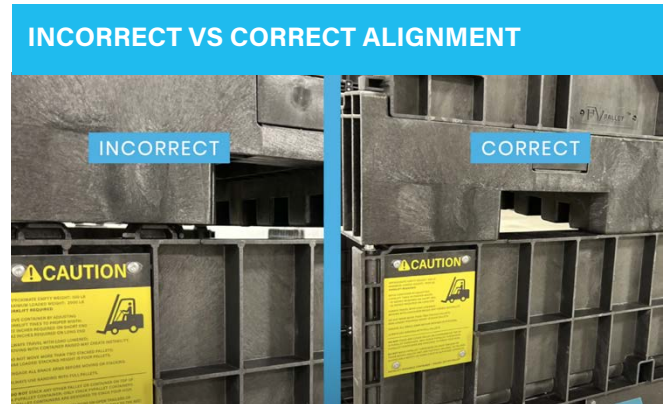


Stacking Pallets

- ▶ Series X pallets can be stacked up to four (4) high in a **warehouse environment**. The bottom PVpallet sidewalls can hold a maximum cargo load of 4,800 lb divided between three (3) pallets (see illustration below for clarity).*
- ▶ Stacking is limited to two (2) high **outdoors** and in transit with a maximum of 2,000 lb cargo stacked on the bottom pallet.*
- ▶ **Cross braces must be engaged at all times when stacking and moving erected pallets.**
- ▶ Ensure pallets are stacked on a level surface and are properly aligned.
- ▶ Do not move more than two stacked PVpallet Series X units at a time. Two-stacked pallets must be banded together when moving.
- ▶ Always follow the guidelines outlined below. Incorrectly stacking pallets increases the risk of damage to your solar modules and compromises the safety of personnel.



- ▶ When stacking, ensure the fingers at the top of the wall are securely nested into the bottom of the top pallet.



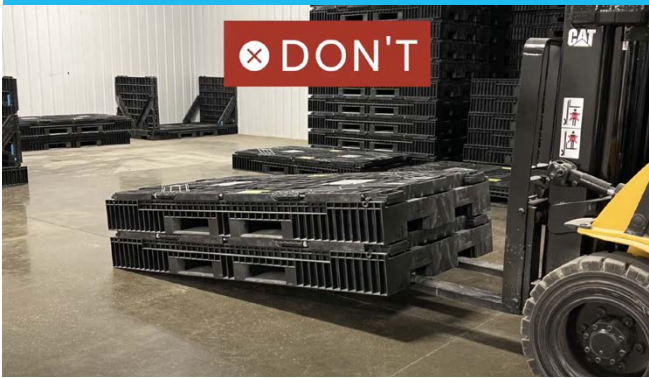
- ▶ Improperly stacked pallets will have a visible gap between the top pallet and the bottom pallet.
- ▶ When stacked correctly, the top pallet will be flush against the sidewalls of the bottom pallet.

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Forklift Driver Tips for Stacking Series X Pallets

Series X pallets are designed to stack on one another relatively easily with practice. Follow the guidelines below to prevent damage to your pallet and ensure personnel safety.

ALWAYS USE FORK EXTENSIONS ON 48" SIDE



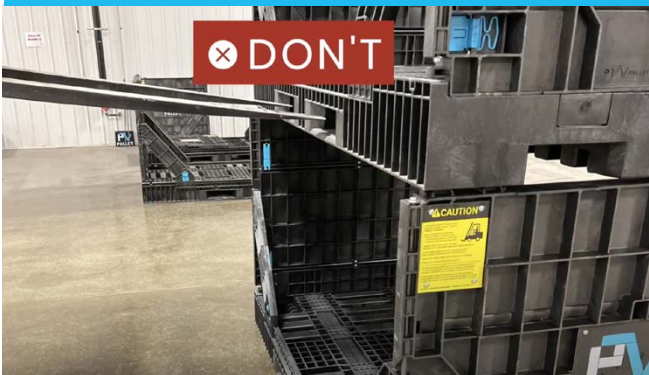
- ▶ Don't use standard 42" fork tines on the 48" side.
- ▶ To ensure proper support, always use fork extensions (72" minimum) when lifting from the 48" side.

DON'T PUSH PALLETS WITH FORKLIFT



- ▶ Don't push, rotate, or "ram" pallets with forklift tines; this could result in structural damage.
- ▶ Instead, move pallets by properly inserting forks into the fork pockets.

DON'T ANGLE FORK LIFT TINES



- ▶ Never enter at an angle that is too high or too low. Avoid angles and lifting under pocket bridges.
- ▶ Fully insert forks before lifting and stacking pallets
- ▶ Always keep tines level with the pallet base.

FOLLOW PROPER STACKING INSTRUCTIONS

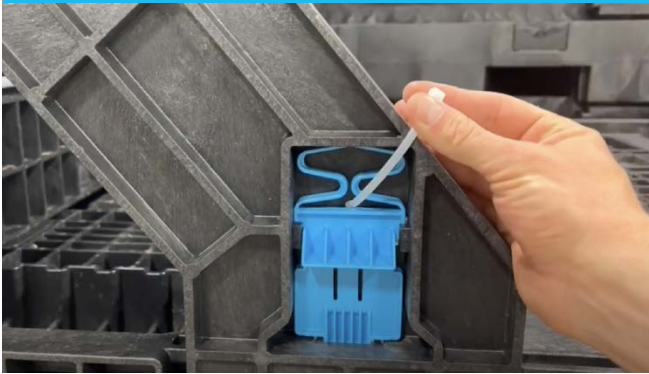


- ▶ Make sure pallets are properly nested when stacking.
- ▶ Always follow stacking weight and height limitations outlined in Stacking Pallets section.

Additional Tips

BOS Bulk Bins are designed to stack on one another relatively easily with practice. There is plenty of clearance in the fit so the forklift operator does not need to be extra precise. It takes some initial practice to see which technique feels best but it will be natural within a few days.

LOCKING CROSS BRACES



- ▶ For added safety or security purposes, the cross braces can be locked with a zip tie.
- ▶ Simply insert zip tie into the hole on the cross brace located just above the slam latch.

REPLACING SLAM LATCHES



- ▶ The blue slam latches on the cross braces may need to be replaced on occasion.
- ▶ Simply insert the spring portion of the latch first, push up to compress the spring, then push it in until it clicks.

TIGHTENING LOOSE SLIDER HANDLES



- ▶ If slider handle becomes loose, tighten the bolt on the handle with a 7/16" socket wrench until the slider handle can firmly lock in place
- ▶ Slider handles should **NOT** be used as the primary means of load securement; always follow banding recommendations to secure load.

!! IMPORTANT !!



- ▶ **Never open cross braces while Series X pallets are stacked. Serious injury or death could result.**
- ▶ Cross braces are essential to the structural integrity of the unit.

Final Product Notes & Reminders

- ▶ Series X pallets should not be stacked more than 4 high in the warehouse and 2 high outside.
- ▶ As all products can have unique loading patterns and shifting characteristics, PVpallet recommends that customers perform their own load capacity testing. PVpallet's standard is to target and test to the maximum weight limits as shown in the specifications. PVpallet does not warrant that all loads will perform the same as lab testing.
- ▶ Always follow banding requirements for transit.
- ▶ Series X pallets are not affected by water exposure.
- ▶ If exposed to U.V., the color will degrade well before the plastic starts losing its properties; discoloration does not mean lessened performance.
- ▶ If stored outside, make sure Series X pallets are clean and free of any debris/dirt that would impede the movement and proper engagement of the moving parts.

DAMAGE STATEMENT

If any damage is visible, the pallet should not be used. Using a damaged product can pose serious risks, including potential injury or harm. Inspect each unit carefully before use and discontinue using the product immediately if you observe any of the following:

- ▶ Cracks, dents, or visible structural damage.
- ▶ Malfunctioning or warped components or parts.
- ▶ Loose brace arms or walls.
- ▶ Faded or illegible safety labels and instructions (when applicable).

Questions?

If you have questions or further need assistance, we're here to help. Below are some resources to ensure you get the most out of your product.

CONTACT US

▶ **Phone:** (877) 787-2553

▶ **Email:** support@pvpallet.com

USER VIDEOS

▶ **Instructions:** pvpallet.com/instructions

▶ **YouTube:** [@pvpallet](https://www.youtube.com/@pvpallet)

ACKNOWLEDGEMENT OF TRAINING

I _____ (trainer full name) acknowledge that I received training on _____ product(s) by a PVpallet representative on _____ (date).

All items listed in this document were discussed during training and I take responsibility for training future users on safety and best practices for using PVpallet products.

Signature of Trainer: _____

Signature of PVpallet Representative: _____