

SEIC Packaging Guidelines

Shipping and Handling Considerations / Main Hazards

Important notice

Be aware that your PO is to be shipped to Russia's Far East, Sakhalin Island. Final destination is Offshore Oil Rigs situated in Okhotsk Sea / Far North. Cargo shipping to this location implicates long multimodal transportation journey, multiple loading/unloading and handling operations, double customs control checks; harsh arctic environment, marine and off-road terrain transportation exposure.

Aforementioned and following main hazards in transportation should always be considered to ensure proper packaging.

Environmental exposures:

SEIC Oil Rigs are located at Far North Sea of Okhotsk. Arctic temperature extremes can range from -50°C to $+40^{\circ}\text{C}$ and can dramatically affect the performance characteristics of improper packaged materials and equipment. Other common environmental exposures include, but are not limited to, dirt, dust, precipitation (very often in Sakhalin), marine (salt water) exposure while sailing. High and low humidity can result in condensation or corrosion.

Punctures and Abrasion: Occurs when the package shifts or comes in contact with other packages or material handling equipment during sorting and other shipping operations. They can also be the result of improper or insufficient internal packaging that does not prevent the contents from shifting, resulting in the product being damaged or the package failing to contain the product.

Compression: Occurs when external forces are applied to the sides, faces or corners of a package.

Stacking, shock, vibration, material handling equipment and tie-down straps all generate compression forces that may result in package or product damage. Proper packaging offers the necessary level of protection against these forces.

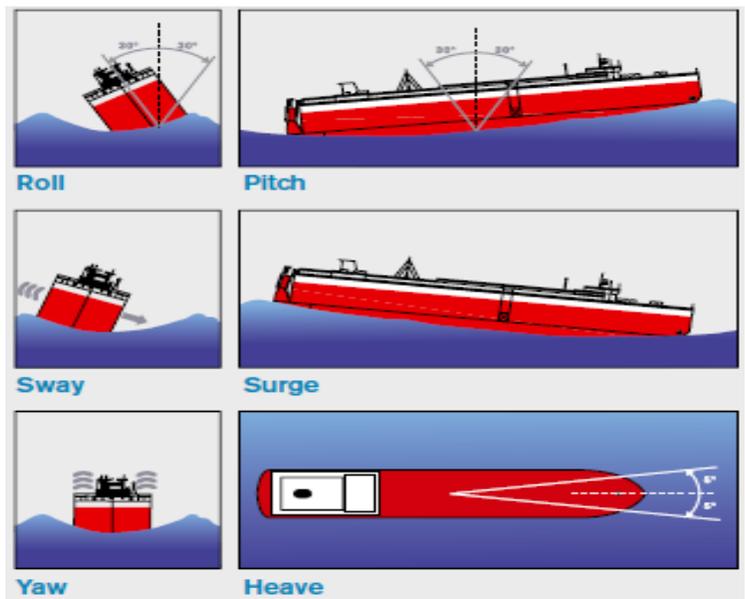
Shipment Handling: Proper cushioning can reduce damage caused by the shock incurred during shipment handling. Proper packaging must be able to protect the contents from the drops and impacts commonly associated with handling operations.

Shock: Occurs during handling and transportation as a result of impacts with forklifts, racks, containers, floors and other shipments. Proper cushioning and dunnage can reduce damage caused by shock.

Vibration: Occurs in trucks while OnIsland transportation caused by bad island road conditions and while sailing.

A vessel at sea is exposed to six different movements, these movements can occur simultaneously!

Customs Check: Occurs during routine customs clearance. Packaging should be restored after the inspection is completed.



When preparing for export, the SELLER shall comply with the following requirements.

1. The SELLER shall be fully aware of all applicable international requirements, regulations, norms, best practices and industry standards of packaging to meet the requirements.
2. The SELLER shall make every effort to protect the GOODS against damage and wear-and-tear when delivered to the point of destination and over a certain period of storage specified in the ORDER.
3. Whenever applicable, the SELLER shall specify an Export Control Classification Number (ECCN).
4. The SELLER shall provide documentation required for the forwarder to release and ship products, including without limitation a Material Safety Data Sheet (MSDS), export licenses, handling, storage, and conservation instructions/requirements, bills of lading, packing lists, preliminary invoices, or packing lists with prices specified, cargo handling certificates, whenever required.
5. The SELLER shall comply with all requirements relative to hazardous materials, including without limitation the International Maritime Dangerous Goods Code (I.M.D.G.), requirements of the International Maritime Organization (I.M.O.), and International Air Transport Association (I.A.T.A.).
6. The SELLER shall ensure accurate marking of all items and packages with the specification of their description, weight, and sizes, handling, conservation, and storage instructions/captions indicating dangerous materials and other relevant/required marking.
7. Cargo must be protected both against mechanical damage (shocks, breaks, destruction, and loss) and corrosion (in case of rain, exposure to marine or destructive environment).
8. The top cover of wood boxes shall ensure its safe dismantling for inventory control (MR) of delivery at the point of destination.
9. A fumigation certificate must be available for wood packaging materials or they must bear ISPM15 stamp.

Packaging shall meet the following requirements:

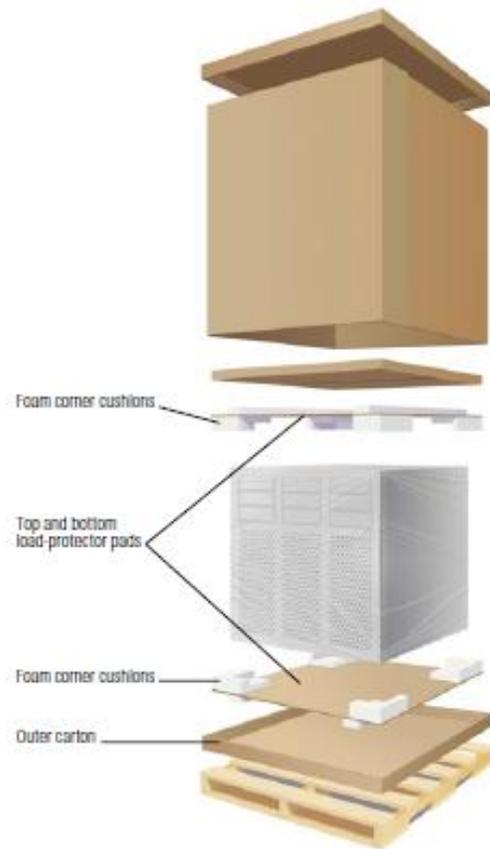
- All goods must be thoroughly cleaned, drained, and dried before packaging in accordance with the established procedure.
Materials inside packaging must be separated from each other to prevent materials contact, shift, or movement which can result in their damage. Separation material must be clean and must not contain any foreign matters or any biological or chemical contamination.
- All Items are to be bagged and tagged with SEIC 10 digits Material Master Number.
- Required conservation and packaging for protection against theft and the severest conditions which are known to exist or are expected during transportation, handling, and storage.
- Any specific requirements during transportation, e.g. orientation, placement, hoisting, etc. must be met.
- All items must be compacted to the extent possible to reduce the volume taking into account items sensitive to friction damage if complete isolation cannot be ensured.
- Packages which are to be transported on pallets must be placed on *two-way pallets* pursuant to the indications in the ORDER. It is not allowed to pack goods to protrude over the top or the side of boxes, containers, or packages. All supports, attaching parts, hoisting traverses and distribution beams, and other materials required for transportation, unloading, packaging, and installation to be provided by the SELLER shall be ensured maximum safe operation without risk of damaging goods. Hoisting traverses and distribution beams should be provided with valid load test certificates. Suitable protective material can be required between the supports and the goods.
- Metal separation: To avoid cross contamination, exotic materials like Stainless, Duplex and Super Duplex steel shall be packed separately from Carbon steel; CuNi materials shall be packed separately from any other material.

Please refer to the examples and Appendixes below to ensure proper and foolproof packaging.

TRUCK STATION RAMP HUB AIRCRAFT RAMP TRUCK

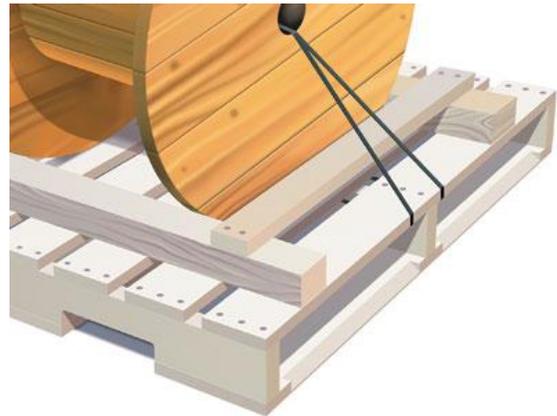
Foam Cushioning

When developing crates or packaging for your palletized shipments, foam is a natural option for cushioning. As part of the end design, it should be engineered to provide the foam density required to protect the fragility level of the product. It should also be validated through testing that simulates the shipping environment.



Wood Blocking

It is suggested to use blocking material such as wood, fastened to prevent any movement, when shipping single heavy goods. The blocking should be placed tightly against the object with a goal of keeping it in a fixed position during all transportation and handling. As a general rule, blocking requires a minimum of two fasteners in each end to prevent pivoting and maintain adequate strength.



Bracing

Items that can roll or shift during transportation due to their shape should be braced on a forkliftable pallet base for shipping. These blocking-strength recommendations are critical when it comes to ensuring stationary orientation during shipping.

Dunnage

Empty spaces in packages can greatly reduce stacking strength, resulting in the package being crushed during normal handling, sorting and loading operations. Remember, stacking does occur and in many cases we cannot guarantee stacking will not occur. Empty spaces can sometimes allow the contents to move freely causing damage to the product and package. We recommend your product be properly blocked and braced with dunnage to prevent movement inside the package. We also highly recommend all voids be filled when shipping product in corrugated fiberboard boxes.

WRONG



The package at left contains steel pins placed randomly into a box. The parts are not banded together and the voids are left unfilled. The pins should be wrapped, taped or bagged to create a bundle. The box should then be filled halfway with dunnage and the banded parts center placed.

CORRECT



The package at right shows the product repacked correctly prior to the top flaps being sealed shut.

Cushioning

Because shock and vibration forces naturally occur during transportation and distribution operations, most products will require some type of cushioning. The cushioning material you select must be able to protect the product from these shock and vibration forces from the time of pickup until final delivery. Cushioning should be resilient and capable of absorbing and rebounding after multiple shock inputs.



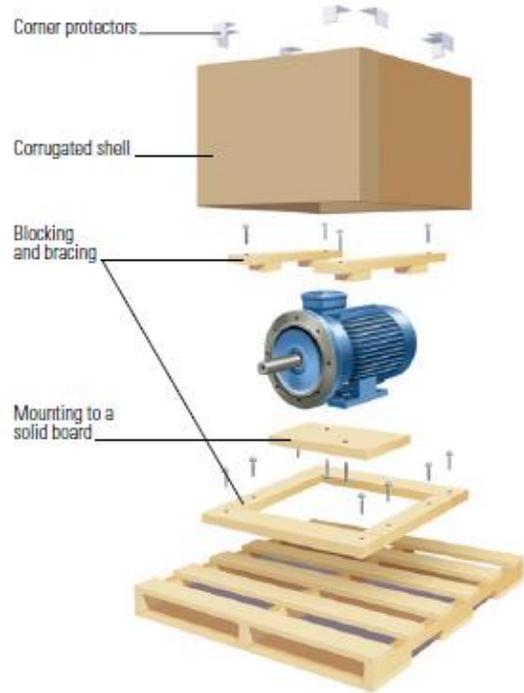
Drums

Use the appropriate drum and cap for shipment. Whether you're shipping one or several, drums should be supported by a solid-bottom pallet for shipment.



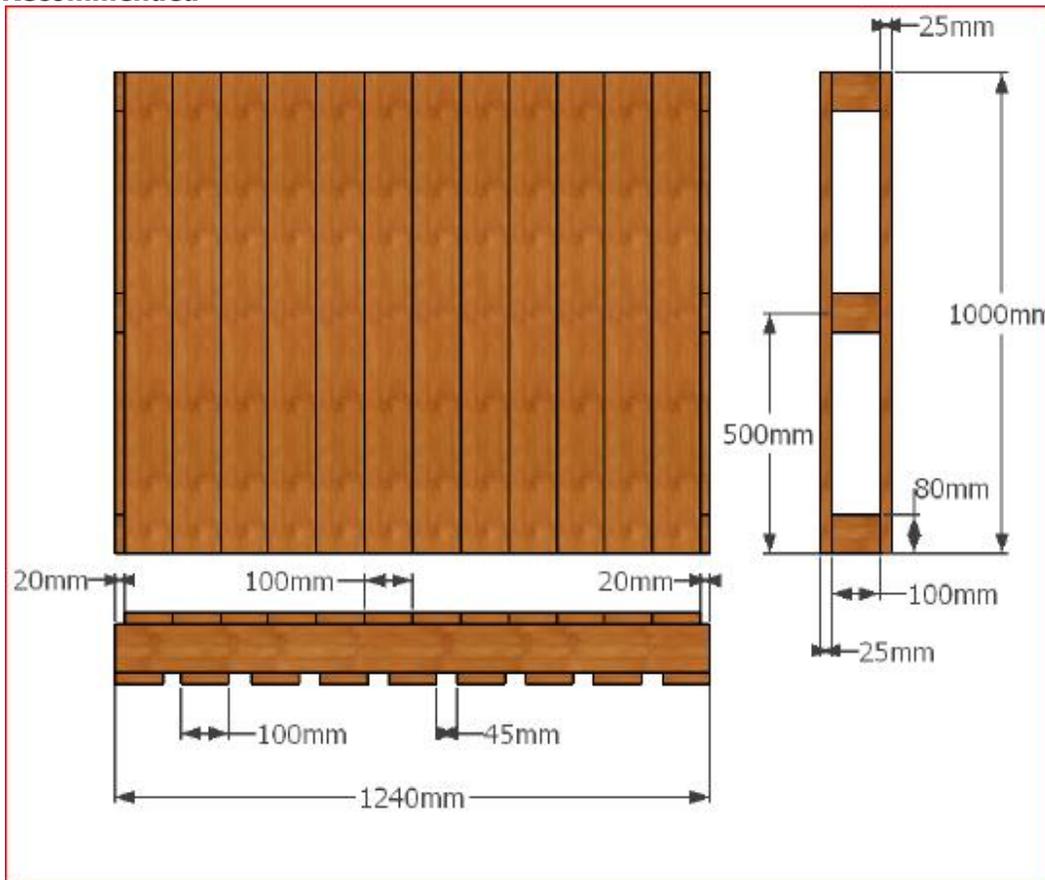
Engines and Other Exposed Items

Drain the item of all fluids. When using expendable packaging, securely band it to its pallet, and block or brace it inside its corrugated container. Add stretch wrap for additional protection.



PALLETS.

Recommended



Load Capacity — not less 1 000 kg

Pallets with broken or missing parts, rough edge, defects, decay, foreign particulate and humidity more than 22% must not be used.

Not Recommended: Corrugated Pallets

Because corrugated pallets are lightweight, easily recycled and preferred by some countries that restrict wood pallets, some shippers opt to use them. However, moisture often causes the corrugate to degrade, and side-to-side strength is compromised. They simply do not stand up to the rigors of the transportation environment, so corrugated pallets are not recommended.



Not Recommended: Wood Pallets Without Bottom Boards

Because wood pallets without bottom boards don't distribute weight evenly, the stringers can warp or turn in, and side-to-side strength is compromised. These pallets simply do not stand up to the rigors of the transportation environment, so we do not recommend them.



MANDATORY INSTRUCTIONS FOR OVERSIZED AND HEAVY CARGO

Oversized and Heavy Cargo (DIMS exceed design limits for a transport vehicle (container, aircraft cargo compartment) legal rights-of-way or public roadways and/or its handling involves crane, hoist or lifting equipment)

- Long Freight shall be tied or packed in bags with top pickup points.
- Slinging points at the bearing ties and bagging shall be labeled on the cargo.
- On each cargo both the slinging points and Center of Gravity shall be labeled, including the following:
Contract / WO No. _____.
Nett weight _____.
Gross weight _____.
Crate dimensions in cm _____ (length, width, height).
- Oversized and heavy cargo both packaged and not, and intended to be shipped to offshore platforms shall have:
 - Clearly labeled Slinging points and Center of Gravity.
 - Weight lifting nodes (lifting eyes, eye screws, eye bolts), as well as removable lifting equipment, such as attaching clamps, metallic slings, with testing certificates indicating data on testing with load.
 - Twice as big as the operation load, operation temperature, unique serial number, date of the recent inspection, and ideally — the date of the next inspection (Company's Standard 0000-S-90-04-0264-00-E Revision 06 Use of Cranes and Lifting Equipment) — Examples of the documents in Appendix.
- In case heavy equipment is packaged into containers, loading chart for containers shall be available with indicated weight and dimensions of package inside; containers loading shall be balanced in order to avoid skews during lifting which may result in shifts/tipovers of the materials.
- Frame structures shall have certificates confirming absence of defects in welding joints at lifting eyes, the frame's designation (what it is for: transportation or lifting is allowed), operation temperature.
- For cargo with complex configuration of bearing surface (cylindrical, spherical, and conical) special props, bed boxes and keel-blocks shall be provided — these are needed for stacking up at warehouse and decking on a means of transportation.

Handling labels should be highly visible and placed on all sides of the package This can reduce the chances that a package is flipped, rolled or tumbled in search of shipping labels. It is recommended that both pictorial markings and text be used for each of the special handling requirements.

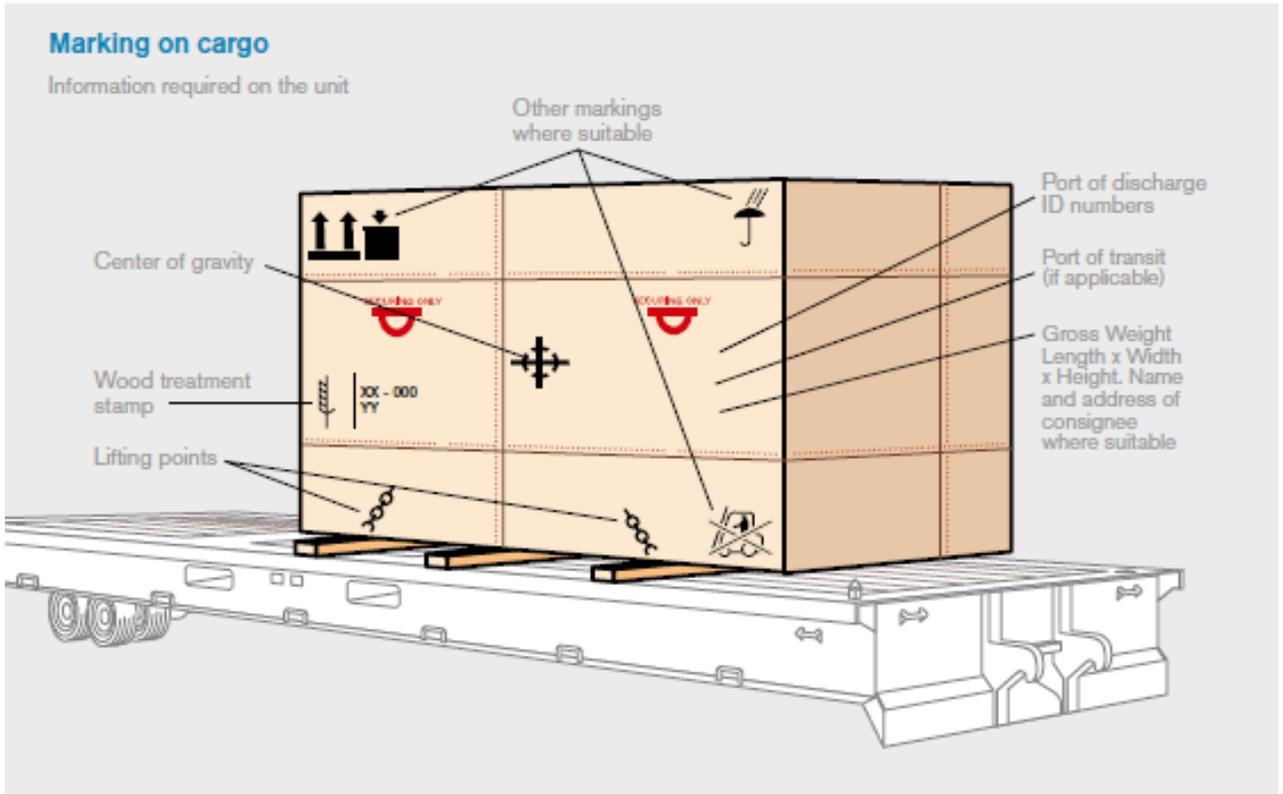
Top Heavy

Place on all sides of package. Recommended any time a package height is more than 48" and the center of gravity is higher than 24" or when the package falls over when tipped.



Center of Gravity

Place on all side panels and on the cover or top panel. Forklift access points should allow handlers to keep the center of gravity between the fork blades.



Securing points shall be well distinguished and properly marked for **"lashing only"** and attached directly to the unit inside the crate. They are accessible and of sufficient size for the hooks on the lashing chains. If the securing points are not designed for lifting it is of **utmost importance that this is marked**.



Hazardous Materials and Substances

- Hazardous cargo shall be packaged in compliance with the Packaging Regulations by IMDG or ICAO depending on the type of shipment.
- Regardless of their capacity all the containers and packaging units shall be securely fastened to pallets/trays, or their construction shall be designed to provide the possibility of mechanized loading and off-loading.
- All types of containers and packaging shall ensure tightness during shipment and storing.
- Material Safety Data Sheet (MSDS) is mandatory for each type of cargo; MSDS shall be not only shipped in hard copy accompanying the cargo, but also sent together with consignment note beforehand.
- Drums and containers must be factory made, new, durable, in a technically flawless and reliable condition, preventing leakage and spill, providing safety and security of the transportation. Materials the drums and containers are made of must be chemically inert to its content.
- If design of drum and/or container allows sealing and/or locking the outlets, shipper must ensure that drums and/or canisters are properly sealed and/or locked.

Labels shall comprise the following:

- On the packaging (EACH BARREL, CANISTER, BOTTLE, CYLINDER), as well as tray with cargo — danger sign, shipping name, UN number, Classification Code.
- On large-size containers — danger sign, UN number, as well as number of emergency card in case of railway transportation.
- Emergency card without number shall be attached to shipping documents.

Packaging Pipes and Similar Loads

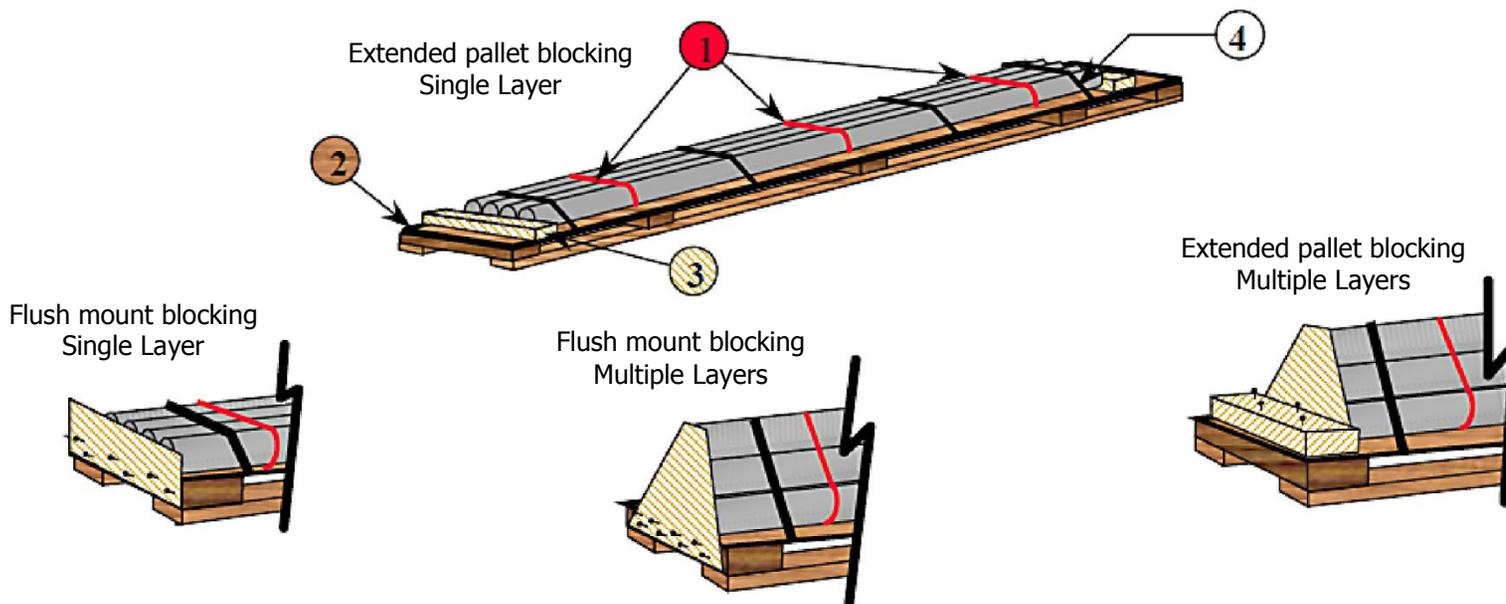
These types of shipments will require special packaging to prevent the product from puncturing or damaging the aircraft, equipment or other shipments during flight, loading, unloading and sorting operations. Any shipment where the product(s) can telescope away from the rest of the load will require end protection. Examples include but are not limited to pipes, rods, tubing, antenna components, angle iron, steel or other heavy objects.

1 Bundle: Two or more articles bound together to form a single package or pack. Multiple bundles may also be combined to further unitize a load and ensure containment throughout distribution. This can be done with strapping or filament tape. Bundling increases the integrity of the load and can reduce loss and damage in the event the load becomes separated from the pallet during transportation and handling.

2 Pallet: A low portable platform of wood, plastic, metal, fiberboard or combinations thereof, that is elevated enough to allow for forklift access and aid in handling. The platform must elevate the entire load at least 6" from the ground. Long shipments will require a platform to run the entire length to allow for end blocking.

3 Blocking: Materials used in packing and loading to maintain shipments in a fixed position during transit by bracing them against the shipment. The most common material used for blocking is wood. The blocking is fastened to the pallet to prevent the load from shifting and keep the individual pieces from telescoping out from the end of the shipment.

4 Securing: Use strapping material to secure the bundled load to the pallet. The strapping is designed to hold the shipment to the pallet and prevent it from coming out of the blocking.

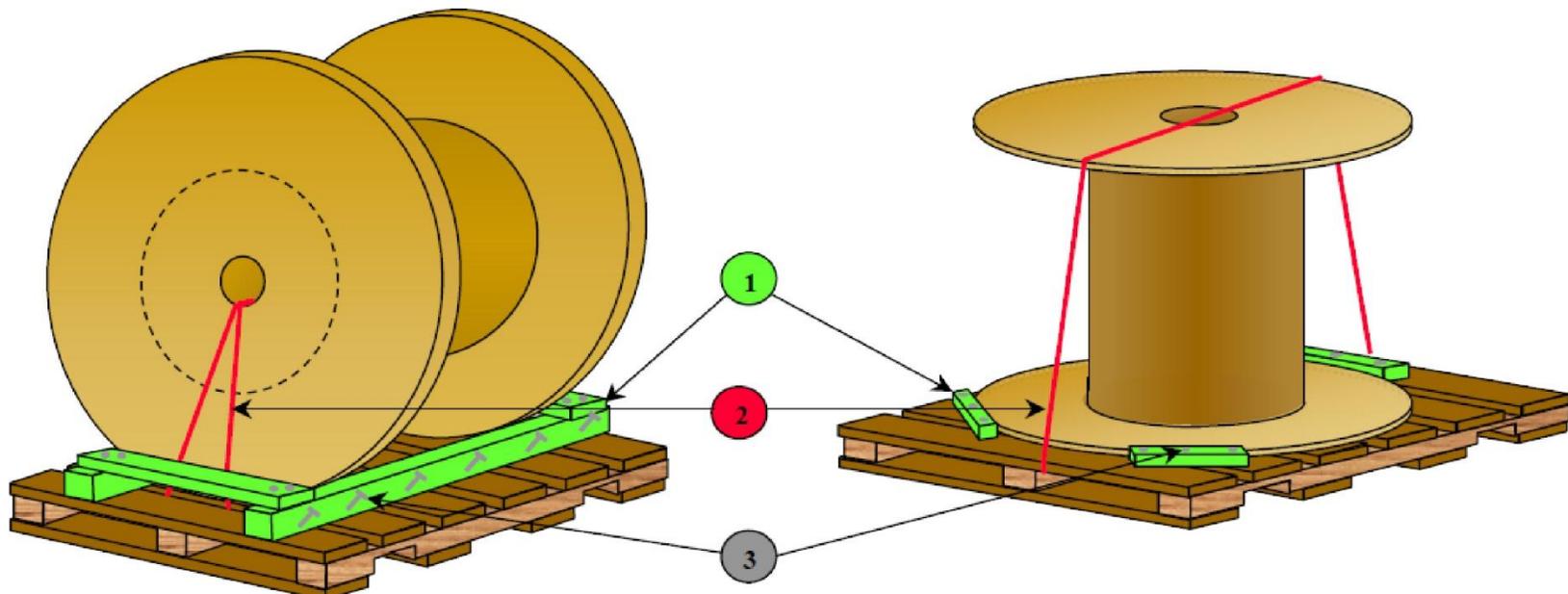


Securing Spools and Reels

Definition: A cylinder with an edge or rim at each end and an axial hole for a pin or spindle on which to wind a flexible material such as wire, cable or rope.

Handling issues: These items can roll and shift during transportation due to their shape. They are hard to lift and move without damaging the edge or rim. Some products packaged on spools and reels can only be handled in the vertical orientation without the product being damaged. In addition, when spools or reels are stood on edge their weight is concentrated in a very small area which often exceeds the floor bearing weight capacity of our aircraft. It is for these reasons spools and reels must be secured to a forkcable platform for transportation.

- 1 Blocking:** Materials used to keep objects in a fixed position during transportation and handling. The most common blocking material is wood. The blocking should be placed tightly against the object being secured to prevent any and all movement.
- 2 Strapping:** A flexible strip material used as a medium to fasten, hold or reinforce. Steel strapping is preferred over plastic strapping on loads over 500 pounds because it does not stretch. Locate strapping where it is not exposed to damage during handling. The primary purpose of strapping is to keep the spools or reels from bouncing out of the blocking. The blocking is what prevents the load from shifting.
- 3 Fasteners:** Any device used to secure one part against another, Nails, screws and staples are the most common types used with wood. Blocking requires a minimum of two fasteners in each end to prevent pivoting and maintain adequate strength.



Securing Drums to Pallets

1 Pallets

- Must be sturdy and strong enough to support the load. Hardwood lumber is recommended,
- No broken boards or protruding fasteners allowed.
- Minimize gaps between the deck boards.
- 4-way forklift entry preferred.

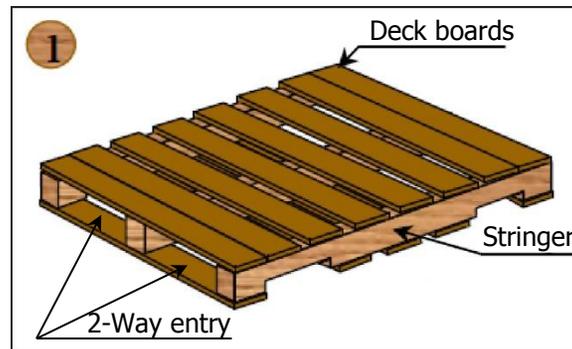
Warning-liquid filled drums can be very heavy and care must be taken not to exceed the pallet weight capacity.

4 Loading the Drums

- Do not allow overhang.
- Keep load as close to center as possible.
- Multiple drums must be bundled tightly together using the least amount of pallet surface area as possible.

2 Corrugated Sheet

- Must be between drum and pallet decking.
- No piece should be smaller than the base of one drum.
- Reduces wear and punctures caused by decking fasteners.

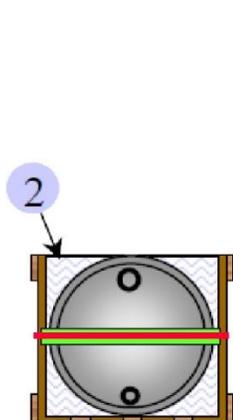


3 Interface Material

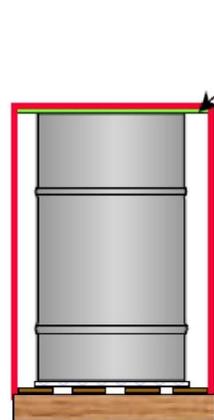
- Should be something the strapping can dig into such as wood or heavy paperboard.
- Prevents steel-on-steel contact and slipping,
- Spreads the force exerted by the strapping.

5 Strapping

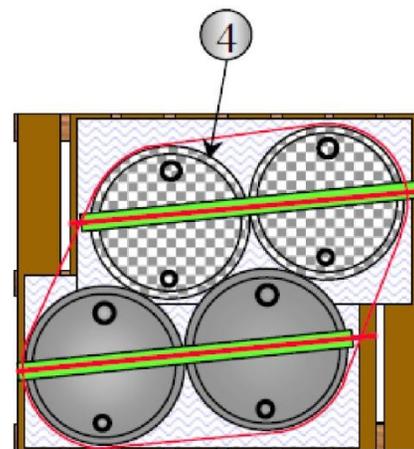
- Steel strapping is preferred because it stretches very little.
- Strap multiple drums together first, This creates one unit which is easier to secure.
- Use an interface material under the strapping and drum to distribute the load and prevent slipping. This is not required under the strap used to bundle multiple drums together.
- Keep strapping as close to the drum sides as possible, This limits the load shifting and protects the strapping from, damage. This may require running the strapping between deck boards instead of out to the edge of the pallet.



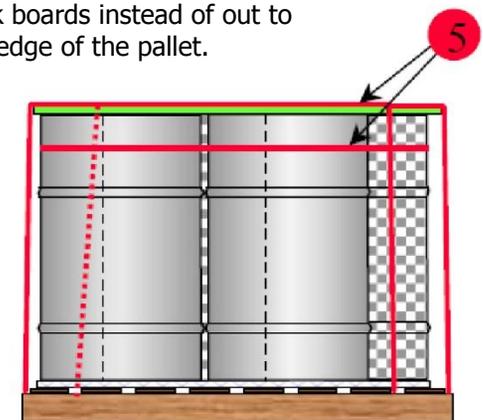
Single drum — top view



Single drum — front view

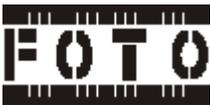
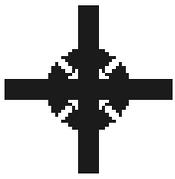


Multiple drums-top view



Multiple drums-front view

Cargo Labelling Signs

 <p>1. Caution! Fragile</p>	 <p>2. Guard against radiation</p>	 <p>3. Avoid exposure to moisture</p>	 <p>4. Avoid exposure to radiation</p>	 <p>5. Limited temperature</p>
 <p>6. Perishables</p>	 <p>7. Water-tight package</p>	 <p>8. Do not use hooks</p>	 <p>9. Strapping point</p>	 <p>10. Do not use a trolley</p>
 <p>11. Top up</p>	 <p>12. Centre of gravity</p>	 <p>13. Tropical packaging</p>	 <p>14. Do not stack</p>	 <p>15. Lift holding by cargo</p>
 <p>16. Open here</p>	 <p>17. Avoid exposure to sunlight</p>	 <p>18. Do not roll</p>	 <p>19. Limited stacking</p>	 <p>20. Clamp here</p>
 <p>21. Do not clamp</p>	 <p>22. Limited number of tiers per stack</p>	 <p>23. Do not use fork loader</p>		

Labelling of Dangerous Cargoes



Explosives



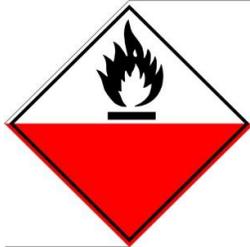
Non-flammable gas



Flammable liquid



Flammable solid



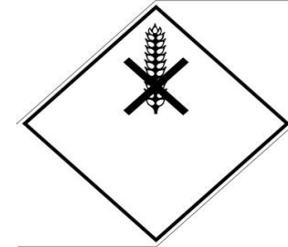
Spontaneously combustible



Oxidizer



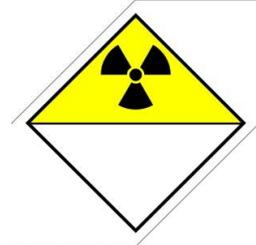
Corrosive



Harmful



Infectious substance



Radioactive



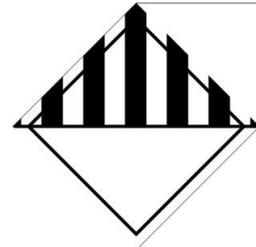
Radioactive



Radioactive



Toxic



Miscellaneous