ATAS International, Inc.
BUILDING PANEL TRANSIT,
JOB SITE HANDLING AND STORAGE PROCEDURES

800.468.1441 | www.atas.com | info@atas.com

Contents

Disclaimer:

This document is intended as a guideline to identify generally accepted practices for transit, handling and storage of products and materials. It does not address the adequacy of the handling equipment, government regulations regarding safely securing the load to vehicle, or safety practices inherent in handling sheet metal and operating various types of equipment. Unusual site or load conditions are also beyond the scope of this document. Care must be taken to ensure crate is correctly balanced. ATAS assumes no responsibility or liability for the use of the information or damages incurred during the material handling process.

Objectives

- Transport, unload and store materials to prevent physical damage to the panels, scuffing of the finish and damage due to corrosion.
- Identify steps to prevent corrosion during transit and storage by:
  - Reducing site storage time
  - Decreasing water contact
  - Moderating temperature extremes.
- Highlight requirements to safeguard protective, strippable film by preventing UV exposure and minimizing exposure to high heat and moisture so the masking can be easily removed after installation.
- Provide information on correct procedures so as to avoid costly, time-consuming and annoying field problems.

Transit

- Both painted and unpainted products should be kept dry.
- Abrasion, which appears as scuff marks, can result when panels flex during loading or unloading. Long bundles should be lifted with equipment that supports most of the panel length (see Receiving section).
- Bundles of panels should be rigidly packaged with crosswise and lengthwise blocking.
- Truck loading should insure that panel bundles are protected from contact with other items, such as structural components.
- Carriers must be aware of safety requirements and obey all local, state and federal laws, including proper securing of loads.
- When lifting bundles with a forklift, the forks must be a minimum of five feet apart. (See Receiving section for additional precautions.)

Potential problems that can occur if proper procedures are not followed

- Panel scuffing, buckling, corrosion or wetness that can lead to corrosion during job site storage.

Return to Contents

Receiving

Bundles of panels are typically unloaded either by forklift or crane. In either case, panels in bundles should be lifted at their center of gravity, and the bundle should be supported along the length. Crates should never be turned over on their sides for lifting. Never ride on the crates that are being transported.

Forklift unloading and handling

- Forks must be spread a minimum of five feet.
- The allowable overhang depends on the strength of the panels in the bundle as shown in Table 1 and Figure 1A.
- When lifting beneath the load, one forklift can be used for bundle lengths up to those specified in Table 1. Longer bundles will require additional forklifts so no more than the specified length overhangs at either side of the forks (see Figure 1B). Spreader bar must be secured to forklift.
- A forklift can also be used to raise bundles longer than the specified maximum when they are suspended from a spreader bar (see Figure 2). The maximum distance between pick points and the maximum overhang are shown in Table 1. (See the next section below for additional information on the use of slings and spreader bars.)
- Forks should not extend beneath the load so as to damage material in front of the load when the bundle is placed (see Figure 3).
- Drive slowly over uneven terrain to prevent panel buckling.
- Do not transport open bundles.

Table 1. Overhang and Span Limits for Lifting Bundles of ATAS Formed Panels

Panel Class and Families	Maximum Overhang (ft)	Maximum Length Between Supports or Pick Points (ft)	Maximum Bundle Length Handled by One Forklift (ft)
Non-Structural Panels: 1" & 1 ½" Field-Lok PC Panels Rumba Shake Bermuda Belvedere Grand C & V Metafor Multi-Purpose Opaline Versa-Seam Linear Ceilings	5	10	15
Structural Panels: 2" & 2 ⅜" Field-Lok Monarch Dutch Seam & Batten Seam Techo Tile & Scanroof Belvedere (Except Grand C & V) Design Wall Corra-Lok Rigid Wall	10	20	25

Figure 1. Bundles of panels may be handled using a forklift with the load resting on the forks. (See Table 1 for restrictions).

Figure 1A. Limitations using a single forklift

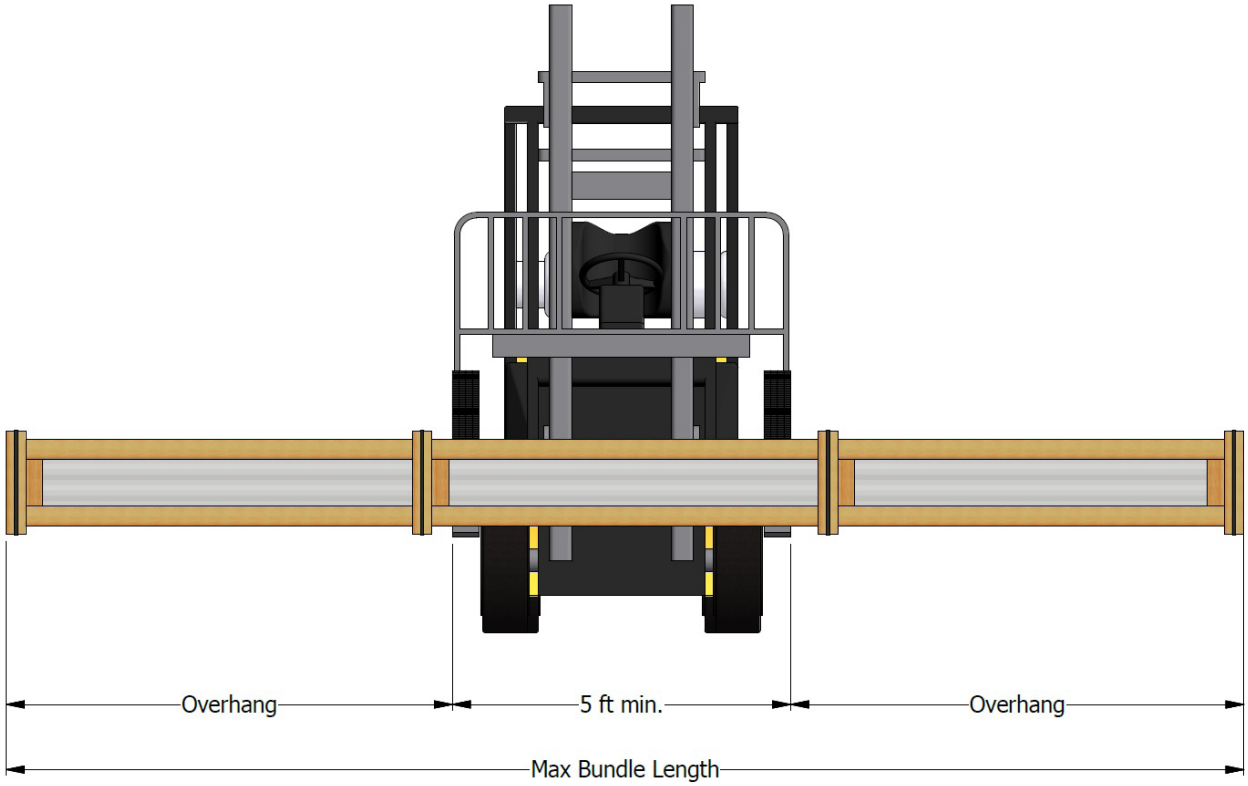


Figure 1B. Procedure for long bundles using multiple forklifts.

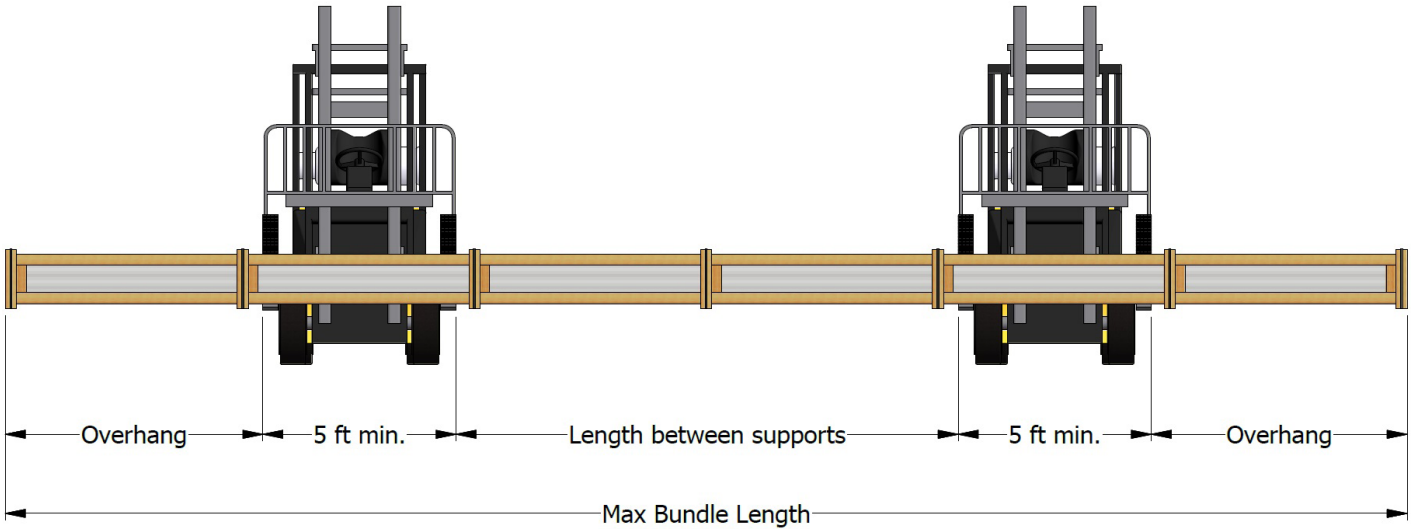


Figure 2. Long bundles may be handled using a single forklift if the load is suspended below the forks from a spreader bar. (See Table 1 for restrictions.) Stack bundles so banded wooden frames are supported by banded sections on the bundle underneath.

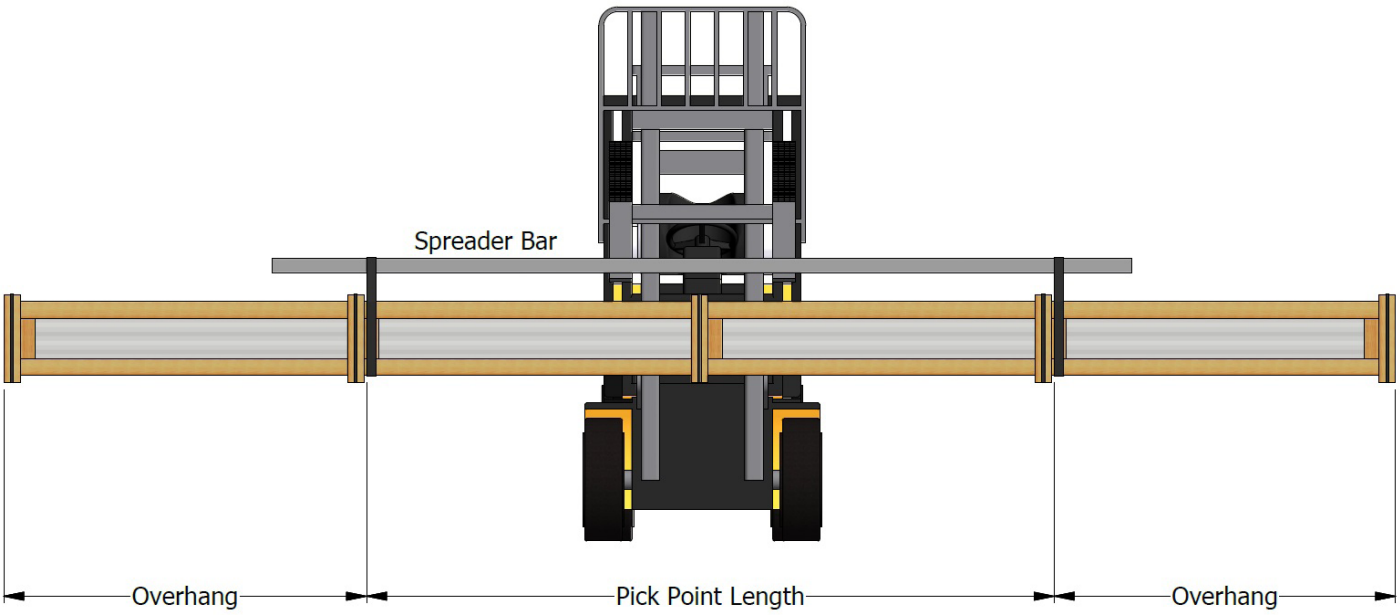
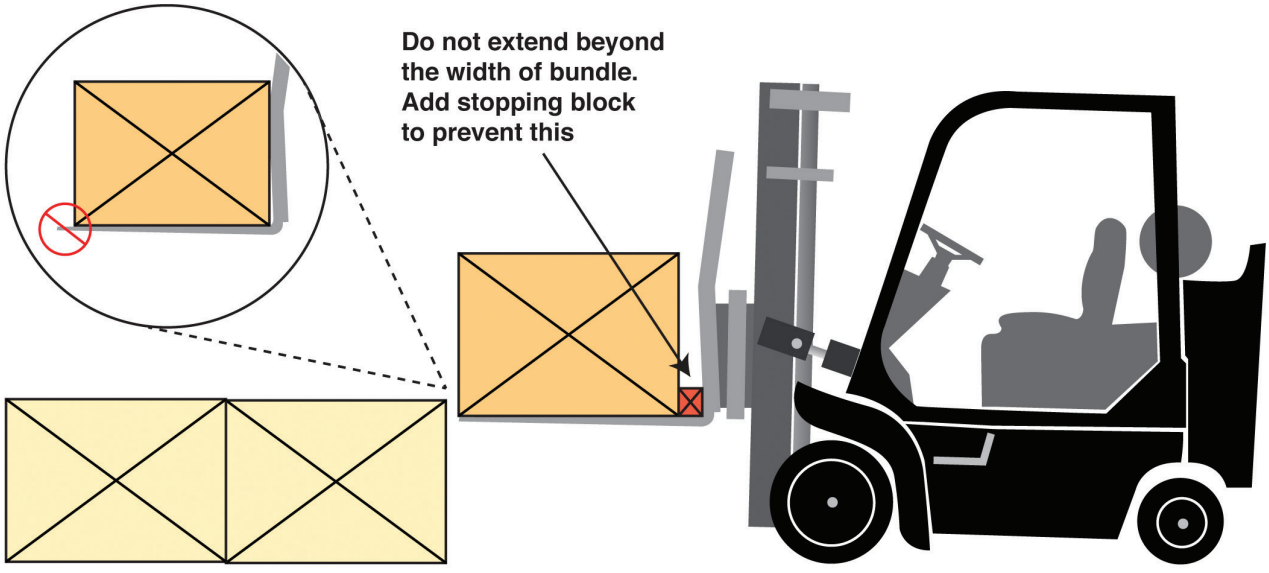


Figure 3. If forks extend too far under the load, the tips may damage material in the adjacent bundle.



Crane unloading and handling

- When lifting bundles with a crane, nylon straps at least 2 inches wide should be used. Never use wire rope slings or chains.
- Whenever possible, place the nylon straps beside the wooden frames that surround the bundle. The nylon straps must not damage the panels. Use spreader planks when required beneath and above the bundle to protect the panels (see Figure 4). The plank at the top of the bundle is especially important if a choker is used.
- Lift points must be no farther apart than either the value specified in Table 1 or the length of each suspending cable, whichever is less. Overhangs must be no more than specified in Table 1 (see Figure 5).
- A spreader bar should be used if the distance between the outer pick points is greater than the length of the cable or if the overhang would be more than the lengths specified in Table 1.
- Use a spreader bar light enough so that the crane can lift the combined weight of the bundle and the spreader bar. Several slings can be supported by a single spreader bar (see Figure 6).

Figure 4. When using nylon straps to lift a bundle, spreader planks placed beneath and above the crate will prevent damage to panel edges.

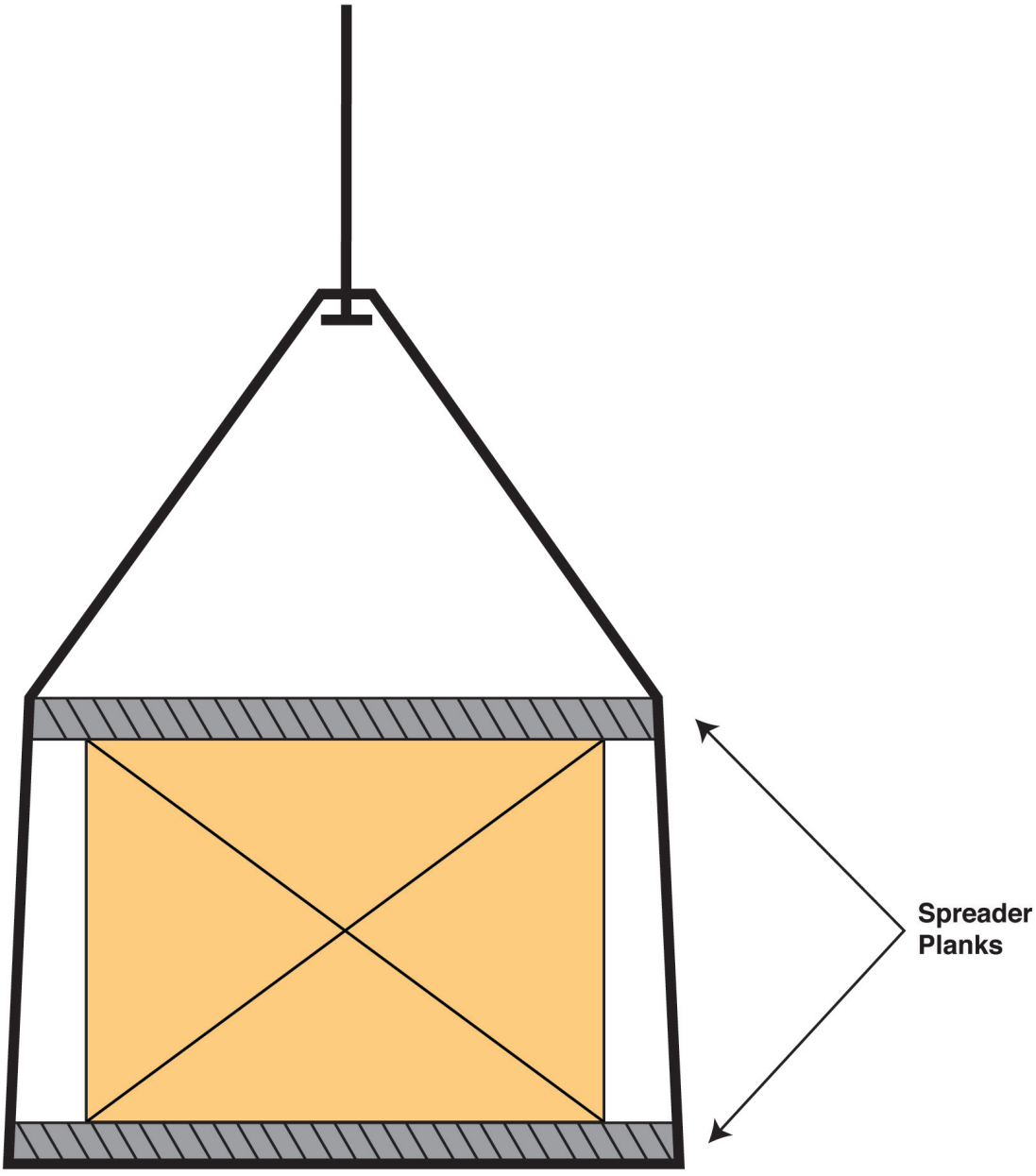


Figure 5. When handling bundles with a crane as shown, the distance between pick points must be no greater than the length of the cable or the specified distance in Table 1, whichever is less. When possible, straps should be placed close to the supporting framework.

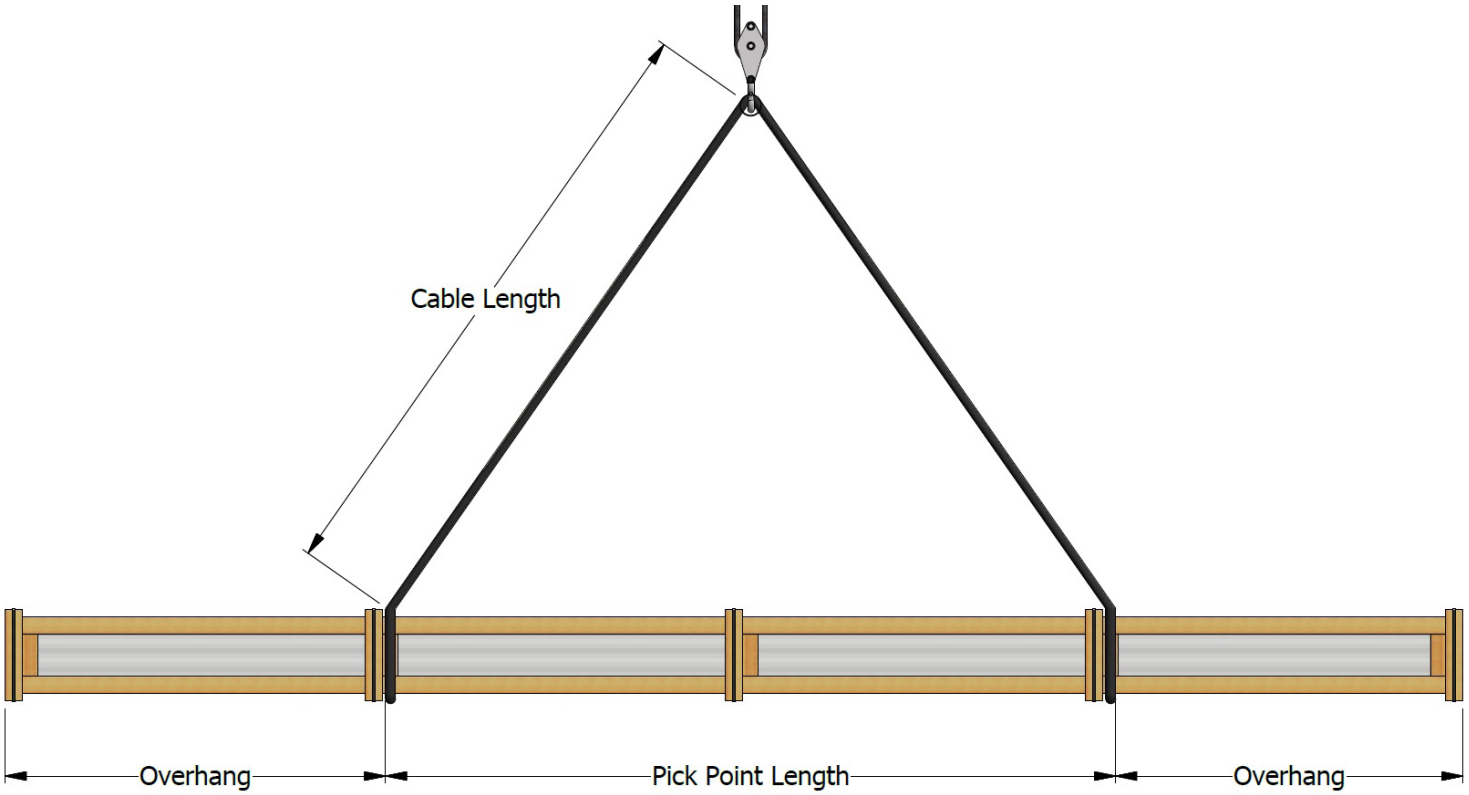
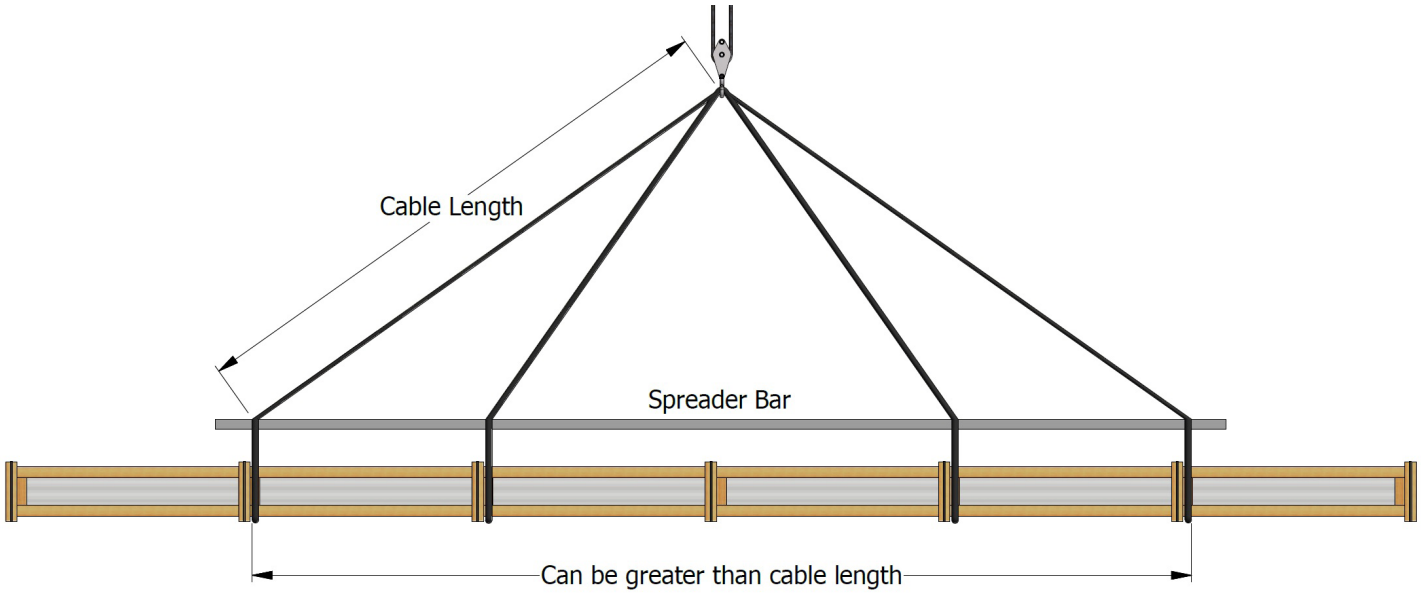


Figure 6. Bundles that are too long to be lifted as shown in Figure 5 can be handled using a spreader bar. In this case, the distance between outer pick points can be greater than the cable length. Restrictions in Table 1 apply.



Inspection

- Panel bundles must be inspected when received at the job site.
- Examine for mechanical damage, rips and tears in the packaging and the presence of water.
- Rips and tears in the paper wrapping must be repaired using water-resistant tape.
- If water is present in bundles of tightly stacked panels, the panels must be separated, wiped dry with a clean cloth and stacked with space between the panels so air can circulate and finish the drying process.
- Wet panels should also be inspected for evidence of blisters or corrosion. If found, these conditions should be noted on the receiving documents and reported to the panel supplier.

Potential problems that can occur if proper procedures are not followed

- Panel scuffing, buckling, bending, corrosion or wetness that can lead to corrosion during job site storage.

Storage

- The best way to reduce the possibility of damage during storage is to minimize the storage time.
- Other steps are designed to reduce the intrusion of water from rain, snow or condensation. A primary objective is to keep both painted and unpainted panels dry.
- Storage under roof is always preferable.
- Store away from materials that may contaminate the surface (such as diesel oil, paint, grease) and away from site traffic.
- If panels must be stored outdoors:
  - Store in a level area away from construction activities to minimize the number of movements.
  - Bundles stored on the ground must be placed on a plastic ground cover to minimize condensation of water from the ground on the panels.
  - Bundles must be raised several inches above the plastic ground sheet to avoid contact with puddles and to allow for air circulation.
  - Wet or treated lumber must not come in contact with the bundles.
  - The panels must be stored at an angle to promote drainage, taking care that the bundle is properly supported at each crosswise runner along its length (see Figure 7).
  - The bundle must be completely sheltered with a loose-fitting, waterproof tarp to protect the bundle from rain or snow while allowing for air circulation and drying of condensed water. The tarp also shades the bundle from direct sunlight, which helps to moderate temperature extremes and UV damage to protective masking.
  - Though it may seem like a good idea to wrap bundles in tightly sealed plastic wrap, this practice should be avoided because moisture can be trapped inside.
- If bundles of nested panels become wet, sheets should be separated, wiped with a clean cloth without delay and then placed so that air circulation completes the drying process. This is true for both painted and unpainted panels.
- When storing building panels, keep in mind that you are preserving both the integrity of the panels and the ability of the protective masking to release easily and with no residue after installation.

Potential problems that can occur if proper procedures are not followed

- Coatings on unpainted materials may deteriorate, resulting in non-uniform appearance that cannot be reversed.
- Prolonged exposure of bundled, prepainted panels to wet conditions can cause paint blistering or substrate corrosion.
- Adhesion of strippable film will increase over time and can cause removal problems.
- If panels are exposed to extreme heat or extensive solar radiation during storage or after installation, the strippable film may be very difficult to remove, and a residue may be left behind. In extreme cases, the film may be impossible to remove.

Figure 7. Take proper precautions when bundles must be stored outdoors, including a) Using a plastic ground cloth beneath the bundle; b) Supporting the bundle several inches above the ground cloth, along its length and at a slight slope for drainage; and c) Sheltering the bundle with a loose-fitting, waterproof tarp to provide air circulation while protect against water intrusion, temperature extremes and UV damage

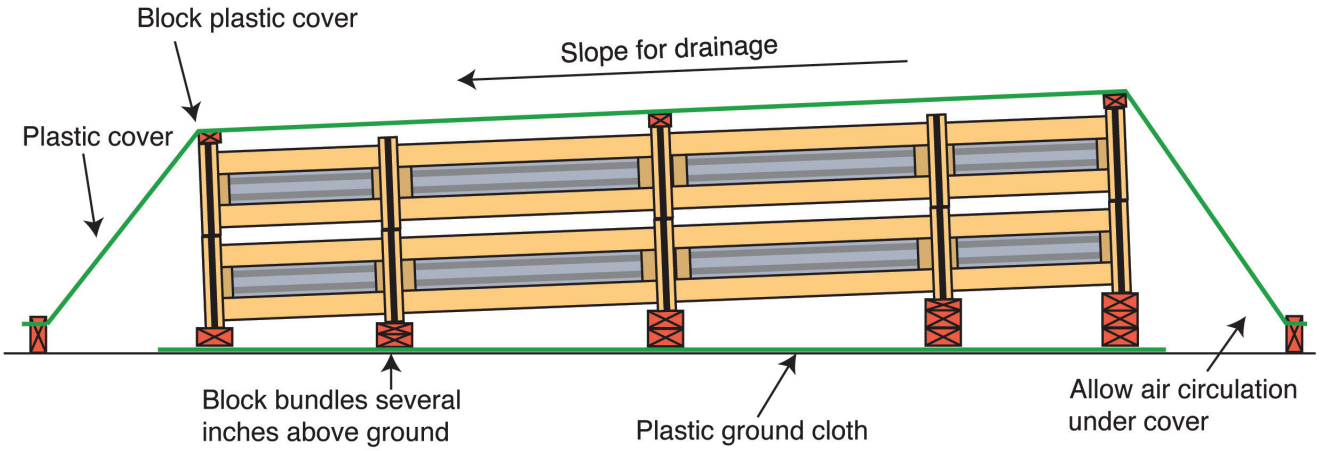
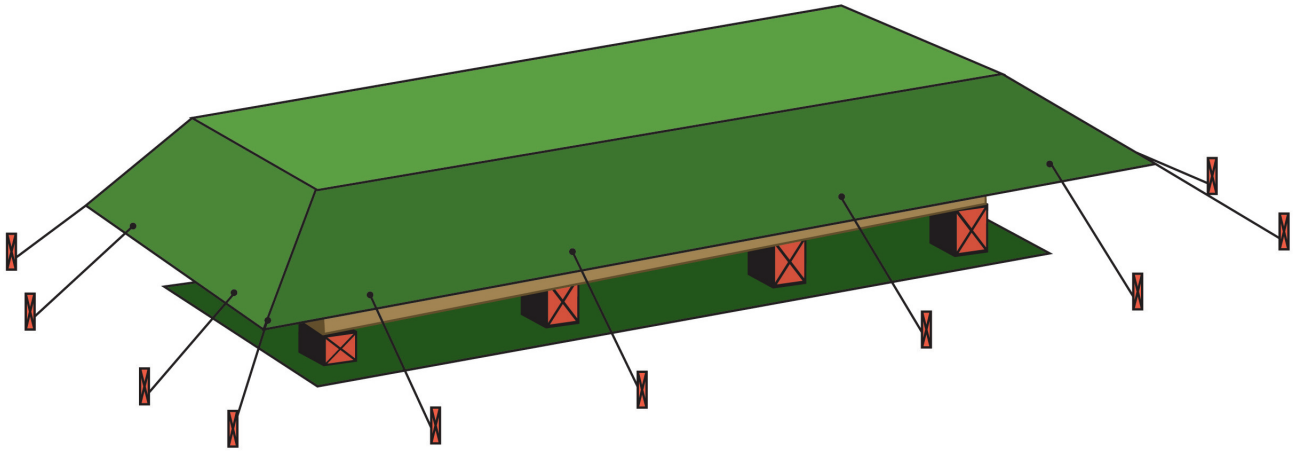


Illustration of Proper storage and tarp covering.



Handling Panels on the Job Site

- Individual panels should be lifted vertically by the seam. Do not pick up panels by the ends.
- If the panel is over 10 feet long, lift it with two or more people on one side to prevent buckling (see Figure 8).
- Unpainted panels should be handled and installed using clean, dry gloves.
- Remove strippable film as soon after installation as possible (see Figure 9). Caution! The masking is a translucent plastic film that may not be readily apparent. Be sure that it is removed from all panels and accessories.
- Exercise extreme caution when handling panels on windy days. Panels can catch the wind and knock a worker down, even on the ground.

Potential problems that can occur if proper procedures are not followed

- Panels may buckle.
- Unpainted panels will show fingerprints if gloves are not worn.
- Masking may be difficult or impossible to remove.
- Workers may be injured

Figure 8. Building panels must be lifted by the seam to prevent buckling. Additional people may be required to transport the panel safely and without damage.

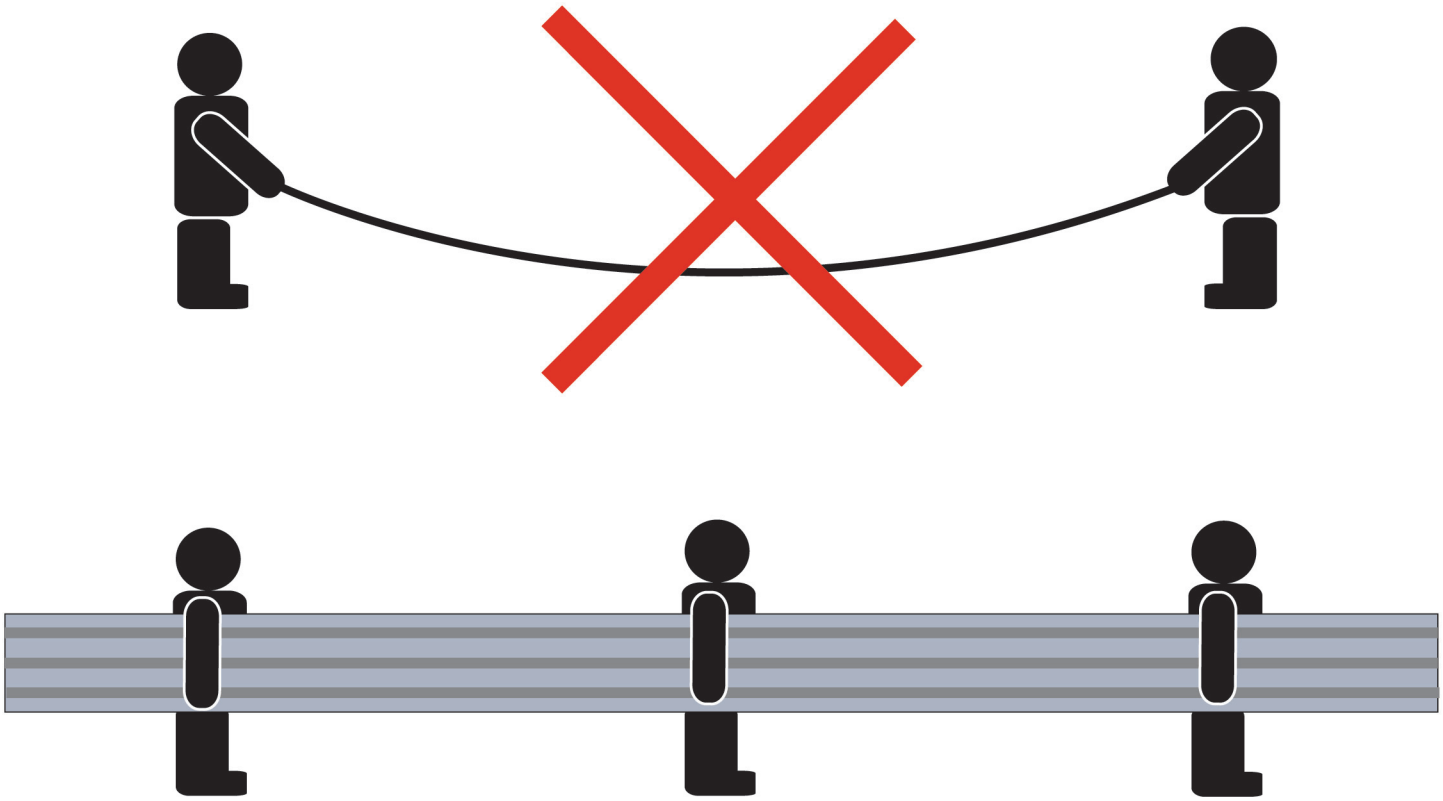
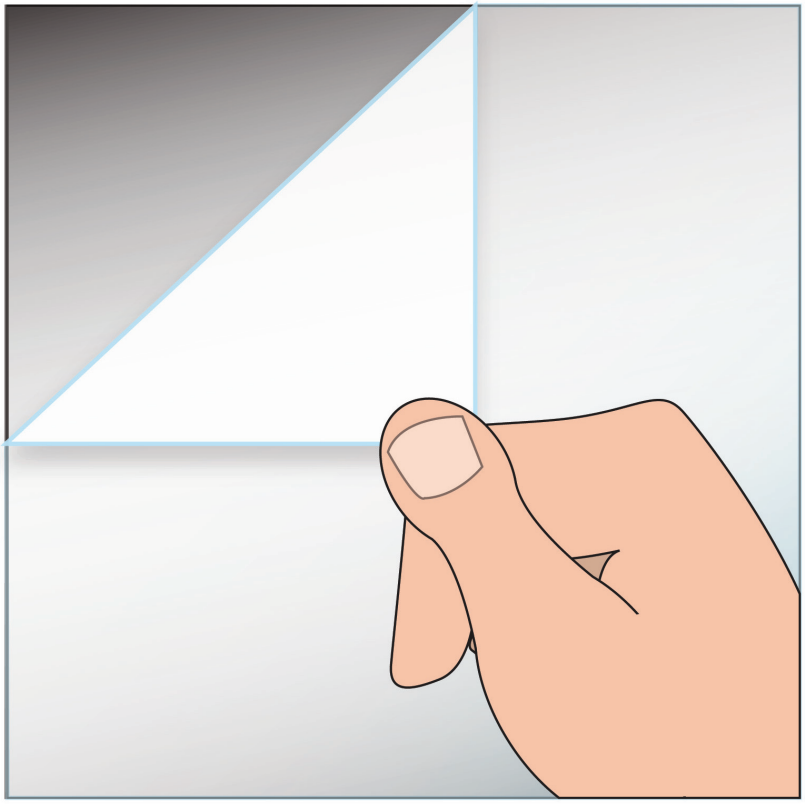


Figure 9. Remember to remove the protective, strippable film from panels and accessories immediately after installation. If left applied to panels too long, it may be difficult or impossible to remove.



Appendix A
Handling Procedures for Bundles of Flat Sheets

Skids of flat sheets are transported for a variety of applications, and correct procedures are required to prevent damage during loading or unloading. Flat sheets are stacked on skids with runners parallel to the long axis as shown in Figure A1. Cross-wise runners are placed beneath the bottom skid and between skids that are stacked to provide for ease of handling from either the short or long side.

Crane Unloading and Handling Procedure

- The preferred method for handling bundles of flat sheets is with the use of a below-the-hook lifting device such as shown in Figure A2. The material is supported uniformly along the long edges of load.
- Nylon slings can also be used so long as the material is adequately protected where the slings contact the load (see Figure A3). The success of this point-loading method is dependent on the soundness of the runners that support the load.

Forklift Unloading and Handling Procedure

- Although less desirable, forklifts must be used sometimes because an overhead crane is not available or material must be moved from one crane bay to another.
- A forklift with long forks that support at least 66% of the skid length can be used to move material so long as the driver is careful to support the material uniformly along the length and width of the forks and avoid damaging material on the narrow edge when approaching the load (Figure A4).
- Handling long skids of material with short forks is more problematic and should be avoided. Unfortunately, pushing or pulling long skids is common. Of the two methods, pushing the skid is preferable, but the skid and the material are often damaged.
- Relatively short skids less than 12 feet long can be safely transported by approaching the load from the long side as shown in Figure A5, so long as the forks are long enough to support all of the lengthwise runners. Forks must be spread so the load is stable and supported evenly. For example, for a 12-foot long skid, the forks would be spread to 4 feet wide, with a 4-foot overhang on each side. To lift a 10-foot long skid, the forks would be spread to 4 feet wide with a 3-foot overhang on each side.
- When skids of flat sheets are being readied for shipment, the hold-down straps should be placed in a vertical line with the cross-wise runners as shown in Figure A6 to prevent damaging the edges of the sheets when the straps are tightened.

Figure A1. Typical arrangement of flat sheets packaged for shipment on a skid. Crosswise runners beneath the skid allow access from all four sides.

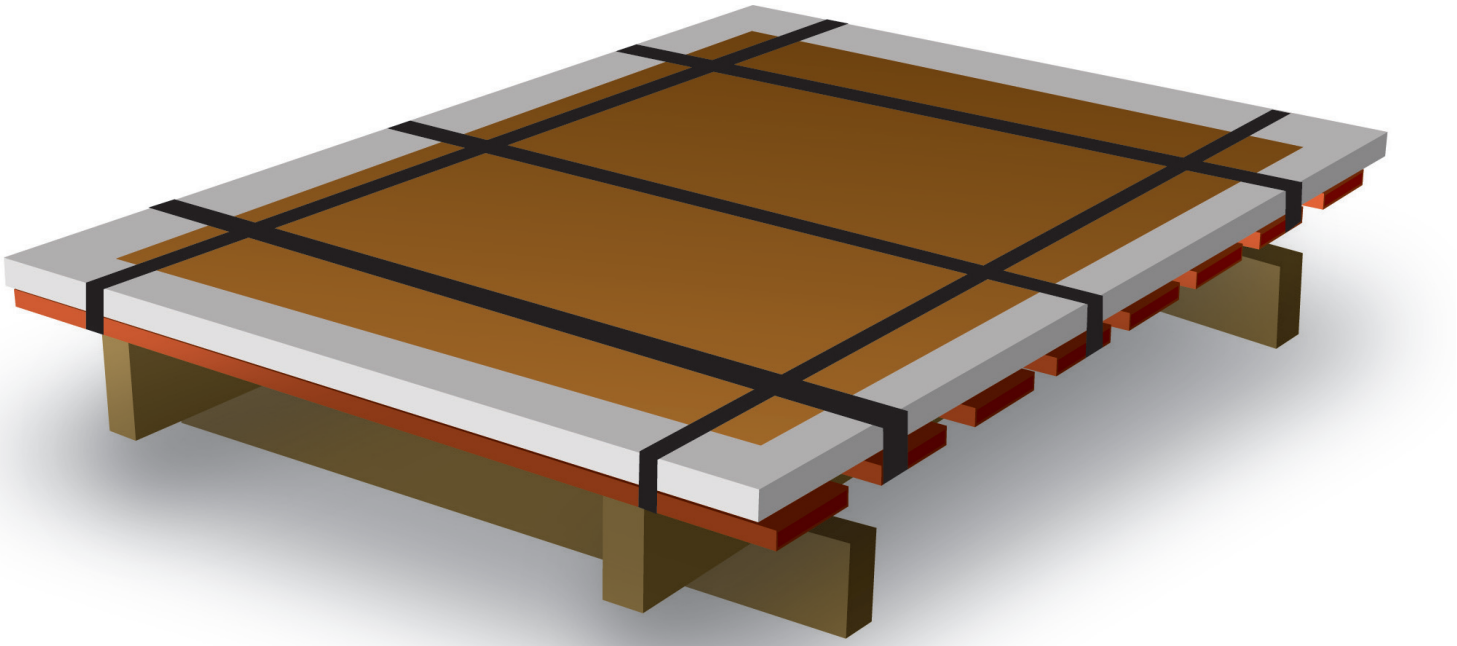


Figure A2. A crane with a below-the-hook lifting device is the preferred method for handling skids of flat sheets because the load is supported uniformly along the long edges.

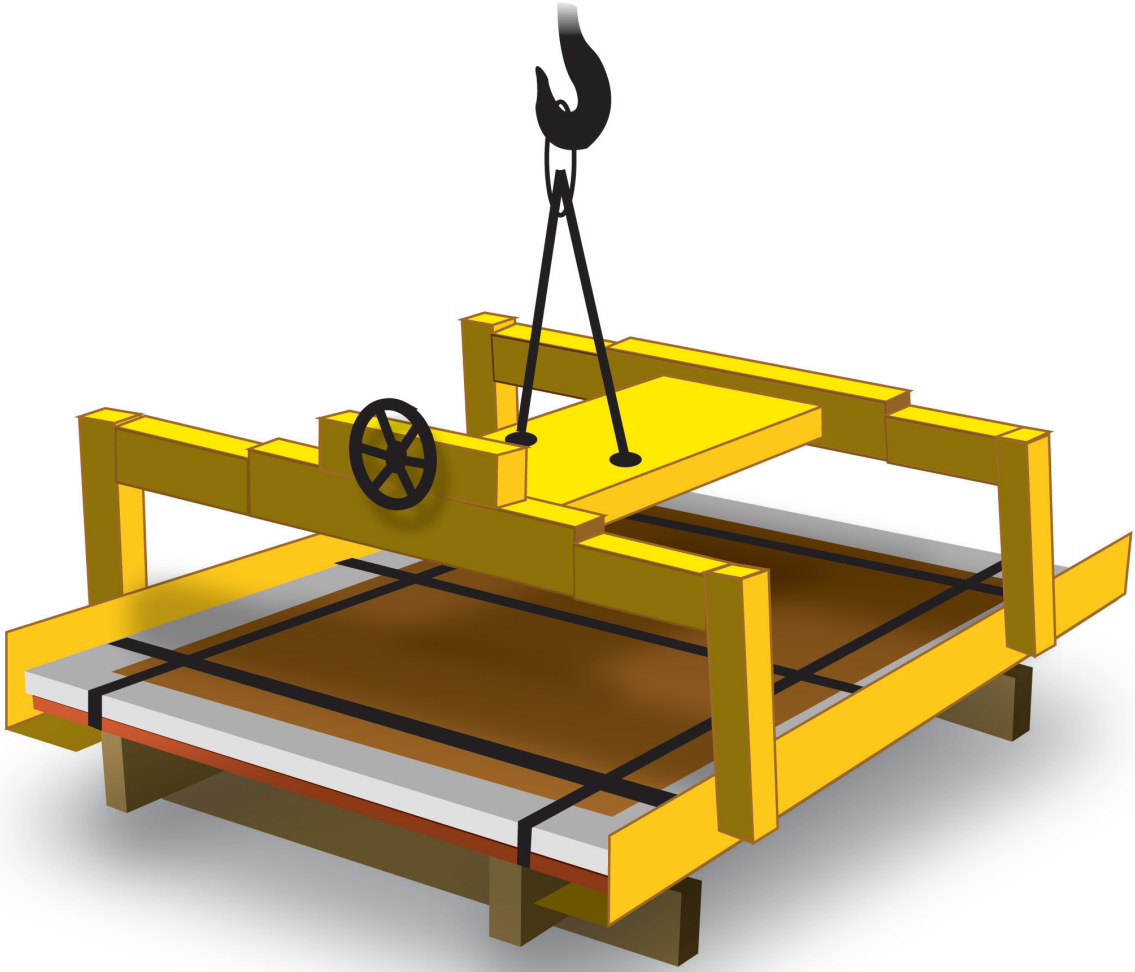


Figure A3. Nylon slings may also be used for crane handling so long as precautions are taken to prevent damage where the slings contact the sheets.

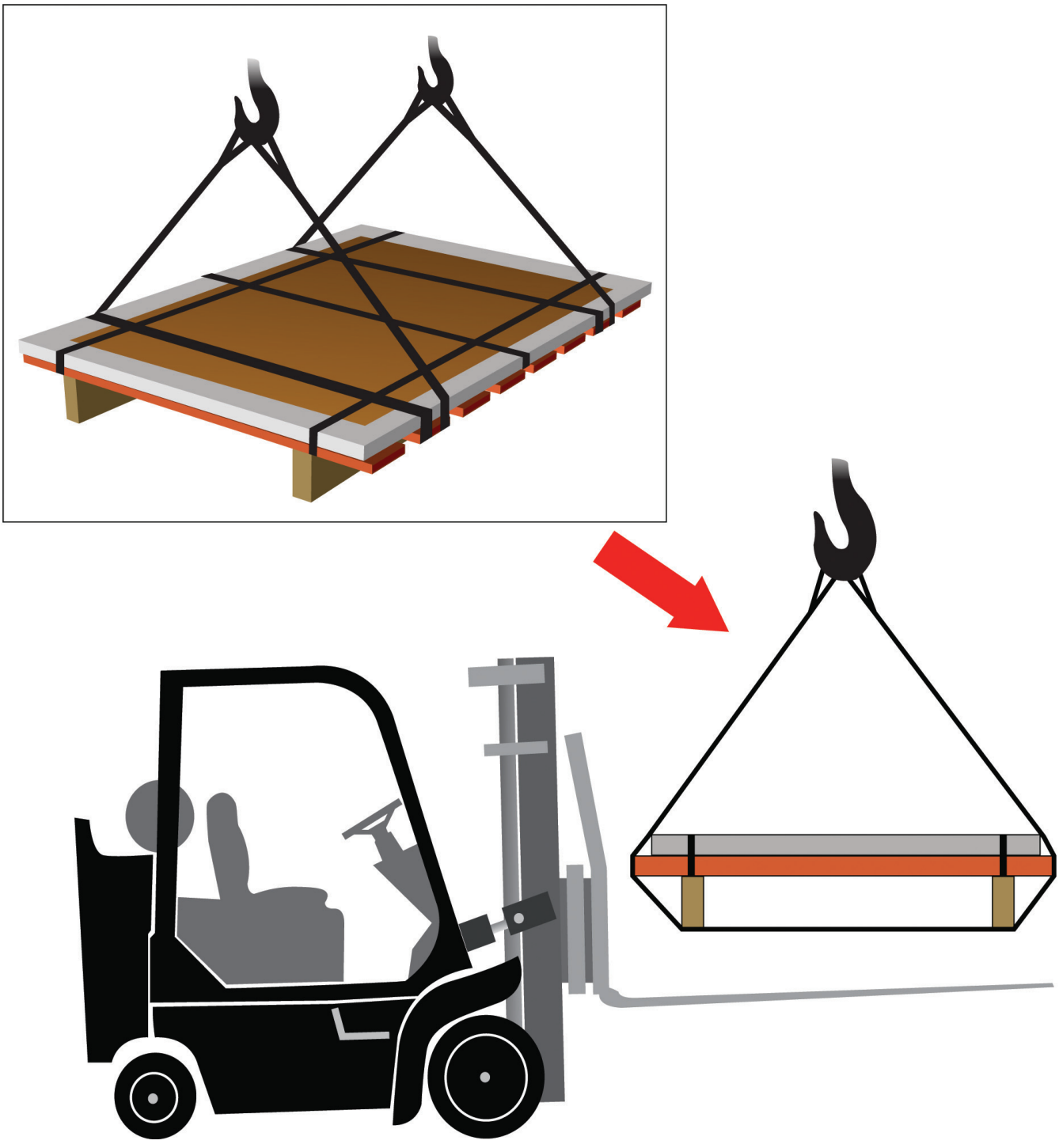


Figure A4. A forklift with forks at least 66% of the skid length may be used to lift skids from the short side, so long as the load is well balanced.

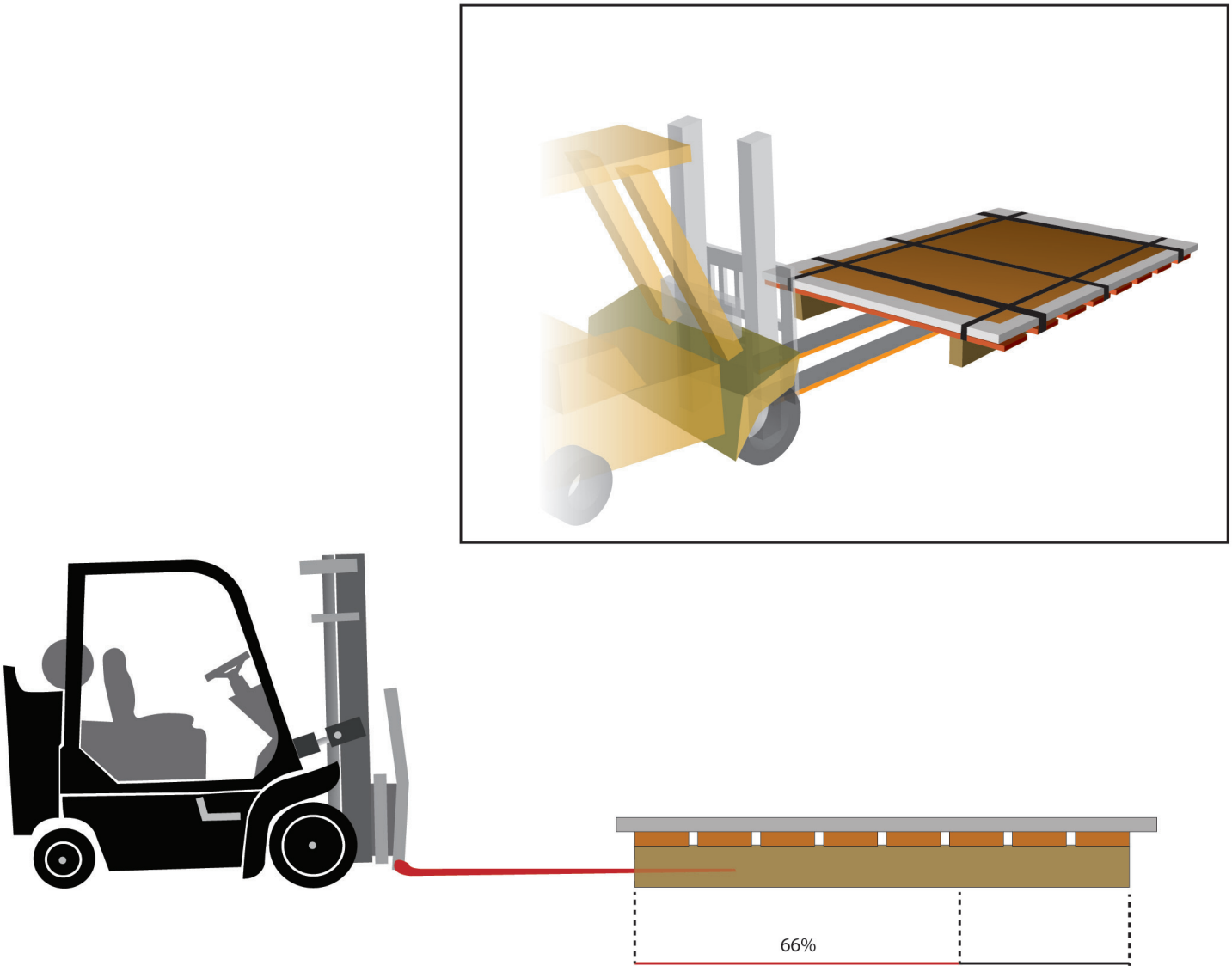


Figure A5. Skids less than 12 feet long can be lifted from the long side, so long as the forks support all of the lengthwise runners. Forks must be spread so the load is stable and well supported.

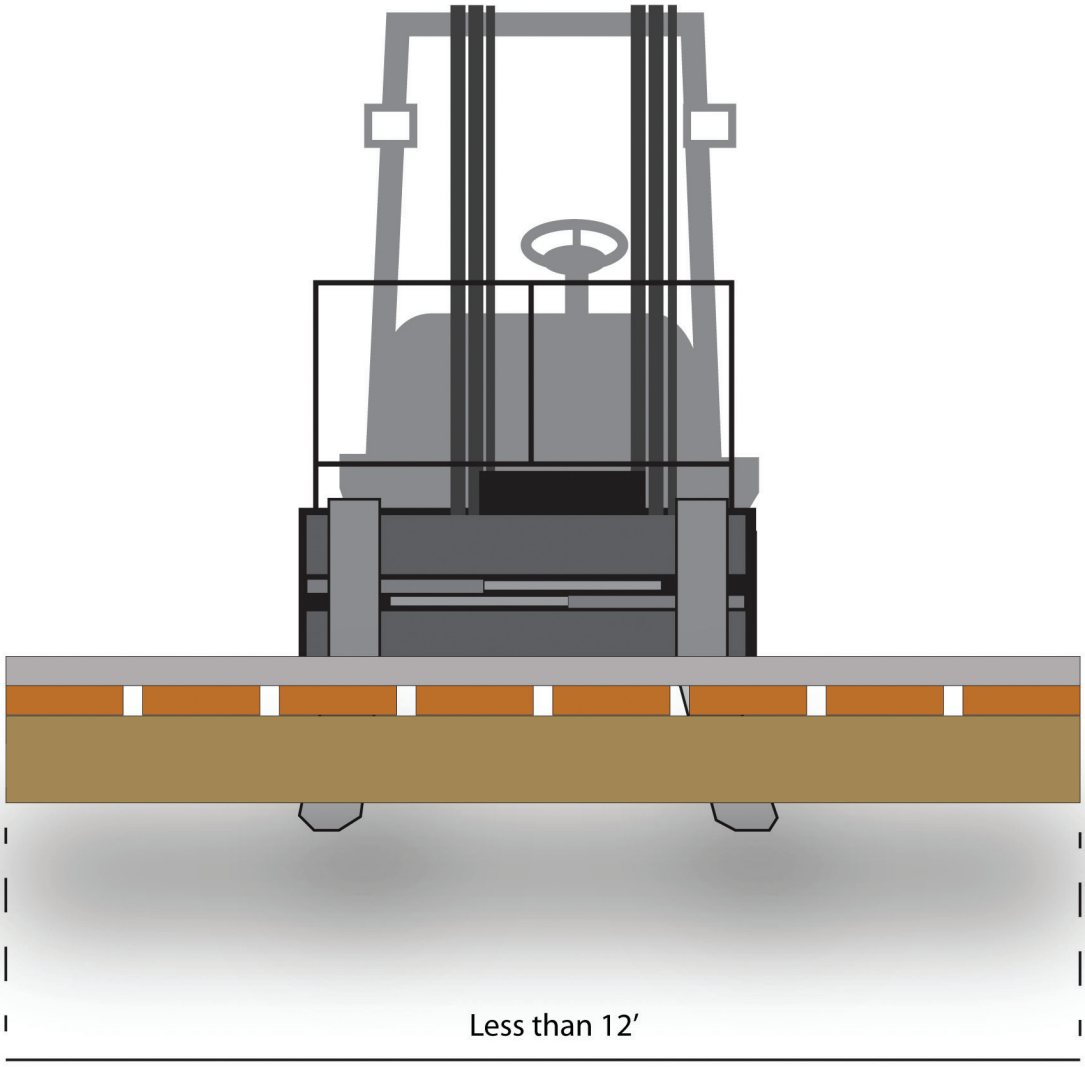
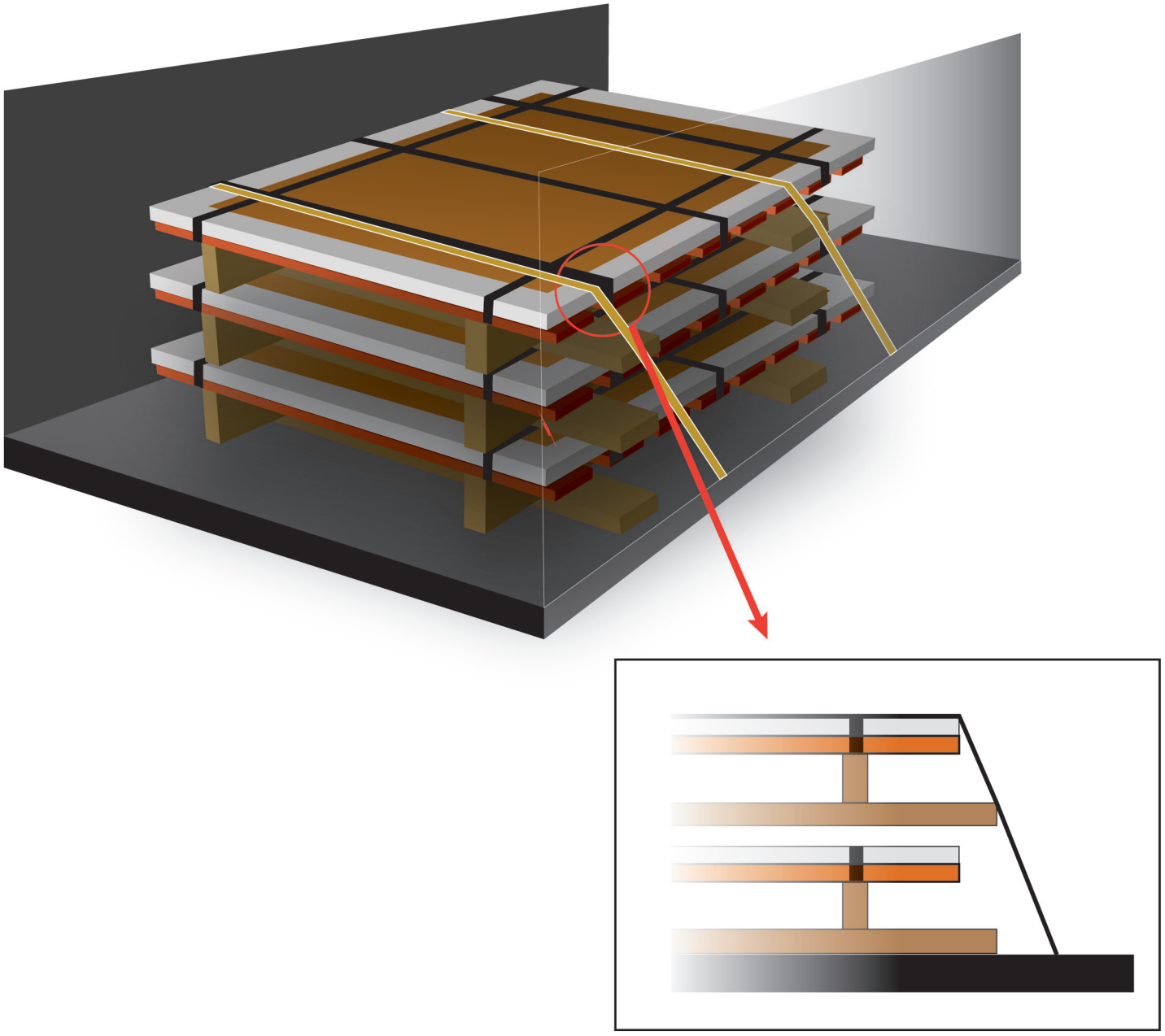


Figure A6. Stacks of skids being readied for shipment must have hold-down straps and crosswise runners aligned.



Appendix B
Handling Procedures for Coils

Coils of material to be used in various fabrication processes must be transported and handled properly to prevent damage. Depending on various factors, coils may be transported in either of two orientations:

- With the eye of the coil vertical as shown in Figure B1 (also called eye-to-the-sky), or
- With the eye of the coil horizontal as shown in Figure B2 (also called eye-to-the-side).

The recommended procedure for handling the coils depends on the orientation, and the type of damage that may result from improper handling techniques also depends on the coil orientation. Sometimes the best practices for handling coils are not possible because of equipment limitations at the unloading site. In such cases, the best alternative that is practical should be used.

Handling Coils with Eye-to-the-Sky

- A forklift is the only practical way of unloading and transporting coils in this orientation. Damage to outside wraps of the coil may occur if the outside of the coil is struck either by the forks or by an adjacent coil as shown in Figure B3.
- Forks should be long enough to support the entire skid beneath the coil. Side walls may be damaged if the tips of forks that are too short break through the supporting boards beneath the coil (see Figure B5).
- Coils may be double stacked so long as the coil sidewalls are smooth (see Figure B6).
- Unless coils are small and light enough to safely handle manually, an upender should be used to rotate coils from the eye-to-the-sky to the eye- horizontal position for subsequent processing (see Figure B7).

Handling Coils with Eye-to-the-Side

- Coils in the eye-horizontal orientation will be positioned on a truck as shown in Figure B8 to facilitate unloading by an overhead crane or side unloading with a forklift.

Best Unloading Option

- The best way to unload and move eye-horizontal coils is by using a crane with a "C" hook. The coil must be properly centered to balance the load so the coil is horizontal throughout the unloading process (see Figure B9).
- The hook should also be contoured to match the inside radius of the coil (see Figure B9-A).
- The vertical section of the hook should also be padded (see Figure B9-B).

Next Best Unloading Option

- When a crane and "C" hook are not available, the next best option may be side unloading using a forklift. The forks should be long enough to pass completely beneath the skid and support the entire load.
- When the forks are not long enough, coaxing the skid to the side of the truck may cause the tips of the forks to break the supporting boards and damage the outside wraps of the coil (Figure B10).

Unloading Options to Avoid

The following unloading procedures will damage coils and should be avoided (see Figure B11)

- Slings
  - -Nylon straps
  - -Steel cable
  - -Chains
- Chokers
  - -Nylon straps
  - -Steel cable
  - -Chains

Additional Precautions for In-Process Coils

- To keep coils from collapsing, they should be lowered to the floor slowly.
- Outer wraps of coils should be secured tightly with tape or banding. Loose wraps can cause friction abrasions the next time the coil is placed under tension.
- Waste can be minimized by placing coils on clean protective padding, preferably V-shaped to cradle the coils.
- Stacking coils with eye-horizontal is not recommended because there is greater risk of damage.

Figure B1. Coil with the eye vertical or eye-to-the-sky orientation.

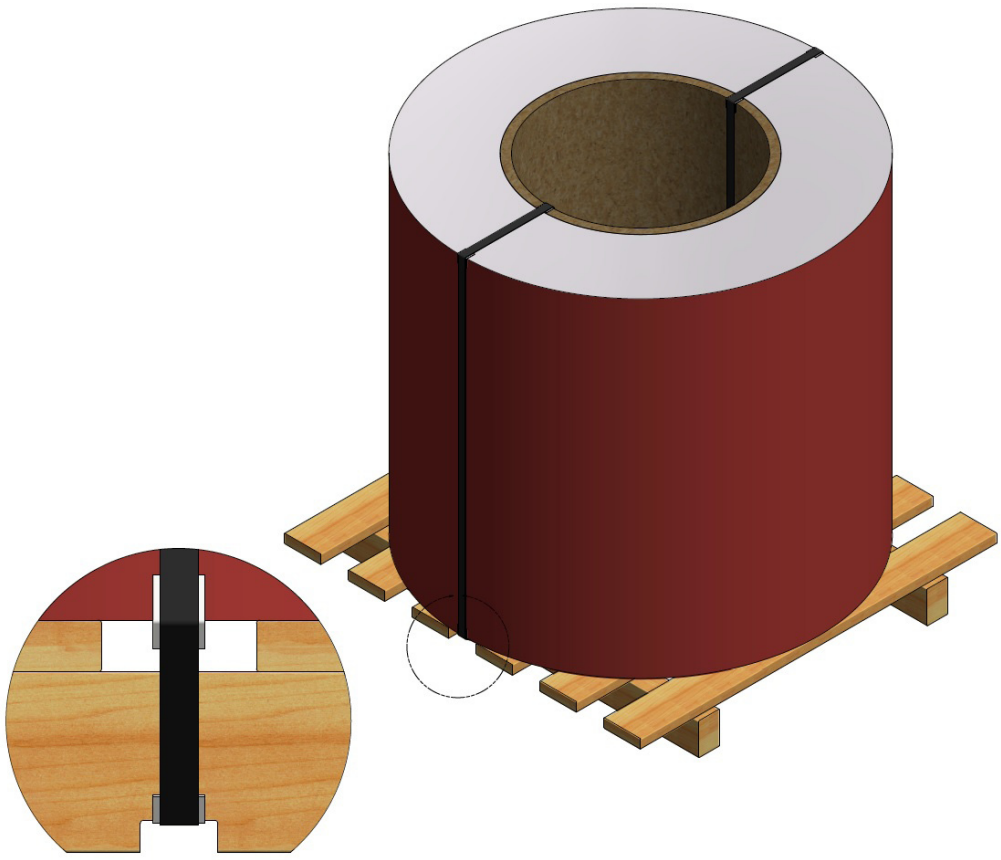


Figure B2. Coil with the eye horizontal or eye-to-the-side orientation.

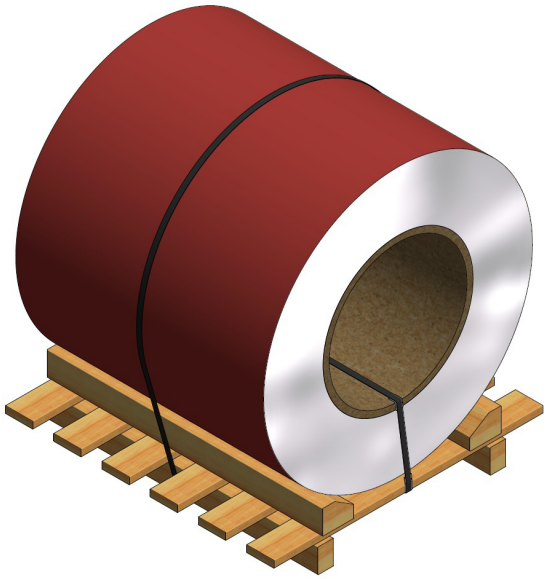


Figure B3-A. Striking a coil either with the forks or an adjacent coil can damage outer wraps.

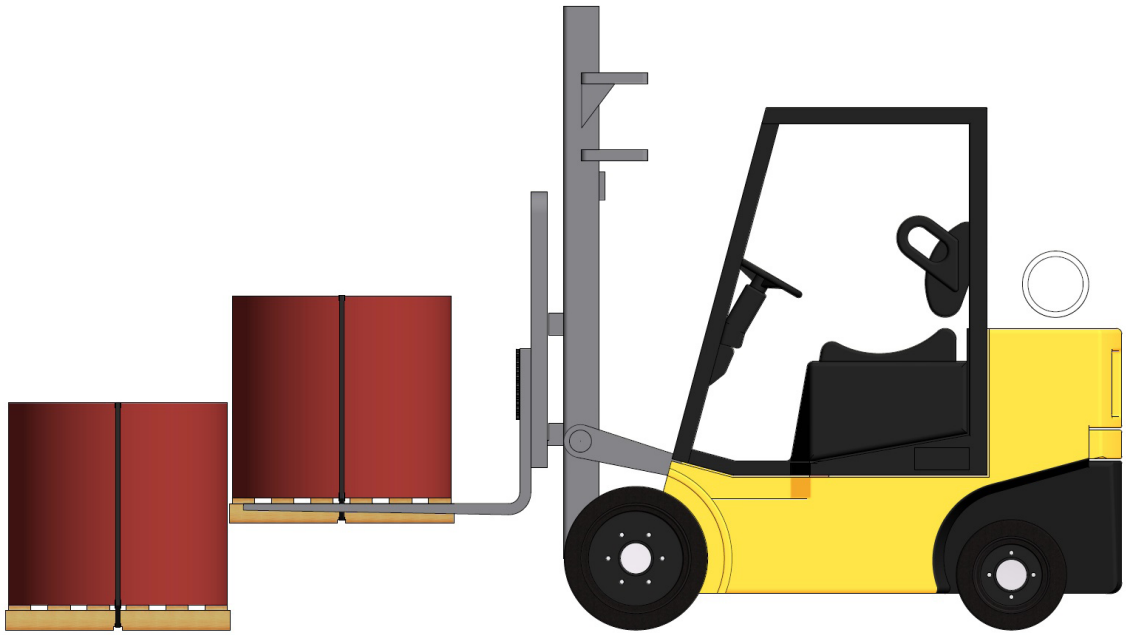


Figure B3-B. Striking a coil either with the forks or an adjacent coil can damage outer wraps.

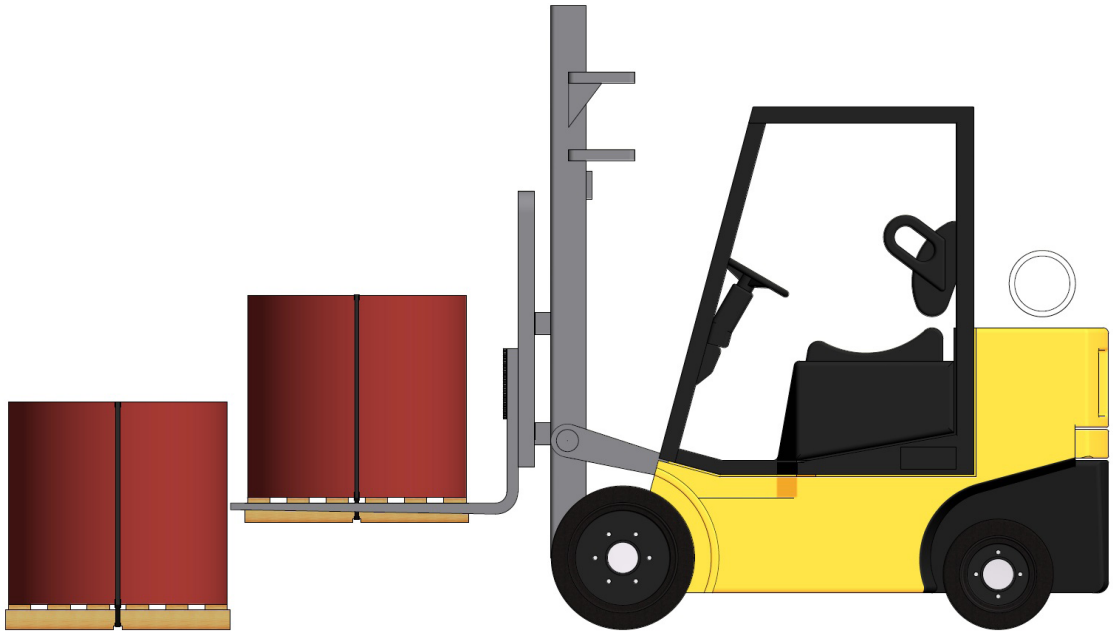


Figure B5. When forks are too short to support the entire skid, the tips may break cross members and damage the coil sidewall.

Figure B6. Eye-to-the-sky coils can usually be stacked safely for storage so long as the sidewalls are smooth.

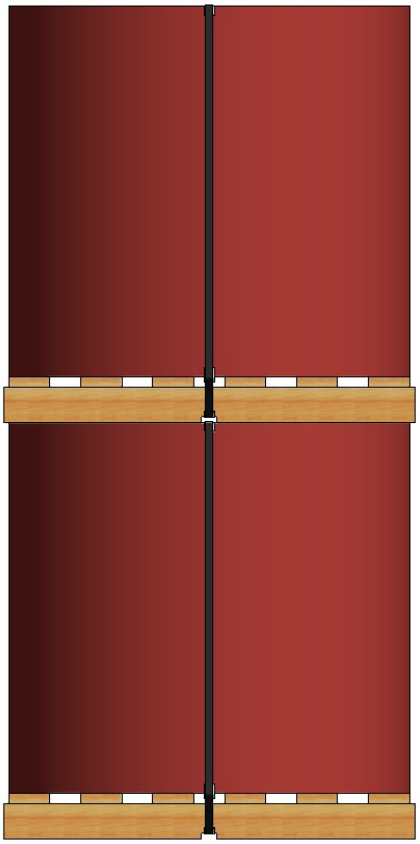


Figure B7. An upender should be used to rotate coils from the eye-vertical to the eye-horizontal position for processing.

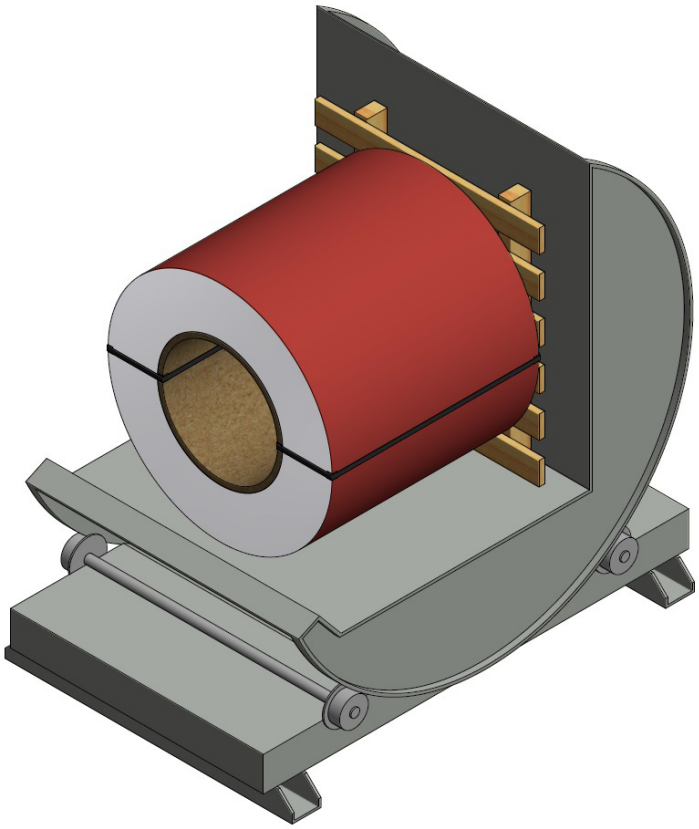


Figure B8. Eye-to-the-side coils will be positioned as shown to facilitate unloading by an overhead crane or side unloading with a forklift.

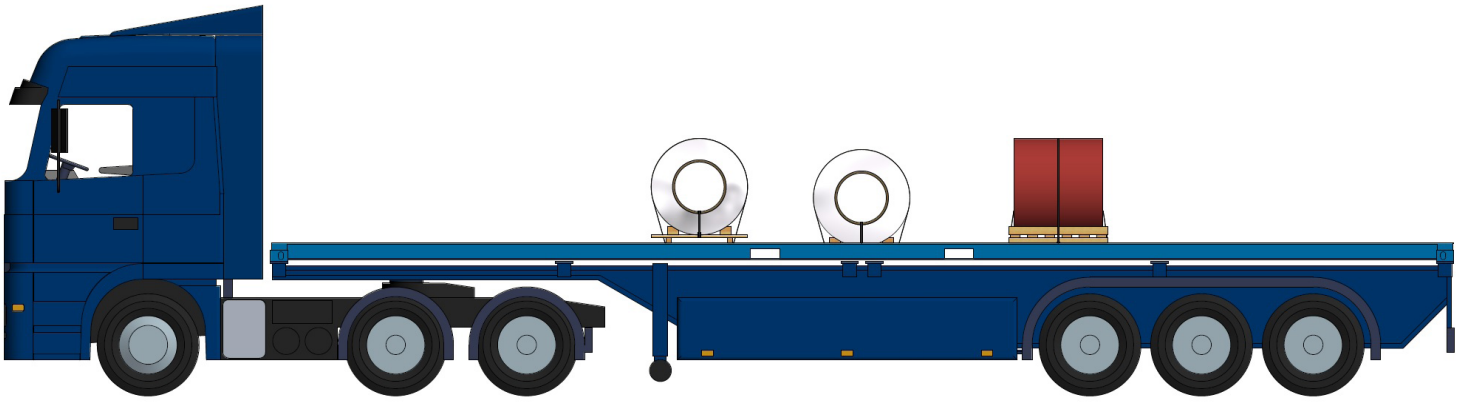


Figure B9-A, B. The best way to unload and move eye-horizozntal coils is by using a "C" hook. The coil must be properly centered and balanced so it remains horizontal.

Figure B9-A. "C" hooks should be contoured to match the inside radius of the coil.

Figure B9-B. Padding the vertical section of the "C" hook helps to minimize damage to coils.

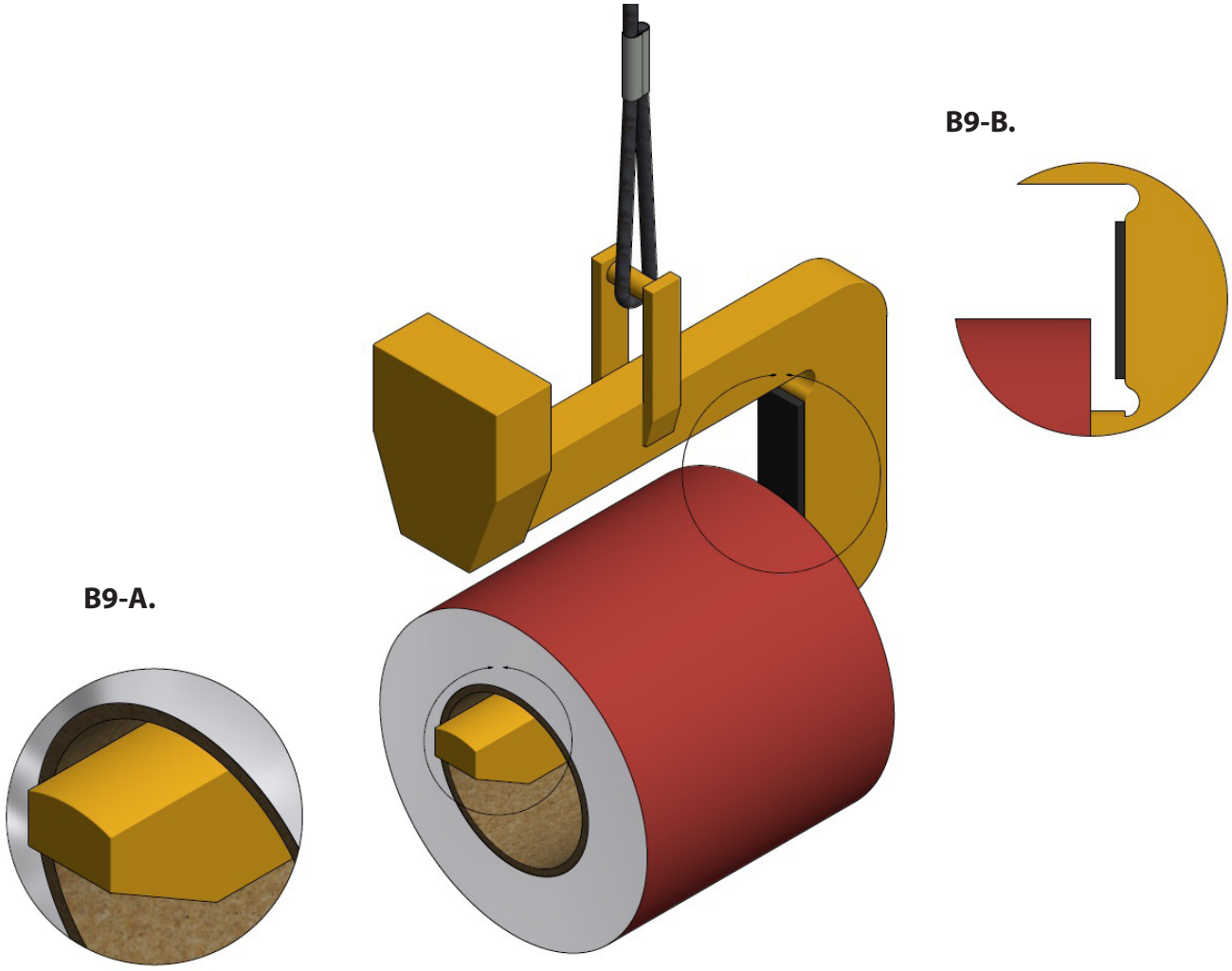
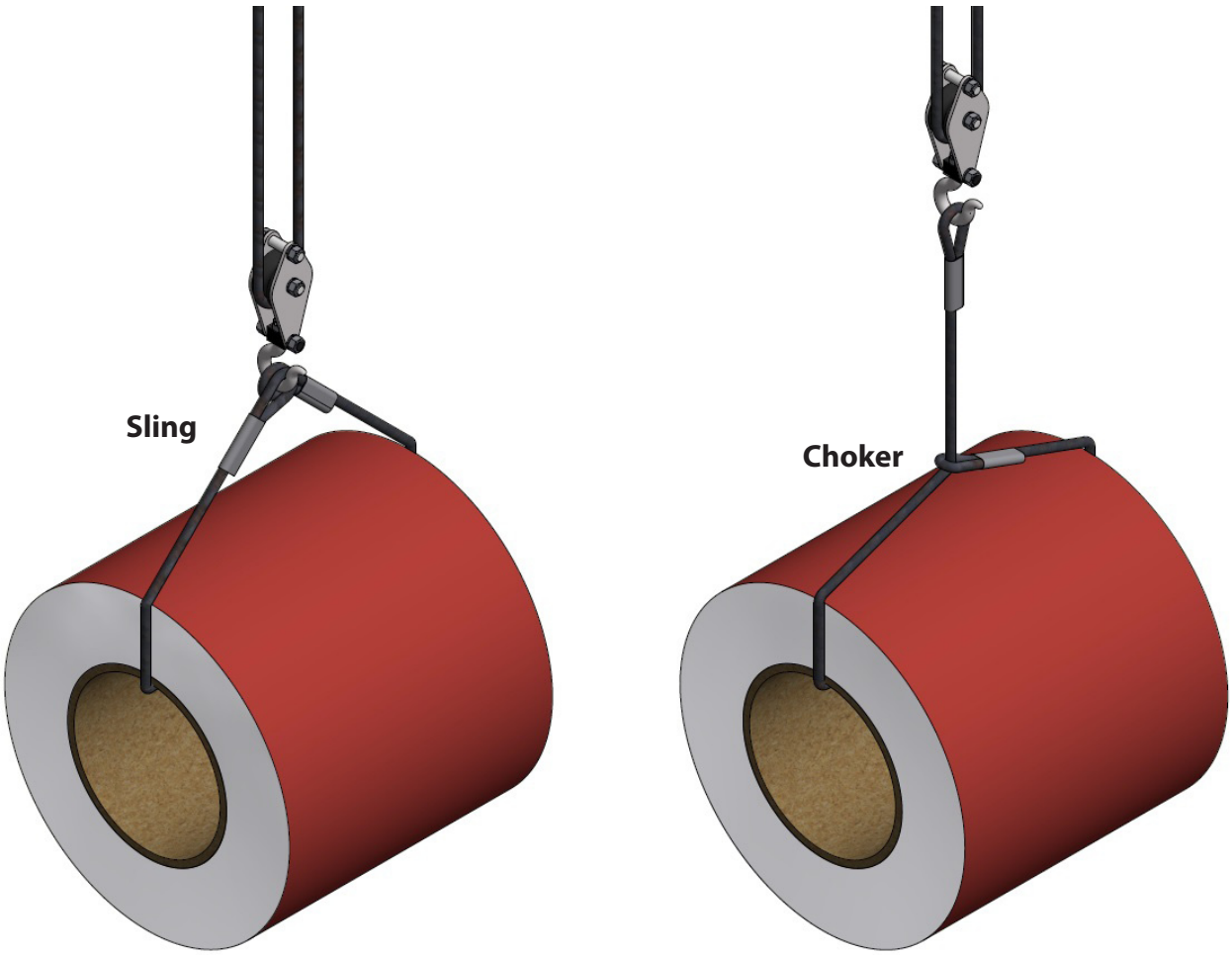


Figure B10. When forks are too short to support the entire skid, the tips may break cross members and damage the outer wraps. This problem is often encountered when coaxing coils to the side of a truck for unloading.

Figure B11. Unloading or moving coils using slings or chokers made from Nylon straps, steel cables or chains will damage coil edges. These procedures should be avoided.



© ATAS International, Inc.