

# General Instructions for Secure Shipping of Framed Solar Modules



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Do not stack more than 20 modules on top of each other. Secure shipping is not ensured with a larger number.

The size of the pallet has to be at least the size of the modules, never smaller.

## 1. List of Materials needed for Packaging of 20 Solar Modules

- 1 pallet at least the size of the modules
- 4 module corners fixed (screwed) to the pallet
- 4 cardboard corners at least the height of the stack of solar modules
- 1 roll of packaging tape
- 5 tensioning straps (+1 reserve)

## 2. Ideal Packaging Method

- 1) Stack the modules horizontal with face up on a sufficient sized pallet, with the module corners already fixed. (Figure 1 and Figure 2)



Figure 1: Fixed module corners



Figure 2: Prepared pallet and packaging material

- 2) Clamp the cardboard corners between the bottom module and the module corners. (Figure 3)



Figure 3: Pallet with module corners, cardboard corners and the bottom module

- 3) Tightly wrap the packaging film around the module and the cardboard corners.

- 4) Wrap a tension strap around the stack of modules. The strap should be placed horizontally and in the middle of the stack. Tighten the tension strap. (Figure 4)



Figure 4: Horizontal tension strap

- 5) Two tension straps are placed at the **long side** of the modules. The straps are as close as possible to the corners of the modules.
- 6) Two tension straps are placed at the **short side** of the modules. The straps are as close as possible to the corners of the modules.



Figure 5: Straps at the long and short side of the module, close to the corners