Architectural Ultra High Performance Concrete (A|UHPC®)

TAKTL® is an advanced Architectural Ultra High Performance Concrete (A|UHPC) that is over four times as strong as traditional precast concrete and performs exceptionally well in demanding conditions. The key to TAKTL's strength is the carefully calibrated ratio of engineered ingredients and a mixing sequence that tightly packs molecules together and creates very strong bonds. TAKTL panels are reinforced with Alkali Resistant (AR) Glass Fiber and two layers of AR Glass Fiber Mesh. Panels are cast utilizing a proprietary, automated production process into molds that yield an intrinsic pattern and color. Additional surface finishes available include mediablasting, decorative aggregate, and opaque sealer.

Although highly durable, TAKTL panels are susceptible to irreversible damage if stored or handled improperly. This TAKTL Field Guide details approved procedures for handling, processing, and installing TAKTL panels in order to achieve a successful project. Per the TAKTL Terms + Conditions of Sale (Doc. L-2), the purchaser is responsible for following these directions in order to keep warranty benefits intact. Improper storage or handling will result in product damage that is not covered by the TAKTL Limited Product Warranty.

Technical Assistance, Installer Training, and Field Support

Our knowledgeable staff is available to provide support before and during the installation process. Your TAKTL Project Manager is the primary point of contact for all project related communications, but you can also call the main line at any time with project-related questions: 412-486-1600.

First-time installers are encouraged to visit our manufacturing facility in Pennsylvania to talk through the logistics of a project and receive training on field processing, installation, and proper storage protocols. If you would like to set up a visit to our facility, please do so through your Project Manager or Sales Representative.

TAKTL personnel make field visits regularly to provide support, review material, and ensure storage and handling procedures are being followed. Depending on the size of a project TAKTL will proactively schedule one or more site visits during the installation process. Clients can also request a site visit if additional training, technical assistance, or material review is required. Site visits can be requested through your TAKTL Project Manager.

Customer Satisfaction

Exceeding customer expectations is our goal on every project. To report a problem with material or service following the arrival of TAKTL panels to your project location, please provide a description of the problem to your TAKTL Project Manager. When the problem relates to product quality or conformance, please submit a TAKTL Customer Claim Form (Doc. Q6-1) to the Project Manager and be prepared to send photographs and provide panel serial numbers or crate numbers.

If the TAKTL Project Manager is unavailable for an urgent matter, call the main line for assistance: 412-486-1600.

Site Storage

Site storage is critical to maintaining the integrity of the panel surface, and it will be necessary to unpack and stage panels for installation. Establishing a location and method of storage and staging in advance of crate delivery is essential. Our project managers are available to assist in developing a successful strategy for storing, staging, and sorting panels, as required.

Receiving + Storing Crates

Our team is dedicated to shipping high quality products. Prior to shipment, parts are inspected according to the TAKTL Quality Management Tolerances + Acceptance Criteria (Doc. Q2-1). The product is then packaged in crates designed to hold the panels upright, protect the finish faces, and minimize damage during shipment. A master schedule of the crates and contents will be transmitted electronically to the installing contractor at the time of shipment. Crates are shipped with a manifest that lists each panel and its reference to the project panel list and panel layout designations.

Crate Inspection Upon Delivery

The receiving party is responsible for inspecting crates upon delivery, per the TAKTL Terms + Conditions of Sale (Doc. L-2), and immediately reporting any visible damage to the crate or signs of mishandling. Once crates are delivered to the site, handling and storage are the responsibility of the installing contractor. Use the following checklist for crate inspection prior to opening crates:

Inspect immediately upon unloading and confirm **BEFORE** the freight carrier leaves the site:

- ☐ Crates are tarped on arrival.
- ☐ Crates are individually covered in plastic.
- ☐ Crates do not appear to have any structural or water damage.
- ☐ Crates are upright on/in the truck.
- ☐ The number of crates and quantity of hardware received matches the number of crates on the shipping manifest sent to the installing contractor.

If any of the above conditions of receipt cannot be confirmed:

1. Photograph the receiving conditions.
2. Note the receiving conditions on the freight carrier bill of lading.
3. Call your TAKTL Project Manager within 48 hours to initiate the process of filing a claim.
4. Do NOT install material. Installation of material from improperly handled shipment crates will compromise the potential for remediation processes.

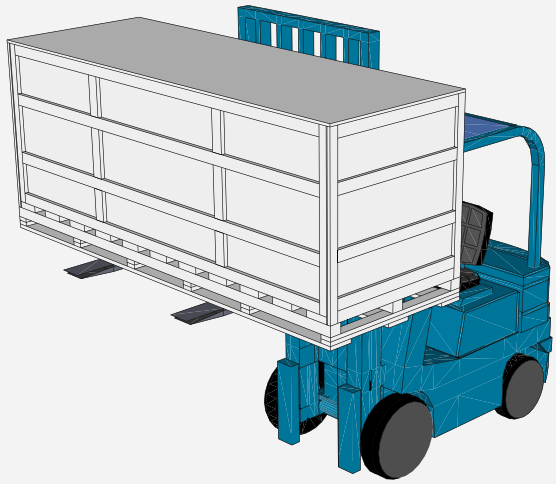
Crate Offload Instructions

- Crates must be lifted broadside from trucks with a forklift, exercising care to avoid jostling crate contents.
- Standard weights of a full crate of TAKTL material range up to 5,000 LB. In some cases, TAKTL Project Managers will seek prior approval to send heavier crates, provided there is appropriate equipment at the job site to unload and move them. Make sure the forklift used to move crates is rated for the necessary weight.
- In the event that crates are shipped in a dry van or covered truck, crates should be slid off the truck from the short end. Do not attempt to lift a crate fully off the ground from the short end.

01 Crate Offload Instructions

Crates must be off-loaded from trucks with a forklift, exercising care to avoid jostling crate contents (FIG. A).

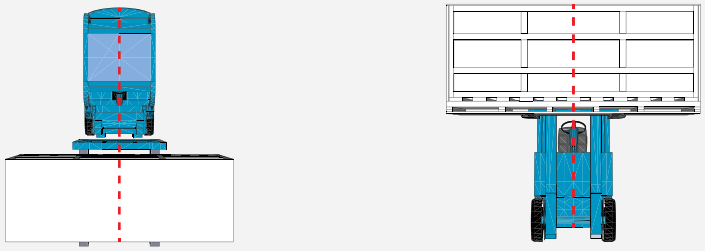
A



02 Support the Crate

Ensure that the forks fully support each crate and are balanced and centered (FIG. B).

B

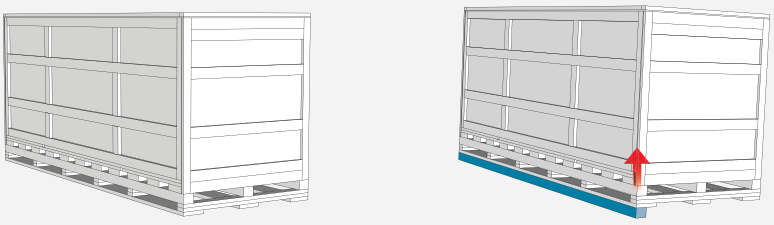


03 Brace the Front of Crate

Crates must be angled and blocked, using a 4x4 or 2-2x4's, to raise the edge 3 to 3.5 inches prior to opening.

The supporting block must be continuous and set on level ground to avoid uneven stress on the crate or the panels (FIG. C).

C



Crate Manifests + Shipment Notifications

Panels are cut and labeled with part numbers that correspond to approved panel layout drawings for the building. Part numbers are used to determine the correct location of the panel on the building. Part numbers start with the three letter project and start year, then a series of numbers indicating line item and installation location, and end in an alphanumeric suffix, if necessary, to indicate mitering or bonded corners.

Part Numbering Example: ABC17 – 1 – 478G – 2M0B

- Project: ABC
- Corresponding Line Item Number on Purchase Order: 1
- Location on Building: 478G
- 2M0B indicates that the panel has 2 mitered edges and 0 bonded edges (ie. is not a corner)

- Individual panels are also given unique serial numbers at the time of manufacture. The serial number is the means of traceability that links a part to the raw materials that were used to manufacture it.
- Both the part number and the serial number are written on the part with marker, and are present on the adhesive label on the back of the panel.
- Each crate is assigned a unique number as it is created. The number is painted on the outside of the crate.
- There is a document envelope on each crate that contains the Crate Manifest. The Crate Manifest lists the part numbers and quantities for everything in that crate.
- When reporting issues with a crate, your TAKTL Project Manager will need the crate number. Similarly, when reporting an issue with a part or parts, part serial numbers of the individual panel will be required.

Shipment Notifcations

Shipment notifications that contain the parts list for an entire shipment are generated when the panels are loaded onto a truck at our facility and emailed to our customer within one business day. The manifest is sent to the site contact on file (FIG. A).

A

TAKTL

TAKTL, LLC
503 Braddock Avenue
Turtle Creek, PA 15145
Tel 412.486.1600

Project Shipment Manifest

Shipment No	Ship Date	Customer / Project	Master Unit No	Line #	PART #	Part Name	Ship Qty	Ship Sq Ft
04693	8/15/2017 1:13:00 PM	GAMA Construction Company / Canada Goose 1 - CGO17	M020460	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020462	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020465	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020466	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020470	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020471	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020572	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020580	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020663	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020687	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020689	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	5	200.0
			M020692	1	CGO17-1-100	TAKTL Flat Panel, Std White, Crinkle, Cast, CS	4	160.0
							59	2360

Plex 8/15/2017 3:02 PM jcartwright.tak

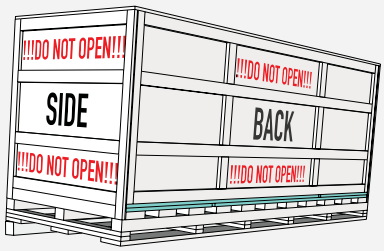
Handling + Storage Instructions

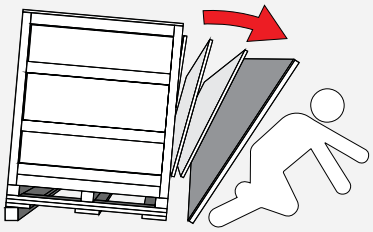
01 Crate Safety

Crates are loaded with the panels facing the front. The front and back of the crates are marked, both inside and outside of the protective plastic.

NEVER OPEN THE BACK OF A CRATE (FIG. A).

A





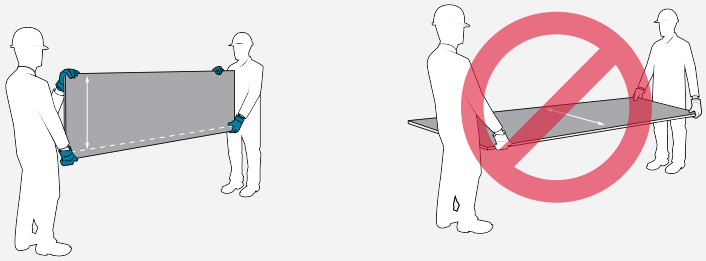
02 Panel Handling

Panels should be lifted and moved vertically to avoid cracking.

Panel edges can be sharp, so gloves should be worn when moving panels to prevent injury.

Gloves must be clean – oil and grease can stain the surface of the panels (FIG. B).

B

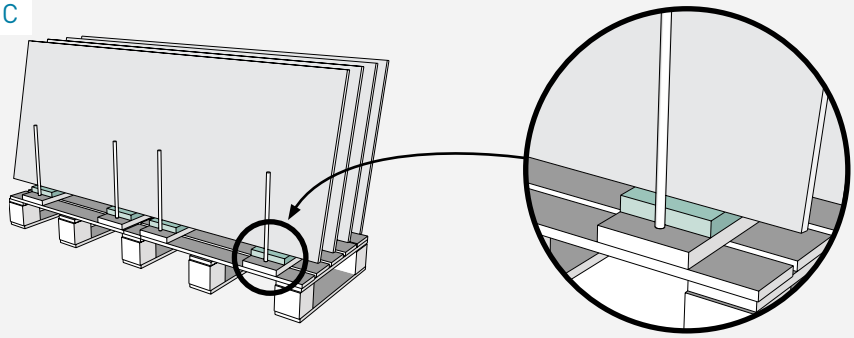


03 Panel Storage + Staging

Panels must be stored vertically, resting on back edge, padded with clean foam to prevent chipping.

Plan to prepare staging pallets if panels are not going to be installed directly from crates (FIG. C).

C



04 Flat Stacking Panels (Not Advised)

If panels cannot be stored vertically and must be stacked flat then clean, protective foam must be placed between panels. Stacks must be on level pallets or on raised platforms, and covered completely. Only completely dry panels can be stacked. Panels must be stored in the same conditions to weather evenly and maintain expected surface quality (FIG. D).

D

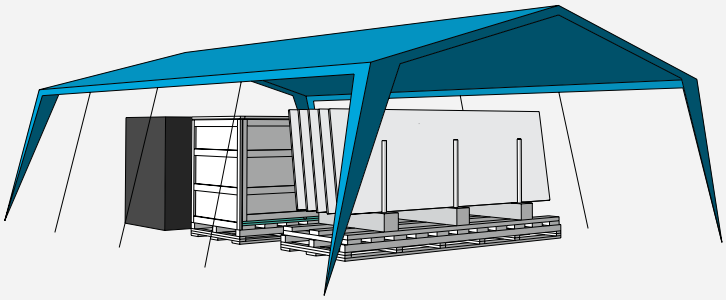
05 Crate Storage

Crates must be protected from moisture at the job-site and in long-term storage.

Crates must be stored under cover with ventilated tarps.

The shipping plastic is NOT sufficient for outdoor site storage (FIG. E).

E



06 Crate Ventilation

Crates must NOT be stacked vertically and space must be left on all sides of each crate for proper air circulation (FIG. F).

F

Panels may be subject to natural efflorescence staining, and in almost all cases natural efflorescence will go away with time. However, a distinctly different type of efflorescence can be caused by water exposure in storage. There is a significant visual and chemical difference between efflorescence caused by weathering and efflorescence caused by storage conditions. Any time a panel is wet and cannot dry evenly across the surface, even for a short period of time, storage damage is likely to occur. Examples of situations that will cause storage damage include:

- Water or condensation in closed crates
- Stacking crates vertically or horizontally without air circulation outdoors
- Keeping any wet foam or plastic in contact with panel surfaces
- Storing panels horizontally where water can pool on the surface
- Leaving crates open onsite

TAKTL cannot be held responsible for water damage caused by mishandling. In order to prevent it, keep crates and panels dry, and store with adequate ventilation. If water damage DOES occur, do not install the panels. Contact your TAKTL Project Manager to discuss remediation options.

Uncrating Instructions: Standard Panels | TAK Crates

IMPORTANT

Before Uncrating

Phillips Head Screws are used to attach the lid of the crate and the front braces. Screw locations are marked with paint.

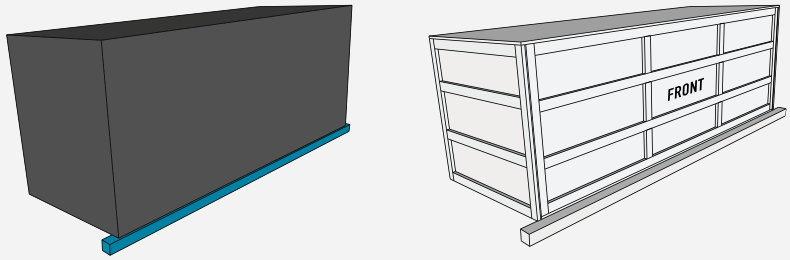
Star Drive (Torx) Screws are used to attach the crate to its base and the back to the sides. Star drive (Torx) screws are NOT marked with paint and should NOT be removed.

Desiccant Packets are located inside of the plastic wrap. Open the plastic wrap to access the panels. If the panels will be re-wrapped and stored in the crate, keep the desiccant packs to put back inside.

01 Unwrap Plastic + Prop Crate

Prop the front of the crate up at least 4" above back of crate using a 4"x 4" piece of lumber the full length of the crate. If the ground is not fully level, the prop might need to be larger in order to get the front of the crate 4" higher than the back. Remove the protective plastic. Crates should be clearly marked "front" and "back" on the wood (FIG. A).

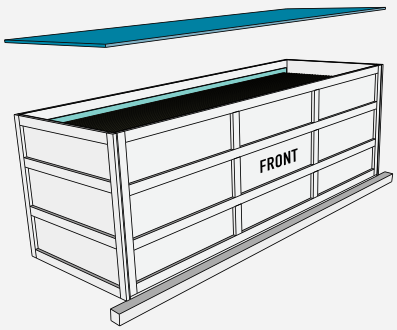
A



02 Remove Lid

Remove the lid of the crate and set it aside. The panels inside the crate are wrapped in black plastic. Look in the top of the crate and makes sure the panels are leaning toward the back before opening the front of the crate. If the panels are not vertical or leaning toward the back, do not open the crate further and increase the height of the front prop (FIG. B).

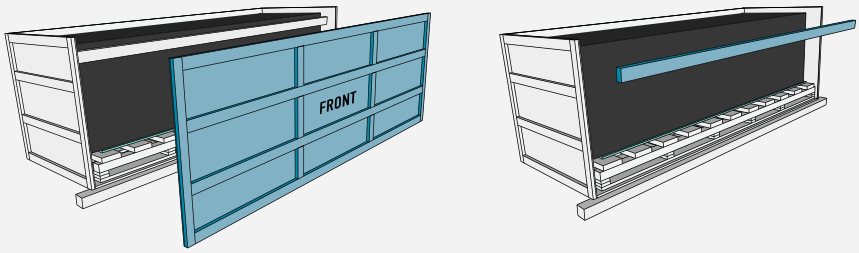
B



03 Remove Front

Remove the front of the crate and any internal bracing by unscrewing at the sides and base (FIG. C).

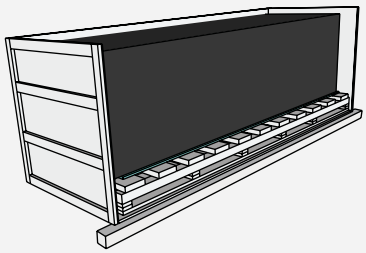
C



04 Unwrap Panels

Panels are wrapped in plastic with desiccant inside. Open the plastic wrap to access the panels. (FIG. D).

D

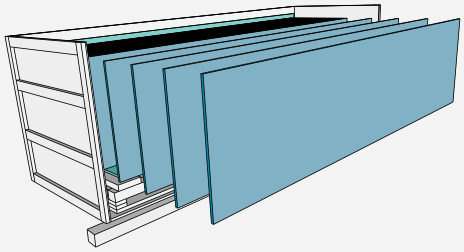


05 Remove Panels

Remove panels vertically to avoid any flexing (FIG. E).

NOTE: Take precautions to prevent any damage to the face of the panel.

E

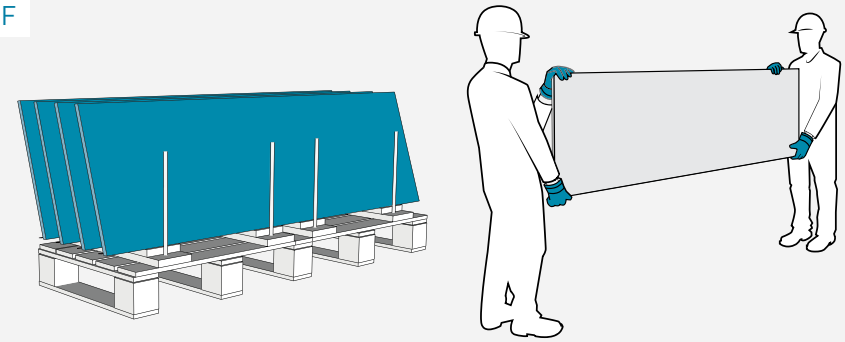


06 Stage Panels

Removed panels should be placed on a staging pallet to prevent damage to the panels prior to installation (FIG. F).

NOTE: Safety gloves are required for handling panels.

F



STORAGE REQUIREMENTS

Moving + Storage

- If the crate must be moved, reattach any bracing that was removed.
- Do NOT attempt to move the crate without securing panels in the crate.
- Make sure crates are covered with tarps at the end of the day with the desiccant packets placed inside of the plastic wrap.
- The plastic sheeting is NOT sufficient to protect the panels from weather.

Uncrating Instructions: Oversize Panels | A-Frame Crate

IMPORTANT

Before Uncrating

Phillips Head Screws are used to attach the lid of the crate and the front braces. Screw locations are marked with paint.

Star Drive (Torx) Screws are used to attach the crate to its base and the back to the sides. Star drive (Torx) screws are NOT marked with paint and should NOT be removed.

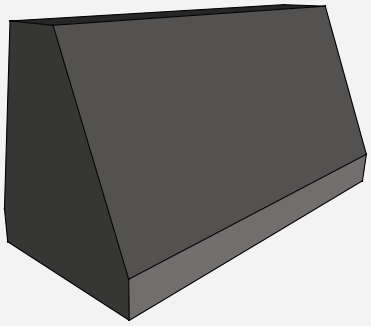
Desiccant Packets are located inside of the plastic wrap. Open the plastic wrap to access the panels. If the panels will be re-wrapped and stored in the crate, keep the desiccant packs to put back inside.

01 Unwrap Crate Plastic

Remove the plastic covering from the outside of the crate.

The panels are tilted backwards when they are packed in A-Frame crates, so this crate does not need to be propped up in front (FIG. A).

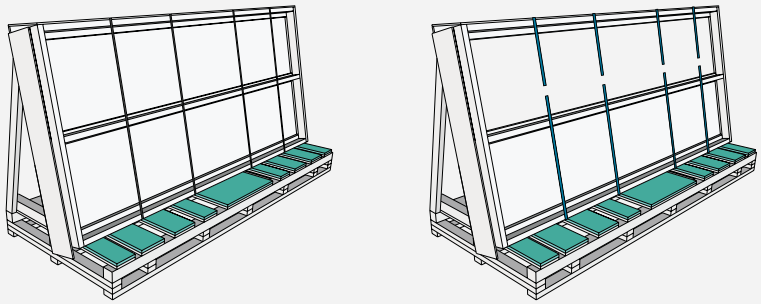
A



02 Cut Banding

Cut the steel banding that goes around the whole crate (FIG. B).

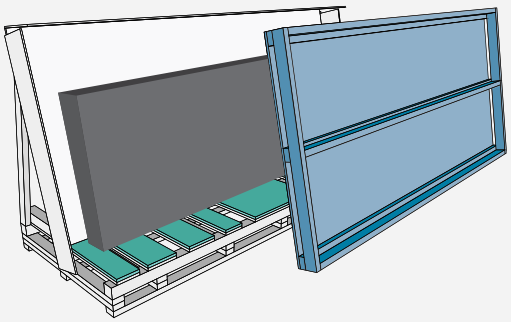
B



03 Remove Front

Unscrew the plywood holding the front of the crate in place. Remove the front of the crate and place to the side (FIG. C).

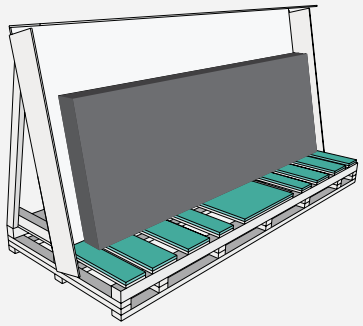
C



04 Unwrap Plastic

Panels are wrapped in plastic with desiccant inside. Open the plastic wrap to access the panels (FIG. D).

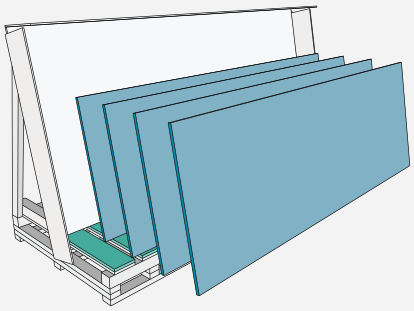
D



05 Remove Panels

Remove panels vertically to avoid any flexing. Take precautions to prevent any damage to the face of the panel (FIG. E).

E

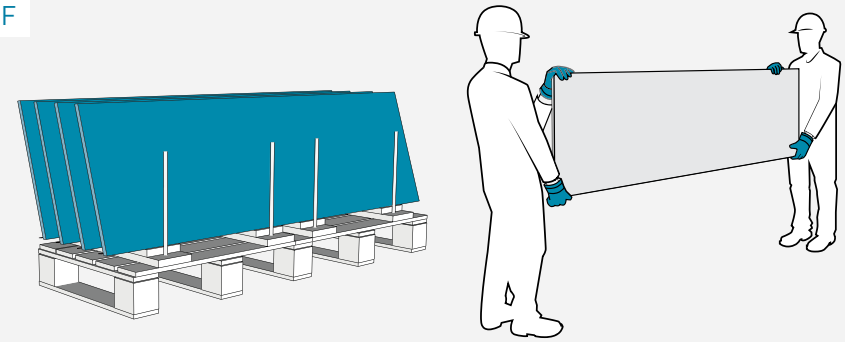


06 Stage Panels

Removed panels should be placed on a staging pallet to prevent damage to the panels prior to installation (FIG. F).

NOTE: Safety gloves are required for handling panels.

F



STORAGE REQUIREMENTS

Moving + Storage

- If the crate must be moved, reattach any bracing that was removed.
- Do NOT attempt to move the crate without securing panels in the crate.
- Make sure crates are covered with tarps at the end of the day with the desiccant packets placed inside of the plastic wrap.
- The plastic sheeting is NOT sufficient to protect the panels from weather.

Uncrating Instructions: Planks + Short Panel | TAK Crate with Shelves

IMPORTANT

Before Uncrating

Phillips Head Screws are used to attach the lid of the crate and the front braces. Screw locations are marked with paint.

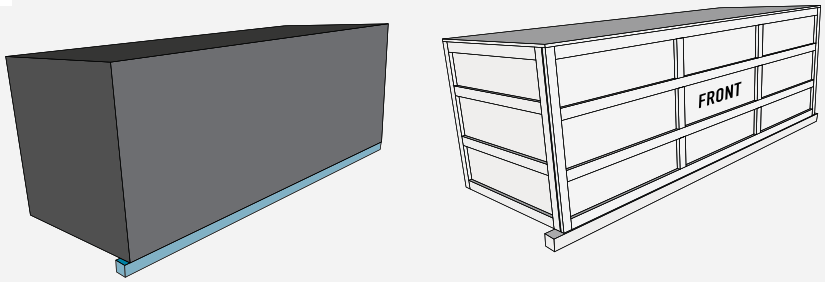
Star Drive (Torx) Screws are used to attach the crate to its base and the back to the sides. Star drive (Torx) screws are NOT marked with paint and should NOT be removed.

Desiccant Packets are located inside of the plastic wrap. Open the plastic wrap to access the panels. If the panels will be re-wrapped and stored in the crate, keep the desiccant packs to put back inside.

01 Unwrap Crate + Prop Crate

Prop front of crate up at least 4" above back of crate using a 4"x 4" piece of lumber the full length of the crate. If the ground is not fully level, the prop might need to be larger in order to get the front of the crate 4" higher than the back. Remove the protective plastic. Crates should be clearly marked "front" and "back" on the wood (FIG. A).

A

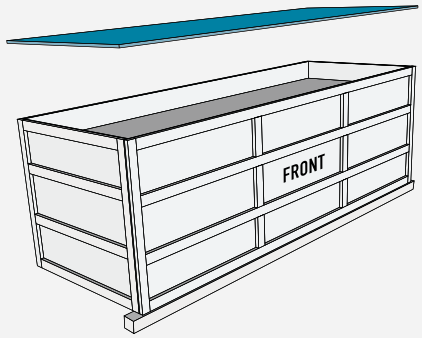


02 Remove Lid

Remove the lid of the crate and set it aside.

The panels inside the crate are wrapped in black plastic. Look in the top of the crate and make sure the panels are leaning toward the back before opening the front of the crate. If the panels are not vertical or leaning toward the back, do not open the crate further (FIG. B).

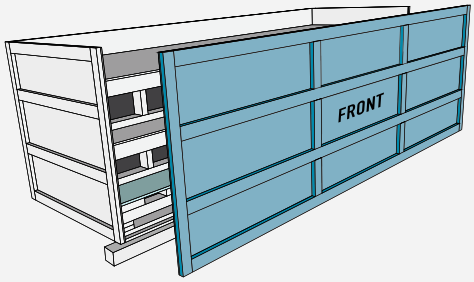
B



03 Remove Front

Remove the front of the crate by unscrewing at the sides and base (FIG. C).

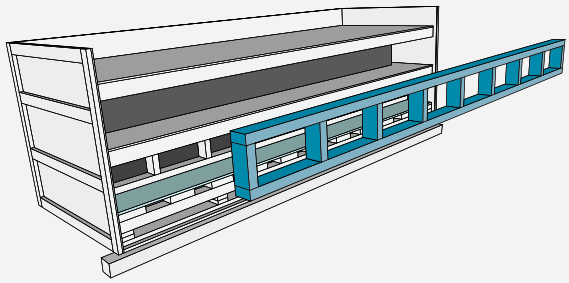
C



04 Remove Shelf Brace

Short panels or planks are crated with two or more shelves in a crate. Each shelf layer is wrapped and braced individually, and the crate must be unloaded from the top shelf down. To access panels on the top shelf, unscrew and remove the front brace from the top shelf ONLY (FIG. D).

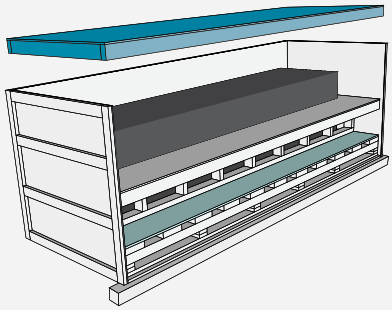
D



05 Remove Shelf + Unwrap Panels

Remove the shelf and set it aside. Panels are wrapped in plastic with desiccant inside. Open the plastic wrap to access the panels (FIG. E).

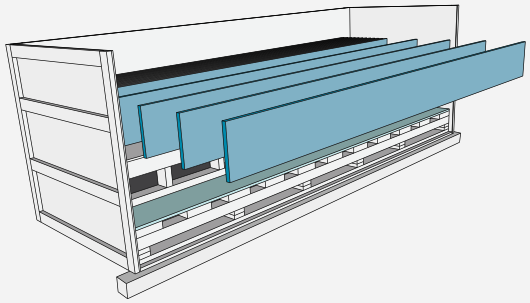
E



05 Remove Panels

Remove panels vertically to avoid any flexing. Take precautions to prevent any damage to the face of the panel (FIG. F).

F



STORAGE REQUIREMENTS

Moving + Storage

- If the crate must be moved, reattach any bracing that was removed.
- Do NOT attempt to move the crate without securing panels in the crate.
- Make sure crates are covered with tarps at the end of the day with the desiccant packets placed inside of the plastic wrap.
- The plastic sheeting is NOT sufficient to protect the panels from weather.

Uncrating Instructions: Custom Parts | TAK Crate

IMPORTANT

Before Uncrating

Phillips Head Screws are used to attach the lid of the crate and the front braces. Screw locations are marked with paint.

Star Drive (Torx) Screws are used to attach the crate to its base and the back to the sides. Star drive (Torx) screws are NOT marked with paint and should NOT be removed.

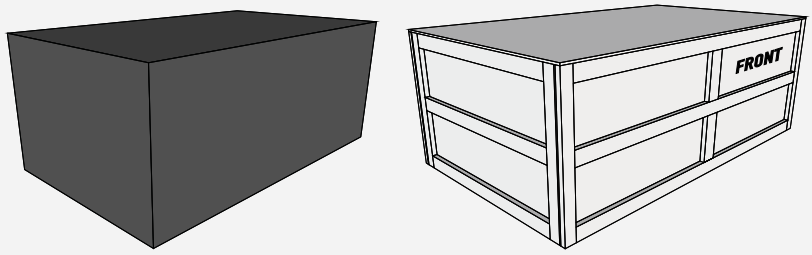
Desiccant Packets are located inside of the plastic wrap. Open the plastic wrap to access the panels. If the panels will be re-wrapped and stored in the crate, keep the desiccant packs to put back inside.

01 Unwrap Crate

Custom parts and large bonded corners are crated flat. The fronts of these crates do not need to be propped up because the panels cannot fall out.

Remove the protective plastic. Crates should be clearly marked "front" and "back" on the wood (FIG. A).

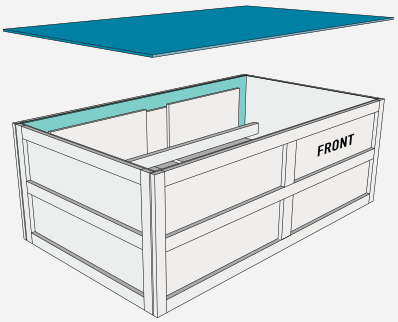
A



02 Remove Lid

Remove the lid of the crate and set it aside (FIG. B).

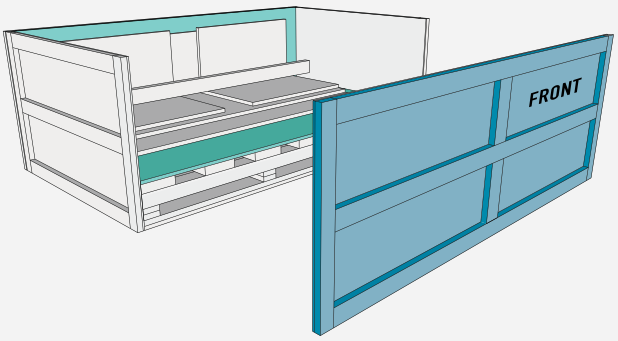
B



03 Remove Front

Remove the front of the crate by unscrewing at the sides and base. (FIG. C).

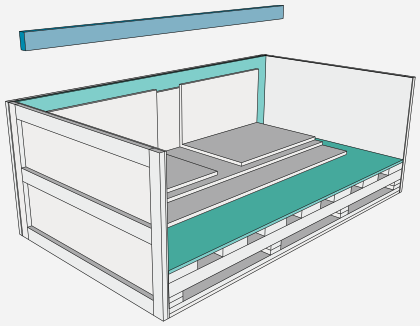
C



04 Remove Shelf Brace

Depending on the geometry and shape of corners or custom parts, there may be internal bracing or a front brace to keep parts from shifting during transit. Remove this to extract panels (FIG. D).

D

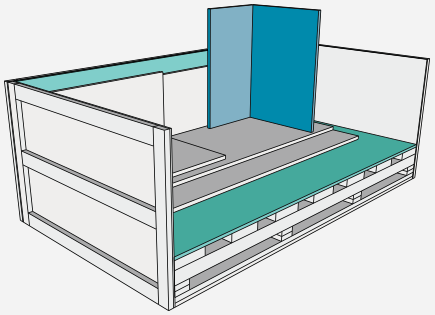


05 Remove Shelf + Unwrap Panels

Remove parts one at a time by first tilting them up so they can be moved vertically (FIG. E).

NOTE: Avoid stepping on parts during the unloading process as it can damage panels.

E



STORAGE REQUIREMENTS

Moving + Storage

- If the crate must be moved, reattach any bracing that was removed.
- Do NOT attempt to move the crate without securing panels in the crate.
- Make sure crates are covered with tarps at the end of the day with the desiccant packets placed inside of the plastic wrap.
- The plastic sheeting is NOT sufficient to protect the panels from weather.