

# Marking, Packaging, Preservation, and Shipping Requirements

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# Marking, Packaging, Preservation, and Shipping Requirements

## 1.0 Purpose / Scope / Timing

Users are reminded of the fact that “Packaging” function is the main link of the logistic chain as far as the physical distribution of goods is concerned. That is why the “Industrial Packager” shall not apply his professional knowledge but first and foremost provide for the necessary means and organization that enable him to undertake all appropriate actions to ensure balance between the economic value of the product to be packaged, it’s inherent fragility, and the aggressions to which it will be exposed during different phases of its routing up to its point of use. Goods shall be packed in solid packages as follows:

- Suitable for long-distance transportation (using several means of travel)
- Suitable for repeated handlings
- Suitable for repeated loading and unloading (indoor and outdoor)
- Suitable for long term storage period (minimum 12 months- storage code declared by vendor and marked on package must involve good preservation of material during required 12 month storage period under declared and marked storage code)
- According to their characteristics, adopt moisture, mold, rust and corrosion resisting measures to ensure the equipment can reach the site of installation without damage or corrosion

**Any deviation to this specification requires the supplier to submit an SDR through the SDR system.**

### 1.1 Scope

- 1.1.1 This specification covers the documented general requirements for original planned shipments of material sent to an GS factory or directly to site (for both inbound and outbound shipments). General packaging, marking, preservation and shipping requirements for domestic and international shipments will be outlined within this spec.
- 1.1.2 This specification applies to all GE Grid Solutions (GS) completed or in process items shipped domestically or internationally (exported or imported).

### 1.2 Communication

- 1.2.1 GS Sourcing is the authorized interface for all communication between GS and the External Supplier. All questions or requests for additional information shall be submitted to GS for clarification. Conflicts between applicable specifications or drawings shall be submitted to GS for resolution by engineering.
- 1.2.2 All communication with internal suppliers, including questions or requests for additional information, shall be submitted to Materials and Processes Engineering or the appropriate GS representative.



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## 1.3 Compliance Date

- 1.3.1 Full compliance from all organizations within scope is expected at the time of issuance of this document. This document replaces and simplifies the former GE Grid Solutions specification P23E-AL-0255 Rev P, General Requirements – Marking, Preservation, Packaging and Shipping.
- 1.3.2 Requests for deviation to the requirements of this specification shall be submitted as follows:
  - a. External Supplier – To GS Sourcing by Supplier Deviation Request (SDR).  
Note: SDR form will be specific for each business/site. Please contact your buyer/SQE to obtain SDR form (If needed).
  - b. Internal Supplier – To the appropriate engineering personnel by business specific nonconformance notification practice.
- 1.3.3 Because of their intrinsic specificities, some kinds of materials need a dedicated packaging specification. A SR (Special Requirement) has to be created for certain types of materials. In the cases where an SR needs to be issued the following applies:
  - a. If GE has defined the dedicated packing specification (SR), the supplier shall examine the contractual document and apply this Special Requirement on the material to be packed.
  - b. If GE hasn't defined any dedicated packing specification (SR), it is the responsibility of the supplier to propose to GE a packing procedure (including sketches, drawings...) through the SDR process. This packing procedure will become a Special Requirement (SR) after GE approval.

## 2.0 Procedure / Quality Record Requirements

### 2.1 Preservation

- 2.1.1 Products susceptible to corrosion must be packaged in a dry non-corrosive environment for the duration of shipment and storage, for a minimum of 1 year. The degree of protection depends on item being packaged.
- 2.1.2 Cleaning
  - a. Before application of preservative materials, the supplier must verify they are in compliance with the System and Components Cleanliness Requirements 362A2412.
  - b. All surfaces that require protection from corrosion shall be cleaned with solvents or detergents for removal of oil, grease, salts, dirt, fingerprints, and contaminants. Solvents that contain chlorofluorocarbons (CFC's), trichloroethane, or other ozone depleting compounds shall not be used. Cleaned parts shall be handled with clean gloves to avoid re-contamination before, during and after preservation.



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- c. After cleaning immediately dry to remove cleaning solutions or any remaining moisture left on the commodity or part to be preserved. Use clean cloths, heat lamps or a drying room. Finally, place the unit in a low humidity environment prior to the packaging of the unit, allowing excess moisture to evaporate. (Note: Period of time will depend on moisture present on the unit and within the environment.) Other processes are acceptable pending GS approval.

### 2.1.3 Selection and Application

- a. Items not covered by product specific preservation specifications, shall be preserved and protected for the duration of the shipment and storage cycle to be determined by the GS contract, but no less than a 1 year period from leaving the supplier's facility. Preservation agents if not covered under the ordering specifications that do not meet the 1 year period are acceptable after written approval from GS and annotation on the storage docket of the required time intervals for reapplication. Preservation type and method of removal must always be included with all commodity shipments and long-term storage procedures.
- b. Unless otherwise specified in the ordering sheet or purchase order, the equipment shall be painted and preserved per the applicable GS specifications. Resolution of conflicts in documents or clarifications should be directed to the GS Sourcing Quality Engineer (SQE).
- c. For lubricating oil systems, a compatible Vapor Corrosion Inhibitor (VCI) containing turbine grade lubricating oil should be flushed through the system, and placed inside all lubricating oil tanks and reservoirs to provide adequate corrosion protection to all internal system components.
- d. All machined surfaces of materials susceptible to atmospheric corrosion require preservation and protection. Typical corrosion preservative materials include Vapor Phase Inhibitor (VPI) or VCI impregnated materials such as papers, foams, plastics, oils, thin film and waxy coatings. Preservative material must easily be removed with solvent or other suitable cleaning methods, before product installation and operation.
- e. Internal system components for lubricating oil systems need corrosion protection. A compatible VCI containing turbine grade lubricating oil should be flushed through the system and placed inside all lubricating oil tanks and reservoirs to provide adequate corrosion protection. Other processes are acceptable pending GS approval.
- f. For External Suppliers, preservation of machined surfaces of items other than rotors, large shells and casings, large fabricated frames structures, and assembled turbines and generators, is covered in specification P23E-AL-0266.
- g. In all cases, appropriate quantities of suitable and compatible corrosion preservative materials shall be used. Preservative manufacturer's instructions for use and application shall be used. If there is any doubt about product compatibility with equipment during shipment and storage, consult the product manufacturer, GS Engineering, and the SQE.



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- h. Components covered with LOB or Graphite Dry Film Lubricant will follow supplemental packaging requirements covered in P6A-AG6.

### 2.1.4 Plated, Bare Metal, and Painted Surfaces

- a. Plated, bare metal, and painted surfaces must be protected from direct contact with wood or fiberboard using a durable non-hygroscopic material. Bare metal and plated surfaces must be properly and adequately preserved against corrosion and discoloration. Metal surfaces that are susceptible to corrosion should be finished, painted, or coated to provide permanent protection. (Note: Gases require special approval by the GE Power & Water Engineer, Buyer, and SQE due to the potential hazards.)
- b. Coatings for metal need to produce uniform high resistance to electrical current, be pore-free, have excellent adhesion, be resistant to damage from impact and abrasion, be resistant to moisture absorption, be splash resistant to product spills, and resist degradation with time and exposure to the environment.
- c. All painted surfaces must be protected from direct contact with wood or fiberboard using a durable, non-hydroscopic material. Painted surfaces must be properly and adequately preserved against corrosion.

### 2.1.5 Protection of Critical Surfaces and Openings

- a. All machined, bright finished, or other critical surfaces shall be protected by preserving, wrapping, capping, plugging, blocking, covering, and/or other suitable methods to protect against corrosion, dust, moisture, abrasion, or any other damage that is detrimental to the appearance and/or function of the part or equipment. These surfaces must be protected for the duration of the transport and storage cycle of the GS product.
- b. Pressure sensitive adhesive tape can only be used when in compliance with P23A-AG2. Tape may be used to secure plastic bags or plastic coverings only as temporary covers. Tape shall not leave adhesive residue on any surface after being removed.
- c. Blind Holes (open one end only) and through holes (open both ends) must contain an appropriate amount of VCI containing material. These holes must then be sealed or capped in accordance with this specification. Note that through holes must be capped or plugged at both ends.

### 2.1.6 Pipes/Metal Rods/Similar Items

- a. It is critical that sub-components and assemblies be protected against corrosion during the shipment and storage of these items to include protection externally as well as internally with items such as pipes/hollow rods.
- b. Items not covered by GE Grid Solutions specifications, shall be preserved and protected for the duration of the shipment and storage cycle to be determined by the GS contract, but no less than a 1 year period from leaving the supplier's facility.



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Preservation agents that do not meet the 1 year period are acceptable after approval from the buyer, sourcing quality engineer and annotation on the storage docket of the required time intervals for reapplication.

### 2.1.7 External Thread Protection

Protect all external threads greater than 1" diameter from physical damage with a suitable non-hygroscopic thread protection material such as plastic shielding, wax impregnated fiberboard, or other suitable protective material. Materials such as untreated fiberboard or wood shall not be in direct contact with metal surfaces.

### 2.1.8 Electrical Equipment

- a. A suitable quantity of a VCI impregnated material, to last for a period of one year, shall be placed inside all electrical control cabinets, junction boxes, breaker panels, and other similar electrical equipment, that contain electrical instrumentation, terminal strips, switches, relays, etc., for all shipments.
- b. The VCI product may or may not need to be removed prior to equipment operation depending upon the type used and the equipment being protected. If VCI product must be removed before equipment operation, then there should be clear and easily visible instructions indicating this.
- c. All electrical connections and terminal boards that are not inside sealed, weather tight cabinets shall be coated with a compatible, permanent insulating paint, lacquer, or varnish. The protective insulating coating material shall be pigmented so that its presence can be readily seen.

### 2.1.9 Gaskets

- a. Gaskets must be applied to each side of the barrier bag and caulked where a barrier bag is punctured to allow for support or bracing of item.
- b. Synthetic gasket materials shall be appropriately wrapped to minimize dust contamination and exposure to sunlight.

### 2.1.10 Barrier and Wrapping

- a. Barriers shall be designed to exclude or retain water, water vapor, grease, or certain gases within or outside of the package. Type and amount used depends on the expected relative humidity & exposure time.
  - Plastic Barrier Materials - Short term only, moisture migrates through quickly.
  - Foil Laminated Barrier Materials - Long term solution, moisture migrates through slowly
  - Tape Sealed Joints - Short term moisture protection for barrier joints
  - Heat Sealed Joints - Long-term moisture protection for barrier joints



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- Vacuum Pack - Air pressure is removed from the interior of the barrier material, joints are heat sealed, and desiccants are always used.
- b. Wooden braces should always be placed on the outside of the barrier bag and positioned so that puncture to the barrier bag will not occur. Exposure of finished and unfinished surfaces to hygroscopic materials or materials that contain moisture must be avoided unless proper precautions are taken.
- c. Never seal wood or other high moisture cellulose products in a barrier bag.

### 2.1.11 Shrink Wrap

- a. The heat shrink-wrap must be blue or white and have a minimum thickness of 7 mils. Transparent shrink-wrap often called cling wrap is not allowed for covering equipment. A VCI Poly film is recommended due to its corrosion resistance properties.
- b. When shrink wrap is used ensure that water will not become trapped and corrode the commodity and ensure that the manufacturers recommendations for application are followed.
- c. Shrink wrap can be used as an alternative to crating of enclosed structural members and fluid system skids with an approved SDR.

### 2.1.12 Desiccants

- a. Desiccants are best if used in closed/sealed moisture barrier, or a rigid/sealed container. Desiccant cannot be used in the same enclosed space as VCI Products. Desiccant must not contact the commodity and should be evenly dispersed within the package.
- b. In selecting a desiccant the following must be considered:
  - the air space size
  - the nature/type of the material to be used
  - the moisture surrounding the package
  - the desired shelf/storage life
  - the atmospheric conditions when/where the package is sealed.
- c. The minimum quantity of desiccant to be placed inside a bag shall be determined from the manufactures recommendation.
- d. In large enclosed areas, desiccant bags will be suspended to allow moisture collection away from material.
- e. Clay desiccants are made from montmorillonite clay, which have a special affinity for moisture. Clay desiccants are naturally occurring, non-hazardous, moisture adsorbent substances. The clay is chemically inert and non-corrosive. The layered structure attracts and adsorbs moisture onto the surface and between the layers of the clay.



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- f. Silica gel is silicon dioxide (SiO<sub>2</sub>), an amorphous form of silica. Two important properties of silica gel are that it is non-toxic and non-corrosive.
- g. Molecular sieve is a manufactured crystalline version of Elite and is a non-hazardous material.

### 2.1.13 Humidity Indicators

- a. Humidity indicators must be used for items requiring desiccant. Place humidity indicator behind an inspection window or immediately within the closing edge of the barrier material and as far as practicable from the nearest unit of desiccant as shown in the figure below.



- b. Use a three-spot paper card type 1x4 inches in size or approved alternative. The spots indicate relative humidities of 30 percent, 20 percent, and 10 percent, top to bottom, by changing color from blue to pink.

## 2.2 Storage

### 2.2.1 Requirements

- a. Storage shall be assumed to be a minimum duration of 1 year.
- b. Use proper amounts of desiccants and VCI according to cube of interior space.
- c. Container shall be properly marked to identify storage requirements. Unless other instructions are received, assume outdoor storage. If unable to store outdoors, an SDR needs to be submitted for approval.
- d. Waterproof stenciling shall be used to prevent deterioration from water or sun.

### 2.2.2 Packaging

- a. Wood or metal enclosure is required when long-term storage is required.
- b. Top of packaging will be constructed in a manner that will allow any water to shed off the top.
- c. Roof felt or waterproof tarps will be placed over the top cover to prevent water seepage and material degradation.





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- d. Easy access is required for maintenance of commodity and preservation of material. Hinged doors or labeled access ports shall be provided for inventory.

### 2.2.3 Preservation Docket

- a. For all items, the supplier will provide a preservation docket (checklist) next to the packing list on the outside of the product or container. If no maintenance will be required for the storage period, a preservation docket still needs to be supplied with a statement of "No maintenance required" added to the document.
- b. This docket will allow for the written summary of all maintenance requirements for internal/external storage as shown in Figure 1 below.
- c. The written summary will include, at a minimum:
  - Inception date of storage
  - Preservation maintenance requirement schedule/history
  - Equipment maintenance requirement schedule/history
  - Expected date of removal from storage

## 2.3 Packing

### 2.3.1 Unit and Accessories

All packaged items must meet the following requirements at a minimum:

- Be secure in carton or crate with bracing & blocking in place.
- Never exceed the recommended weight for a package or skid.
- Have all internal and external documentation in place.
- Have shock & vibration protection in place.
- Have the proper markings in accordance with Section 8 on the shipping container for domestic or international shipments.
- Have color-coded packaging items that are attached to the unit or accessories that can be removed and discarded (Yellow is universal color).
- Have the unit protected against corrosion (preservation).
- Have proper handling/cautionary labels attached.
- Be securely closed (all containers).
- Have accessories properly packaged.
- Be protected from weather/corrosion and human negligence.
- Be protected from moisture/humidity.



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## 2.3.2 Bundling/Strapping

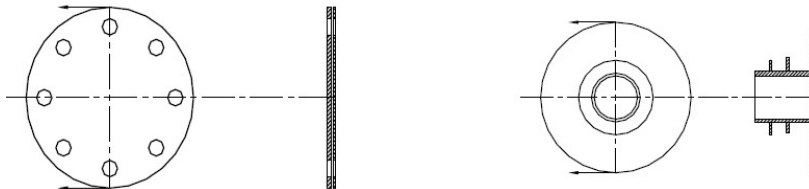
- a. Bundling/strapping must create a block or solid unit of cargo for shipping, designed to permit forklift and sling access, and limited to items up to 3500 lbs. See Figures 2 and 3 below.
- b. Bundling/strapping must use a heavy duty steel strapping/banding, tempered for maximum tensile strength and ductility and able to absorb impact shocks without breaking. Heavy duty steel banding straps with width and thickness dimensions of 1-1/4" x .035" or greater are recommended.
- c. A skid specifically designed to fit the bundled item(s) shall be placed under the straps to permit forklift and sling access. See Figures 2 and 3 below.
- d. A non-hygroscopic material must separate all steel banding from the commodity. Banding and clips that are to be used directly over the product with the non-moisture absorbing material separation must be galvanized. Standard banding that is in compliance with this specification may be used in applications over properly packaged items, crates, and wooden boxes.

## 2.3.3 Piping

- a. Openings must be covered securely during transport and storage and must be reattached easily to allow removal for inspections.
- b. Piping must be supported in such a way to allow forklift or sling access and prevent direct placement on the ground when unloaded at the site.

## 2.3.4 Reels

- a. Large reels will be blocked and braced on all 4 sides.



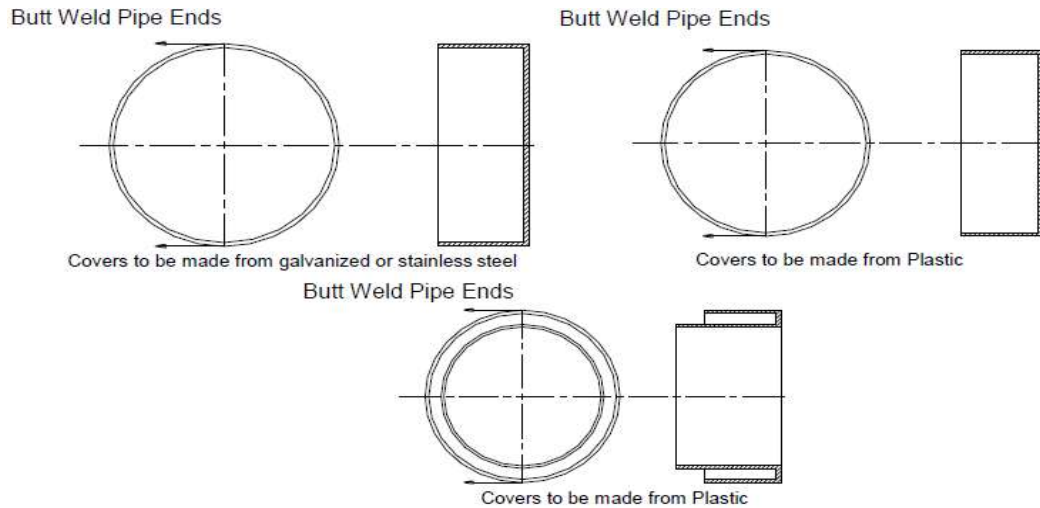
- b. Small reels fewer than 2 feet in diameter will be boxed.

## 2.3.5 Temporary Shipping Covers/Dust Covers

Temporary shipping covers or dust covers are used to keep dust, moisture, and other contaminants away from items being shipped. These covers must be brightly colored (yellow preferred) so that they can be easily identified and removed when required.



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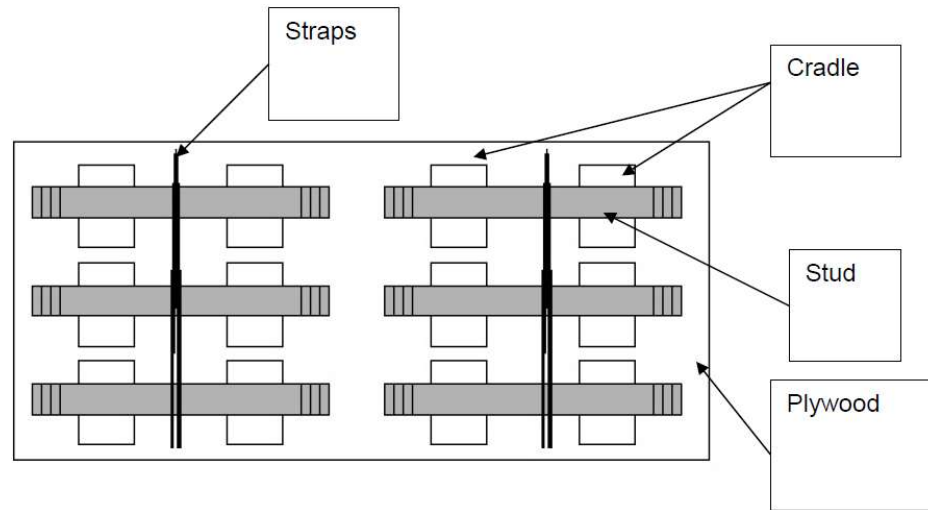


## 2.3.6 Horizontal Joint Hardware

- a. Nuts shall meet the following requirements unless otherwise directed by an GS PO.
  - Nuts will not ship preassembled with the studs
  - Nuts will be packaged separate from the studs
  - Nuts will not directly contact each other when packaged
  - Nuts will be protected by a non-abrasive sleeve
  - Nuts with a nominal diameter of 3.5" and larger shall not be packaged higher than 1 high
- b. Studs shall meet the following requirements unless otherwise directed by an GS PO.
  - Studs shall be packaged that when shipped, the hardware will lay horizontal.
  - Cradles or wood blocks will support the studs within center of gravity (CoG).
  - Cradles shall not directly contact the threaded sections.
  - Studs with a nominal diameter of 3.5" and larger shall not be packaged higher than 1 high.
  - A minimum of a 1" board will be used between tiers. The board will not directly contact the studs and must rest on cradles or wood blocks.
  - Finished package shall be stacked no more than 3 high for static storage purposes only. Each package shall be designed to withstand a static load of 10k lbs.
  - Package top will consist of a telescoping design or clasp design to easily remove package walls
  - Example of skid base with cradle and strapping shown below.



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- c. Stud threads shall not touch any part of the inner wood crate and shall be protected by a sleeve which completely covers the thread.

### 2.3.7 Protrusions and Empty Space

- a. Unnecessary protrusions on skids and crates that increase the shipping volume shall be eliminated. These protrusions increase the total volume of the shipping container and result in an increased shipping cost.
- b. Shipping containers are to be a compact design minimizing air gaps to obtain the smallest shipping volume possible. Where applicable, nesting components within a larger structure is recommended. When nesting, all components are to be securely confined to prevent movement. See figures below for examples of recommended practices and opportunities for improvement.
- c. Refer to section 8.6 Packing List for expectations on documents and packing lists for nested components.



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Notching temporary bracing and rotating it inward has minimized protrusions. This decreases the total volume and is a recommended practice.



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There is an opportunity for improvement by lowering the skid height to reduce the total volume. Also by minimizing air gaps.



Nesting components is a recommended practice where possible.



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## 2.4 Packaging

2.4.1 For engineering reference, this table highlights typical fragility of packaged products.

Extremely Fragile	Aircraft altimeters, gyroscopes, items with delicate mechanical alignments	15-25 G's
Very Delicate	Medical diagnostic apparatus, X-ray equipment	25-40 G's
Delicate	Display terminals, printers, test instruments, hard disk drives	40-60 G's
Moderately Delicate	Stereos and television receivers, floppy disk drives	60-85 G's
Moderately Rugged	Major appliances, furniture	85-115 G's
Rugged	Table saws, sewing machines, machine tools	115 G's & up

2.4.2 For engineering reference, this table highlights typical vibration forces by mode.

Carrier	Frequency Range	Conditions
Truck (Air Ride)	(Check with Carrier)	Normal Highway Travel
Truck (Spring Ride)	2-7 HZ (Suspension)	Normal Highway Travel
	15-20 HZ (Tires)	
	50-70 HZ (Structural)	
Aircraft	2-1000+ HZ (Engine Turbine)	Floor of aircraft during flight.
	2-10 HZ (propeller)	
	100-200 HZ (jet)	
Ship	0.1-11 HZ (Deck)	Vibrations caused by water
	5-200 HZ (Bulkheads)	Current and engine/propeller

2.4.3 For engineering reference, this table highlights typical drop heights.

Weight Range	Type of Handling	Drop Height
0-10 lbs.	One person throwing	42 inches (106 cm)
10-20 lbs.	One person carrying (light)	36 inches (91 cm)
20-50 lbs	One person carrying (heavy)	30 inches (76 cm)
50-100 lbs.	Two people carrying	24 inches (61 cm)
100-250 lbs	Light equipment handling	18 inches (45 cm)
250+ lbs	Heavy equipment handling	12 inches (30 cm)

2.4.4 Solid Wood

- a. Solid wood packaging & bracing must be free of bark, live pest or plants, and free of insect damage (i.e. Holes)
- b. Wood should not directly contact commodity unless a non-hygroscopic medium is used between solid wood and commodity.



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- c. Acceptable Solid Wood Packaging Alternatives are External Grade Plywood, Metal or Plastic Skids Crates, and Containers. External Grade OSB Board can only be used with GS approval.

### 2.4.5 ISMP 15

- a. For sea freight, ISPM-15 is mandatory and requires that all non-manufactured wood packaging materials (NMWP) or solid wood packing materials (SWPM) must be either heat treated or fumigated regardless of the country of export. The requirement includes the proper marking of all treated materials per the IPPC standard.
- b. It is the responsibility of the GE Grid Solutions supplier to insure compliance with ISPM-15. Please visit the following web sites for additional information regarding this directive.  
IPPC <http://www.ippc.int/IPP/En/default.html>  
APHIS/USDA <http://www.aphis.usda.gov/ppq/swp/>

### 2.4.6 Wooden Crates

- a. For international shipments, all items will be crated in accordance with approved packaging procedure. Sample crate examples are shown in Figure 4.
- b. For domestic shipments, alternative material may be used instead of fully crating for shipment if approved SDR is received or a preapproved procedure by GS is already in place.
- c. Open or slotted crates are acceptable with an approved SDR.
- d. All MSD/BOP commodities must be crated for shipment unless size or shape make it impractical. The GS buyer or project manager has the authority to grant written exceptions if not covered under the ordering specifications. It is required that all GS product being placed in exterior storage follow the crate guidelines outlined in this specification unless a written exception has been granted or the packaging requirements are covered under the ordering specifications.
- e. The following considerations shall be adhered to when utilizing a crate:
  - Minimum fork access of 29 inches
  - Minimum sling opening of 4 inches
  - Minimum 1-inch clearance between crate top, walls, and the commodity - unless commodity has been prepackaged prior to crating and the one-inch clearance has already been incorporated into the interior package.
  - For crates greater than 4 feet high the minimum roof thickness is  $\frac{3}{4}$  inch
  - The minimum width (thickness) is 1/2" for plywood





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- Crate weight limit is determined by the maximum weight that can safely be supported by the crate, by the method of transport, and the method of loading and offloading
- A table showing the proper way to build crates can be found in Figure 4.
- e. Required crate sizes can be seen in Figure 5.
- f. Crate lumber shall meet the following requirements:
  - New/free of defects.
  - Knots must not exceed  $\frac{1}{4}$ th the width of the structural member or  $\frac{1}{3}$ rd the width of a sheathing board.
  - Moisture content of lumber must not exceed 20% and not less than 10% for standard grade.
  - No.4 pine or better.
  - Plywood to be minimum of  $\frac{3}{8}$ " thick, type 3 weather resistant or exterior grade CDX plywood, for items less than 100 lbs.
- g. Crate hardware shall meet the following requirements:
  - Screws & cement nails (coated) or twist nails can be used, any other type of material must have written approval from EC.
  - The type of crate, size of crate and strength of crate should be appropriate for item being crated. Please refer to the Figure 5, Required Crate Sizes, for more direction if necessary.
  - Hardware holding equipment shall be bolted to the skid. Washers and nuts are required.
  - Counter sinking of bolt heads into the bottom of the runners is required.
- h. Metal or plastic banding may be used as added protection against hardware failure. See Figure 6 for more details.
- i. Waterproofing
  - All wooden boxes/cases/crates shall be built to ensure water will not penetrate and corrode the equipment, but allow drainage from the bottom.
  - Assume all crates are designated for "outdoor" storage so it is mandatory they have an asphalt lining (roofing felt) covering the exterior top panel of the crate to prevent water seepage and crate degradation.
  - When cases/crates are lined with asphalt laminated Kraft paper material or equivalent, all seams must be orientated so that they will not accumulate or trap water.



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## 2.4.7 Wooden Skids

- a. Items 25,000 lbs. or greater should have an engineered approved skid design for shipment.
- b. A lifting base must be provided for structural steel, bars, tubing, piping, and ductwork. The maximum allowable over-hang on any skid is 6 inches.
- c. Skid wood or wood bracing cannot come in direct contact with the commodity. A non-hydrosopic barrier must be used to prevent any damage.
- d. See table below for required skid and header sizes.

NET WEIGHT OF LOAD (LBS.)	SKID LENGTH MAX. IN FEET (INCHES)	RUNNER/HEADER LUMBER SIZES (INCHES)
200 - 500 Lbs.	8' (96")	2X4
501 - 1000 Lbs.	8' (96")	2X4
1001 - 2000 Lbs.	16' (192")	3X4
2001 - 10,000 Lbs.	20' (240")	4X4
10,001 - 20,000 Lbs.	30' (360")	4X6
20,001 - 30,000 Lbs.	30' (360")	6X6
30,001 - 50,000 Lbs.	30' (360")	6X8
50,001 - 80,000 Lbs.	35' (420")	8X8
80,001 - 100,000 Lbs.	35' (420")	8X10

## 2.4.8 Void/Void Fillers

- a. Closed cell foams (polyethylene) are acceptable.
- b. Paper base materials are acceptable if sealed in plastic.
- c. Antifoam (Polyurethane foams) is acceptable provided separation is maintained between the foam and the commodity.

## 2.4.8 Corrugated Cartons

- a. Corrugated cartons may be used as an alternative to wooden crates if the following criteria meet your shipment details. If corrugated cartons are needed for shipments that fall outside of below criteria, then a SDR must be submitted to the GS SQE.
  - Destination is a domestic location
  - Weight does not exceed 150lbs or 68 kgs
  - Does not contain hazardous material
  - Does not contain liquid or fluids
  - Non-hydrosopic materials used to fill voids in container
- b. Corrugated cartons with wooden base must have a carton thickness of a double wall or greater and must have straps across both directions. There is



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an International Air Transport Authority (IATA) requirement for all air shipments.

- c. Internal wood blocks to be built inside carton for added stacking strength on corrugated cartons. Inner cushioning material such as polyethylene foam shall be placed between the top of the carton and the top of the commodity.

### 2.5 Handling

#### 2.5.1 Load Stability

- a. Pallets/Crates/Cartons that have unstable loads shall have wood and/or steel bases designed to prevent tipping of packaged item. Base of packaging must be oversized to compensate for off center of gravity. Product should be able to be tilted one end 22° from vertical and released without tipping over.
- b. For tall narrow length and width items, the item should be positioned horizontally on the pallet if possible (laid down). If unable to lay flat, the supplier should attempt to consolidate multiple units onto a larger skid.
- c. If consolidation is not possible and the item cannot be positioned horizontally, then the skid must be oversized by ½ the height in the length and width at a minimum.

#### 2.5.2 Stacking

- a. Packaging should be designed to allow for supporting a 90-inch stack height.
- b. If item cannot be stacked it should be clearly marked "DO NOT STACK" and "DO NOT TOP LOAD". A suggestion for anything that should not be stacked is to utilize a corrugated "Do Not Stack" Pallet Cone secured to the top of the item. Please note, extra large crates may require more than one Pallet Cone.

#### 2.5.3 Package Destination Requirements

- a. The package should be designed to consider ease in opening, ease of product removal, and ease of recycling, reuse, or disposal upon arrival at the customer site.
- b. Packaging attached to product must be clearly marked packaging by:
  - Color coding the packaging item
  - Labeling the packaging item
  - Providing prints on packaging location and removal

2.5.4 Manual and powered mechanical lifting by hand trucks, fork trucks, or overhead lifting equipment may occur and should take into consideration the requirements in Figure 7.

2.5.5 Requirements for handling items on wheels are shown in Figure 8.

2.5.6 Shock and tilt sensors



## Marking, Packaging, Preservation, and Shipping Requirements

- a. These sensors serve as a visual indicator to the recipient that a more careful inspection of the product is needed. Activated sensors do not mean that the product is damaged
- b. Shock or tilt sensors should be used in the following situations:
  - Large, sensitive products in crates where concealed damage is a problem.
  - Very fragile products that require special handling.
  - Shock sensitive products with a history of damage.
  - Tall, top heavy products prone to tilting
  - Special packages designed specifically to ship upright.
- c. Example shock and tilt sensors are shown below.



2.5.7 Supplier are required to provide information on how the customer should load/handle the crate (in accordance with Incoterms).

### 2.6 Markings

2.6.1 Markings are mandatory for all shipments.

2.6.2 Stenciling

- a. Markings for crated equipment are to be applied in English with (black) non-fading paint using a block-lettering stencil.
- b. Alternatives for non-crated items are a stainless steel engraved nameplate, plywood or plastic cutouts attached to the component.
- c. Affix by banding or bolting to a support member of the commodity.

2.6.3 Letter size will be determined by the panel size. The largest possible stencil size for the panel must be used as referenced in Figure 9.

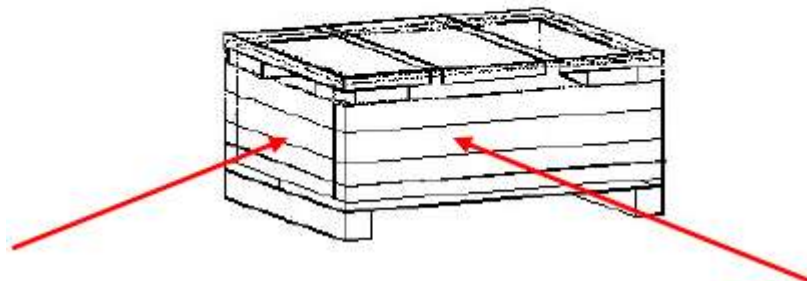


## Marking, Packaging, Preservation, and Shipping Requirements

2.6.4 Marking will be placed on 2 adjacent sides with following information:

- Material List Item Number (MLI), if applicable
- Country of origin
- Container gross weight lbs. (add Kg for international shipments)
- Container dimensions inches (add cm for international shipments)
- Customer name
- Serial Number, if applicable
- Description of contents
- GS drawing number
- GS PO number
- Container case or package number
- Storage/maintenance requirements (indoors or outdoors)

### Marking Placed on Two Adjacent Sides



2.6.5 Cautionary Markings

- a. The following as applicable will be added to the exterior of all equipment being shipped:
  - Center of Gravity (CoG) is required on all unstable packages. If the CoG cannot be marked due to its location on the unit and a plywood panel cannot be affixed to allow the for marking its location, a print sealed in plastic, affixed to the commodity in a visible location will be required for all unstable packages. The print must show a side profile and end profile with the CoG precisely located on each view. It is not acceptable to place any markings directly on the equipment.
  - Handle with care, fragile, etc.



## Marking, Packaging, Preservation, and Shipping Requirements

- Glass - Must be marked with “Glass” or combination “Fragile-Glass” precautionary mark.
- Liquids - Must identify as liquid or contains liquid.
- Sling Locations - Mark special locations or notched skid locations
- Other special requirements/precautionary warning marked appropriately.

b. Typical precautionary marks can be seen in Figure 10.

### 2.6.6 Packing List

a. The packing list is the primary method used to inventory shipped components. The packing list must identify the entire contents within each individual package if the container has multiple packages with different items, i.e. nested components.

b. Standard requirements needed for each packing list include:

- GS PO #
- GS PO Part #

Note: The GS PO Part # must be also be etched or affixed to the commodity and match the packing list. If the GS PO Part # is for a kit, set or assembly, the packing list must contain all the sub-part numbers and quantity that make up the kit. The packing list should contain the top-level drawing number. The packing list should cross reference the GS part number to a supplier reference number (if available).

- GS PO Line #
- GS PO Quantity

Note: If the shipment is less than the BOM quantity, the packing list should contain the BOM quantity, shipped quantity and the quantity on backorder.

- Case number
- Unit of measure (UoM)
- Country of origin (CoO)
- Supplier Information- supplier name and complete contact information (address, phone number and email)

c. The packing list must be typed/computer printed. Handwritten packing list are in violation of this specification. An example packing list is shown in Figure 11.

d. The following recommendations shall be adhered to when attaching the packing list:

- Use caution when affixing the packing list to prevent breach of inner vapor barrier, case liners, or other packaging of the equipment.



## Marking, Packaging, Preservation, and Shipping Requirements

- Minimum of one packing list placed internally and one secured externally on the package.
  - Do not attach the packing list directly to painted equipment, where the removal of the packing list may cause damage to the painted surface.
  - It is recommended that the packing list be attached with a tape or glue adhesive. If placed in contact with the commodity the tape or glue cannot leave a residue.
  - If the packing list is stapled to the package then the staples must be covered with waterproof tape.
- e. The following are requirements for the packing list enclosure:
- Will be an enveloped sized, waterproof pouch labeled Packing List.
  - Will be laminated in plastic.
- 2.6.7 Each GS location will create its own packing slips meeting unique needs and requirements specific to that location. The supplier should contact the SQE or buyer with any questions.

### 2.7 Shipping

#### 2.7.1 Air Transport

- a. The key limitation factor for air shipment is height. For efficient shipment by air, packages and crates should be held to a maximum of 300cm (118") long X 226cm (89") wide X 206cm (81") tall. A more efficient and some times more economical height limit is 160cm (63"). This allows belly loading in all cargo and most passenger aircraft.
- b. Crate height is the key factor for efficient air transport. The following summarizes the key height dimensions that affect cost and cycle time for air transport.
- 74 cm (29 Inches) - Most efficient and economical air service.
  - 160 cm (63 Inches) - Still very good efficiency and economy.
  - 206 cm (81 Inches) - Point where problems and costs increase greatly.
  - 241 cm (95 Inches) - 747 cargo aircraft only possible carrier above this height
  - 300 cm (118 Inches) - Maximum height limit for air transport.

#### 2.7.2 Ocean Transport

- a. Products shipping by ocean are typically loaded in Standard Containers (solid top & open top), Flat Rack Containers and as Break Bulk. Standard containers can be loaded below or on the deck of the vessel. Flat rack containers are typically loaded above deck. Non-containerized shipments can be loaded below or above deck.



## Marking, Packaging, Preservation, and Shipping Requirements



- b. Independent of which type of ocean vessel or container type, all shipments MUST have securing points for proper lashing and securing.
- c. Due to longer transit times, protection from corrosion and humidity is greatest when shipping by ocean.
- d. Container equipment can be used as outer packaging as long as the container is delivered to final destination and can be used for storage. Products inside container must be properly blocked and braced.

### 2.7.3 Land Transport

- a. Typical equipment types are closed vans or open deck flatbeds.
- b. Closed vans normally require a loading dock; flatbeds can be loaded and offloaded from any open side.
- c. Less than truckload (LTL) shipments require added structural protection due to multiple terminal handlings and stacking/mixing with other company's products. Carrier must block loaded skids with wood or load bars to prevent shifting of the load during transport.
- d. If product is not fully enclosed, a tarp maybe required by supplier or carrier to protect from incremental weather
- e. Independent of which type of equipment, all shipments must have securing points for proper lashing and securing.

### 2.7.4 Hazardous Materials

- a. No GS shipments, either Intra-US or International, may contain any materials such as paints, stains, inks, paint thinners, solvents, or other materials that may otherwise render the shipment hazardous without the expressed written approval of the GS buyer.
- b. Hazardous shipments should move on their own set of documents (invoice, BOL).
- c. A supplier of hazardous material must provide the following:
  - Department of Transportation (D.O.T.) proper shipping name
  - D.O.T. hazard class
  - Identification number (UN/NA)
  - Packing group (if applicable)





## Marking, Packaging, Preservation, and Shipping Requirements

- Exact weight of the hazardous material in each package
  - Required type of International or D.O.T. (diamond hazard) label
  - International or D.O.T. ground packaging requirements
  - 24-hour emergency response contact number
  - Any other requirements outlined by the country of export and import and those countries located on the transport route
- d. Packaged in accordance with rules and regulations of the IMO (International Maritime Organization), IATA (International Air Transport Association), and ASTM (American Society for Testing and Materials) packaging for hazardous materials and D.O.T., or in accordance with applicable regulations of your country.
- e. GS supplier must be in compliance with all Occupation Safety and Health Association (OSHA) rules, regulations and standards governing hazardous materials, their use and disposal as well as employee and public safety requirements mandated by OSHA such as CFR - hazardous material requirements OSHA and all Material Safety Data Sheet (MSDS) requirements. Alternatively, GS supplier must comply with applicable regulations of your country.
- f. GS supplier must be in compliance with all EPA rules, regulations and standards governing hazardous materials, their use and disposal, such as 40 CFR - hazardous material requirements EPA, or in accordance with applicable regulations of your country.
- g. Packaging must meet all regulations and requirements for the chosen mode of transportation as well as country specific requirements not listed in this document.
- Ocean or Barge
    - Title 49 (49 CFR) - Transportation
    - PART 176 - CARRIAGE BY VESSEL
    - IMDG (International Maritime Dangerous Goods)
    - IMDG (International Maritime Dangerous Goods) Code
    - EC-SRC-0005 Latest revision of GS Packaging Specification
    - In accordance with applicable regulations of your country and with all regulations of the countries located on the transport route where compliance is required because of off-loading of the vessel, as well as those regulations of the receiving country of the shipment.
  - Truck
    - Title 49 (49 CFR) - Transportation



## Marking, Packaging, Preservation, and Shipping Requirements

- PART 177 - CARRIAGE BY PUBLIC HIGHWAY
- EC-SRC-0005 Latest revision of GS Packaging Specification
- In accordance with applicable regulations of your country and with all regulations of the countries located on the transport route where compliance is required because of off-loading of the vessel, as well as those regulations of the receiving country of the shipment.
- Rail
  - Title 49 (49 CFR) - Transportation
  - PART 174 - CARRIAGE BY RAIL
  - AAR (Association of American Railroads) Rule or Standard
  - EC-SRC-0005 Latest revision of GS Packaging Specification
  - In accordance with applicable regulations of your country and with all regulations of the countries located on the transport route where compliance is required because of off-loading of the vessel, as well as those regulations of the receiving country of the shipment.
- Air
  - Title 49 (49 CFR) - Transportation
  - PART 175 - CARRIAGE BY AIRCRAFT
  - ICAO (International Civil Aviation Organization)
  - Safe Transport of Dangerous Goods by Air (ICAO TI)
  - IATA (International Air Transport Association)
  - Dangerous Goods Regulations
  - Shippers Declaration
  - EC-SRC-0005 Latest revision of GS Packaging Specification
  - In accordance with applicable regulations of your country and with all regulations of the countries located on the transport route where compliance is required because of off-loading of the vessel, as well as those regulations of the receiving country of the shipment.
- h. Packaging must follow all hazardous regulatory requirements for countries being exported to and the requirements of the sending country.
- i. Hazardous materials being ground shipped must comply with all regulations of the countries located on the transport route.



## Marking, Packaging, Preservation, and Shipping Requirements

- Hazardous materials must be properly labeled, marked, and documented, and place carded in strict accordance with sections 172.000 through 172.600 of 49 CFR and all other applicable sections of 49 CFR as well as the requirements of all ISTA and IMO rules and regulations if applicable, or in accordance with applicable regulations of your country and with all regulations of the countries located on the transport route, as well as those regulations of the receiving country of the shipment
- Proper labeling, marking, and documentation for hazardous materials is the responsibility of the GS supplier.
- j. Testing of packaging, in certain cases, may be required when dealing with hazardous materials. Certification of the packaging may be necessary.
- k. The supplier must declare any hazardous materials at the time of reporting shipping information to the logistics group. No Exceptions!
- l. A copy of the shipper's IMO declaration or IATA declaration along with the MSDS sheets (in English) must be presented to the logistics group a minimum of 48 hours prior to the arrival of the freight in the USA. No Exceptions! (Due to new regulation requiring that the manifest be provided to customs 24 hours prior to arrival of products or goods.)
- m. GS supplier must provide an MSDS (Material Safety Data Sheet) for all hazardous materials to be shipped.
- n. GS supplier must follow strict emergency response guidelines presented in sections 172.600 through 172.606 of 49 CFR and all other applicable sections of 49 CFR as well as the IATA and IMO rules and regulations if applicable, or country specific requirements.
- o. GS supplier or manufacturer is legally responsible for the improper marking, packaging, or documentation of all hazardous material shipments for EC.

### 2.8 Applicable Documents

The following documents shall form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue shall apply.

- P6A-AG6            Graphite Film Lubricant
- P6A-AL-5038      Generator Painting and Preservation Procedures
- P23A-AG2          Identification Turbine/Generator Parts and Materials
- P23A-WE-0001    Serialization of GE Wind Energy Components
- P23E-AL-0266    Preservation of Machined Surfaces on Turbine and Generator Components  
External Supplier Requirements



## Marking, Packaging, Preservation, and Shipping Requirements

- 357B1925 Unit Covers
- 362A2412 System and Component Cleanliness Requirements
- GEK103616 Protection of Unassembled Generator Components, During Shipment and Prior to Startup

### 3.0 Definitions, Acronyms and References

#### 3.1 General Definitions

- Country of Origin (COO) – Dependent on the substantial transformation method. For example, for a turbine that is made up of parts from multiple countries and assembled in the United States, the country of origin for the finished turbine is the United States. Parts that do not undergo a transformation, example parts from outside the USA that are packed for shipping in the USA must be labeled with the country of origin as they were imported into the USA. Note: Cases with multiple (individual) pieces must be identified by country of origin for each piece inside case, i.e. if case originates in USA and contains parts from Canada and China, then the case must have three Country of Origins listed on the outside of the case.
- Domestic - Transfer (merchandise/commodity) within a country
- Export - Carrying or sending (merchandise/commodity) to some other country
- External Supplier - Outside of EC
- Internal Supplier - From within GS (a manufacturing department)
- Import - Bringing (merchandise/commodity) into a place or country from another country
- Standing – Refers to rings and webs that are stood up on end as opposed to having them lying down
- Supplier - The individual, company, corporation, sole proprietorship, or partnership that is being requested to provide a specific product in accordance with this specification
- Supplier Deviation Request (SDR) - A documented method for the waiver for materials, processes, or dimensions that deviate from the purchase order (PO) documents

#### 3.2 Packaging Definitions

- Compressive Creep - The gradual loss of thickness that may occur if a cushioning material is placed under a constant load for a long time. Product loosens in its cushion and becomes vulnerable to excessive movement. Spreading the load over a larger area of cushioning will usually reduce the risk of compressive creep.
- Hazardous Materials – Any material that poses a present or potential hazard to the health or safety of humans or to the environment. GS manufacturers are required to prepare Materials Safety Data Sheets (MSDSs) for all hazardous materials. A material may be considered hazardous because of its quantity, concentration, or physical or chemical characteristics.



## Marking, Packaging, Preservation, and Shipping Requirements

- Oversized - Merchandise or Commodity that due to the size or weight must use specialized transportation; sometimes referred to as over-dimensional freight.
- Packaging - The application and use of adequate protective measures to prevent damage during transportation and storage, including application of package wraps, cushioning, and complete identification markings.
- Packing - The final placement of items or packages in exterior shipping containers or other media, including necessary blocking, bracing, cushioning, weatherproofing, exterior strapping, and marking.
- Preservation - Method used to maintain the quality, fit, function, and form of the item being shipped.
- Protective Coatings – Any type of coating applied directly to the product that provides a barrier against oxygen and water. Materials that have extremely low permeability are best able to minimize corrosion to metal surfaces.
- Hygroscopic - Taking up and retaining moisture.
- Shipping Crate/Package Weight Limit - The maximum weight that can be safely transported on or in a package of given size and structural makeup. Follow crate guidelines in the packing section above.
- Maximum Container ID - The maximum size that can be safely handled by the mode of transport selected.
- Shrink-wrapping - The process where a closed bag is formed around the product, typically using a sealer, then the enclosed product is subjected to heat, typically using a heat tunnel, which shrinks the plastic shrink film around the product.

### 4.0 Document Revisions and Approvals

The following chart lists the revisions made to this document tracked by version. Use this to describe the changes and additions each time this document is re-published. The description should include as many details of the changes as possible.

Records of Reviewers and Approvers may be found within the DMS (Document Management System).

Version	Section Modified and Revision Description	Date	Author
1.0	New Issue. Replaces P23E-AL-0255	11/8/2013	Tiffany Shomo
1.1	Realigning figures to table of content	01/08/2014	Tiffany Shomo
2.0	Remove Power and Water	06/22/2015	Arianto Lawardi
3.0	Replace Energy Management to Energy Connection	07/08/2016	Arianto Lawardi



# Marking, Packaging, Preservation, and Shipping Requirements

<u>4.0</u>	Update Energy Connections to Grid Solutions	01/31/2020	Charles Danner
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Title: Marking, Packaging, Preservation, and Shipping Requirements  
Reference: EC-SRC-0005  
Revision: 4.0  
Application Date: 01/31/2020  
Expiration Date: 01/30/2022

## Figures

**Figure 1: Preservation Docket**



# Marking, Packaging, Preservation, and Shipping Requirements

Commodity Description					
GEPS Part Number	GEPS Drawing Number	MLI Number	Inception Date of Storage		
Storage/Warehouse Location		Contact			
		Phone			
<b>DETAILS OF PRESERVATION</b>					
<u>Preservation Method</u>					
<u>Preservation Materials</u>					
<u>Preservation Maintenance</u>		Inspector	Last Performed	Required	Completed
<u>Label / Marking</u>					
<u>Commodity Maintenance</u>		Inspector	Last Performed	Required	Completed
<u>Preservation Removal</u>					
Date Removed from Storage		Commodity Condition Pass/Fail			
Description / Condition of Commodity Upon Removal					



## Marking, Packaging, Preservation, and Shipping Requirements

- \*\* Bundling - steel banding placement of single shape items or for items that have no trouble with handling, transport, or storage
- \*\* Corrosion preservation required for shipment & storage of pipes & Single shaped items
- \*\* Pipes must be sealed with a yellow cap both ends (yellow tape can be added to plain white cap's surface)
- \*\* VCI powder inside capped pipes
- \*\* Maximum weight per bundle is 3500 lbs. (1588 kilograms)

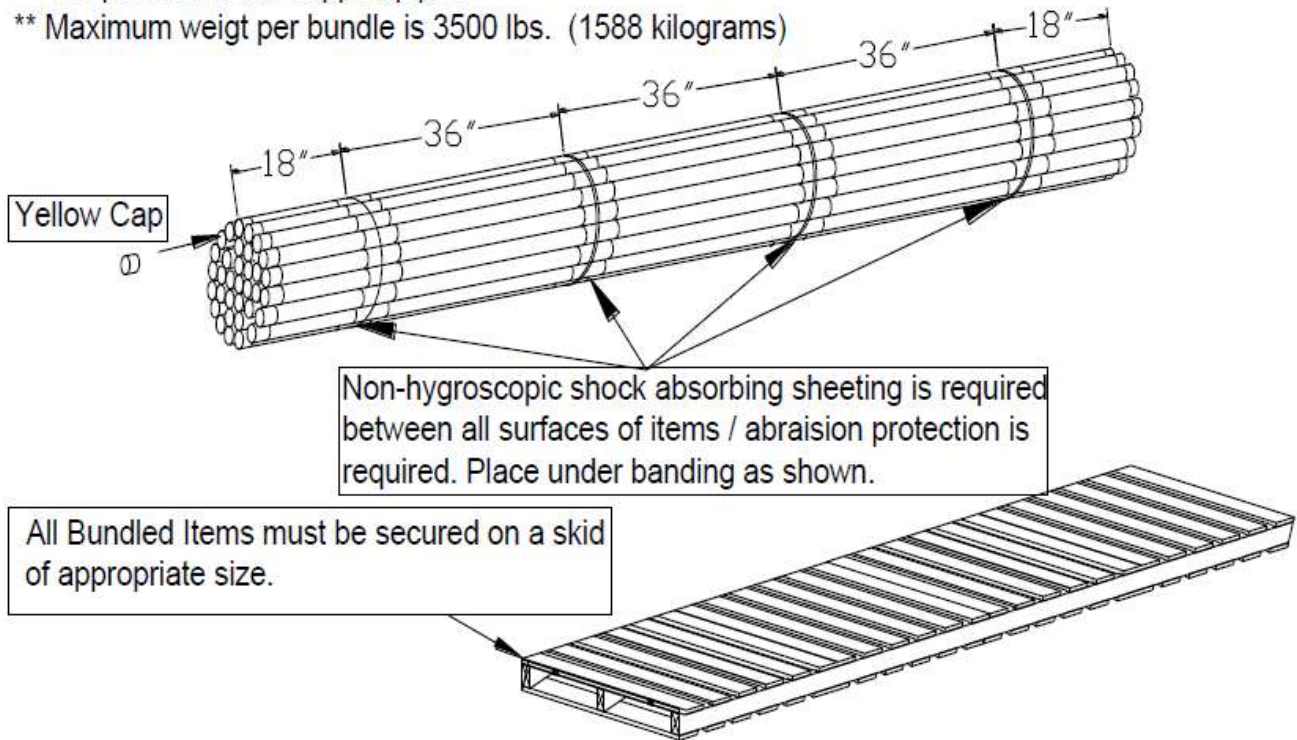


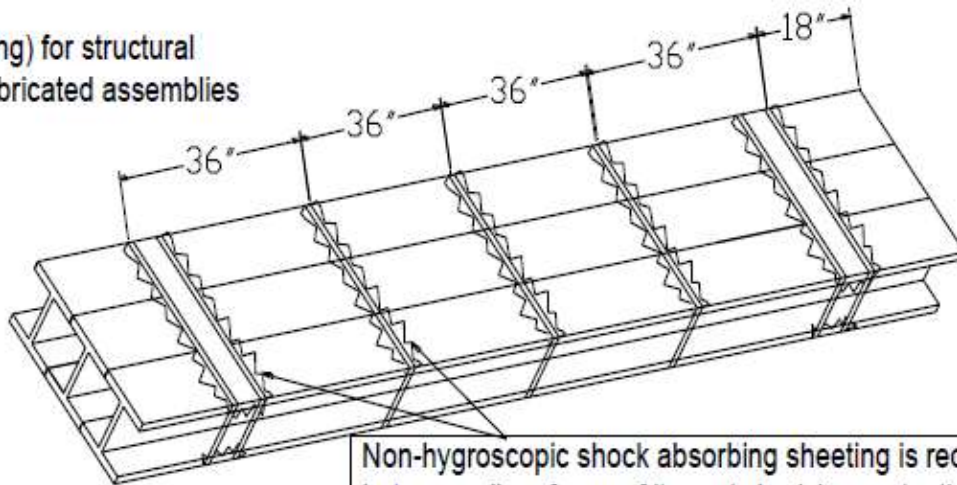
Figure 2: Bundling/Strapping Requirements





# Marking, Packaging, Preservation, and Shipping Requirements

Bundling (steel banding) for structural steel, walkways, or fabricated assemblies



Non-hygroscopic shock absorbing sheeting is required between all surfaces of items / abrasion protection is required. Place under banding & between items as shown.

All Bundled Items must be secured on an appropriate sized skid using steel banding.

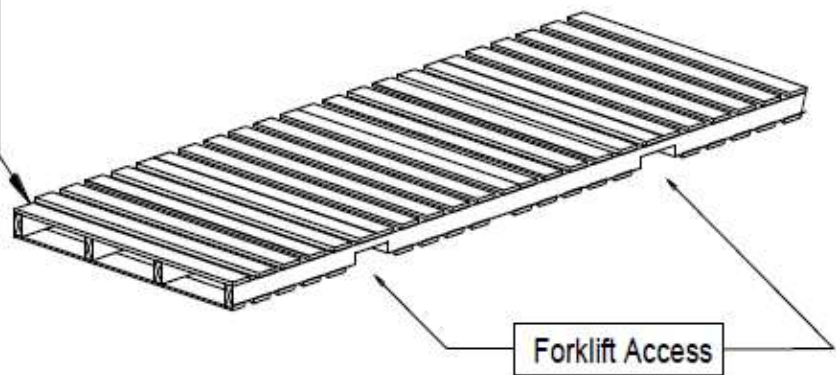
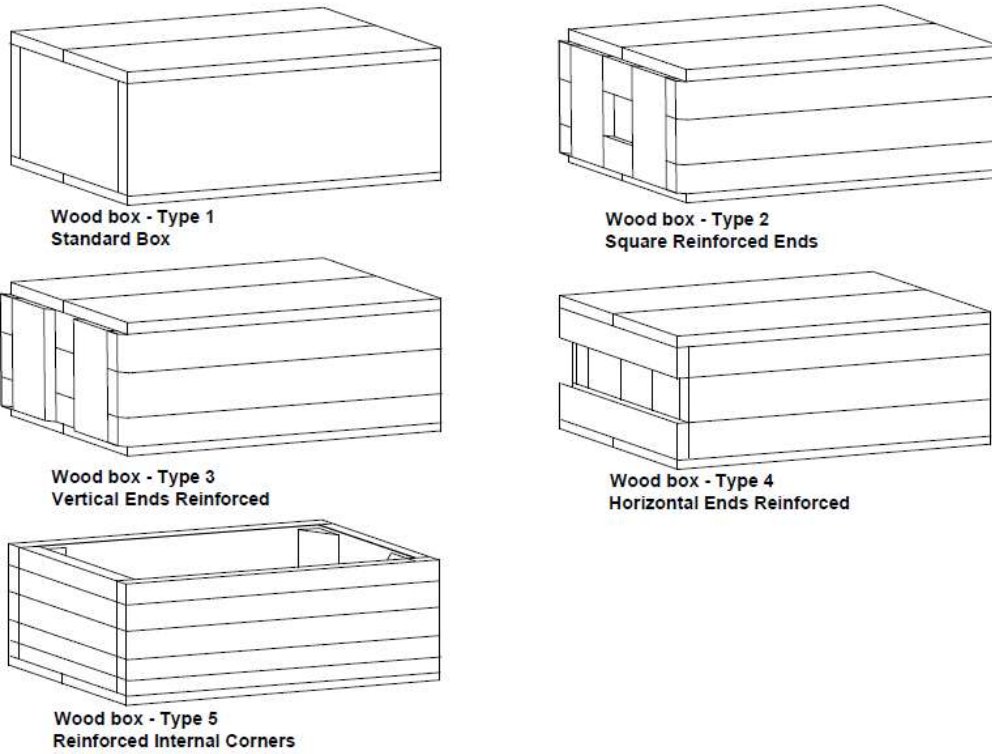


Figure 3: Bundling/Strapping Requirements



# Marking, Packaging, Preservation, and Shipping Requirements



**Figure 4: Sample Crate Examples**



# Marking, Packaging, Preservation, and Shipping Requirements

## REQUIRED CRATE SIZES

LOAD NET WEIGHT (LBS.)	PACKAGING METHOD	MATERIALS	PRESERVATION METHOD
0-100 Lbs.	Skid enclosed bottom Fragility protection where required. Internal bracing and blocking of unit. Asphalt Lined Wooden box. Corrugated carton w/ secondary over-pack Minimum stack height of 96 inches.	Corrugated in secondary container 3/8" Plywood Minimum	See preservation Barrier bag & desiccant, Vacuum sealed. Surface coatings/Oils VCI Paper
100-250 Lbs.	Skid enclosed bottom Fragility protection where required. Internal bracing and blocking of unit. Asphalt Lined Wooden box or Full crate. Minimum stack height of 96 inches.	Asphalt paper / VCI Paper Corrugated in secondary container for accessories 1/2" Plywood Minimum	See preservation Bar Asphalt lining & desiccant Surface coatings/Oils VCI Paper
250-500 Lbs.	Skid enclosed bottom Fragility protection where required. Internal bracing and blocking of unit. Asphalt Lined Wooden box or Full crate. Minimum stack height of 96 inches.	Asphalt paper / VCI Paper Corrugated in secondary container for accessories 1/2" Plywood Minimum	See preservation Asphalt lining & desiccant Surface coatings/Oils VCI Paper
500-750 Lbs.	Skid enclosed bottom Fragility protection where required. Internal bracing and blocking of unit. Asphalt Lined Full crate. Minimum stack height of 96 inches.	Asphalt paper / VCI Paper Corrugated in secondary container for accessories 1/2" Plywood Minimum	See preservation Asphalt lining & desiccant Surface coatings/Oils VCI Paper
Over 750 Lbs.	Skid enclosed bottom Fragility protection where required. Internal bracing and blocking of unit. Asphalt Lined Full crate. Minimum stack height of 96 inches.	Asphalt paper / VCI Paper Corrugated in secondary container for accessories 1/2" Plywood Minimum	See preservation Asphalt lining & desiccant Surface coatings/Oils VCI Paper

Figure 5: Required Crate Sizes

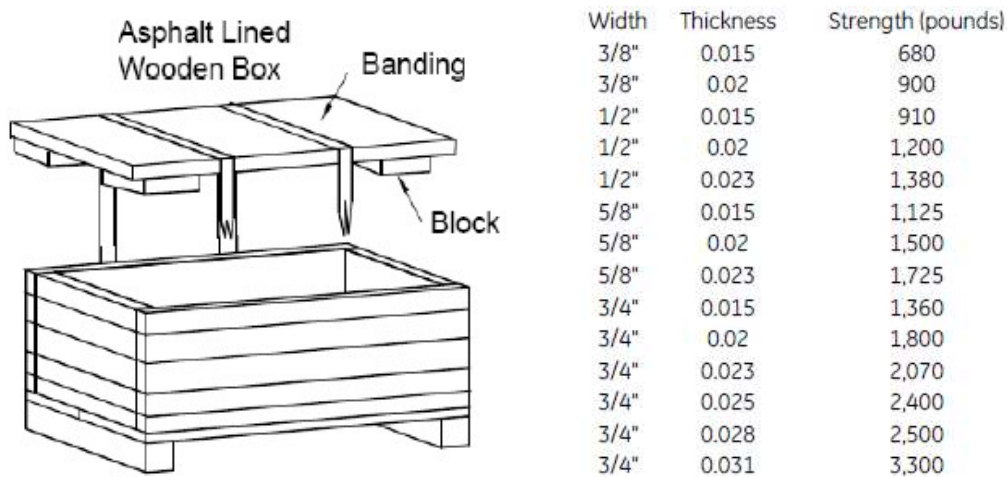


Figure 6: Banding Example and Specification Requirements



# Marking, Packaging, Preservation, and Shipping Requirements

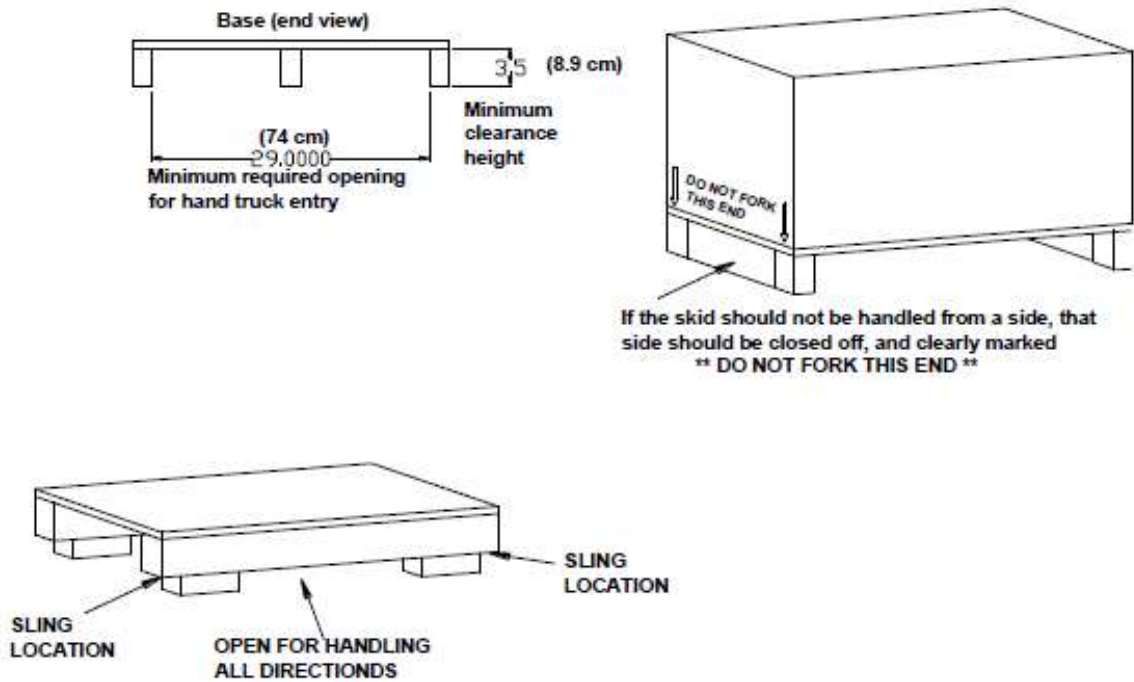


Figure 7: Manual and Power Mechanical Lifting Requirements

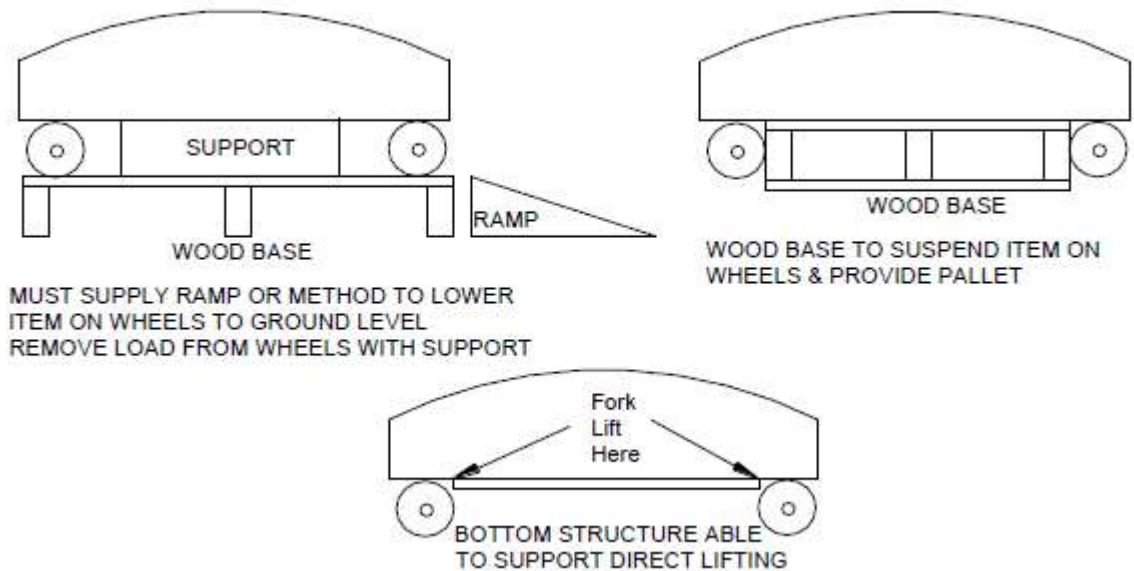
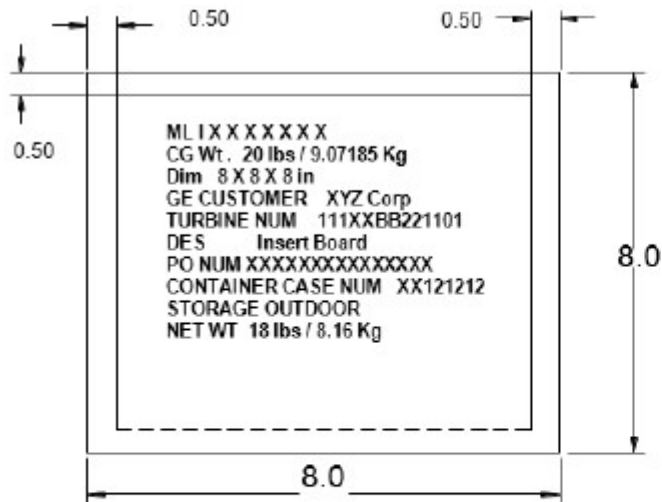


Figure 8: Requirements for Handling Items on Wheels

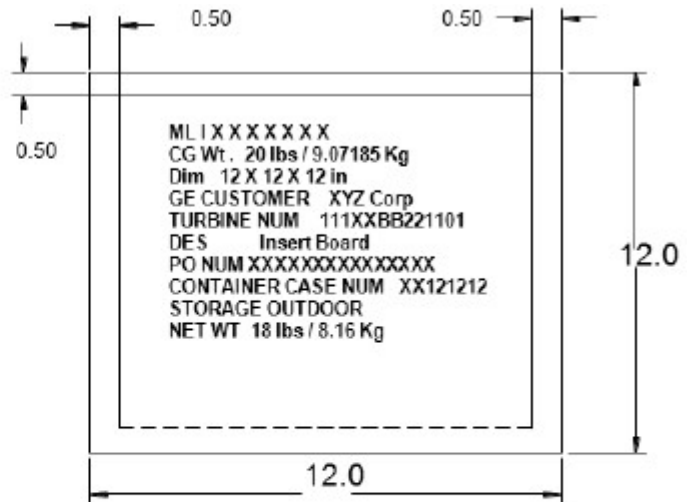


# Marking, Packaging, Preservation, and Shipping Requirements



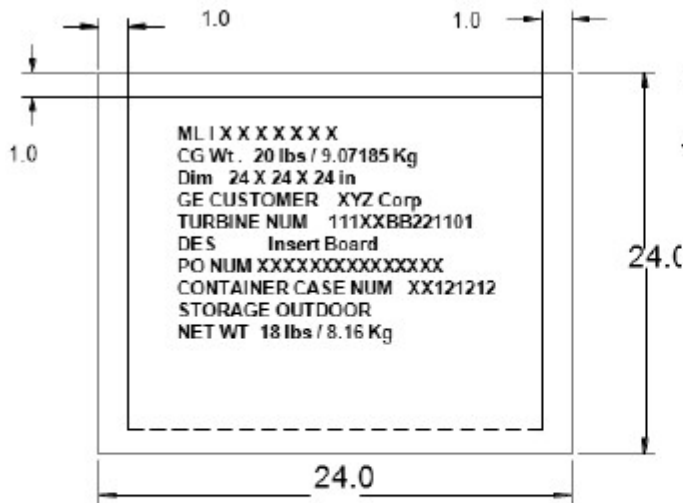
Package Surface Size 8 inch x 8 inch  
20.32 cm x 20.32 cm  
(64 square inches)

Letter Size  
Site Information 1/2 inch or 1.3 cm  
Logistic Information 1/4 inch or .635 cm



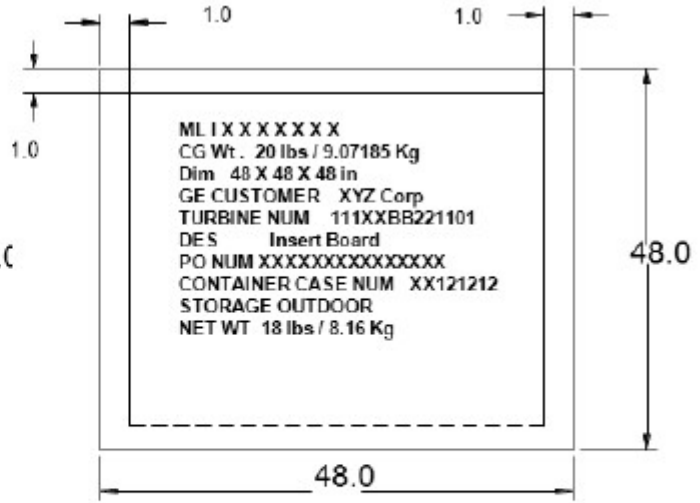
Package Surface Size 12 inch x 12 inch  
30.48 cm x 30.48 cm  
(144 square inches)

Letter Size  
Site Information 5/8 inch or 1.59 cm  
Logistic Information 1/2 inch or 1.3 cm



Package Surface Size 24 inch x 24 inch  
60.96 cm x 60.96 cm  
(576 square inches)

Letter Size  
Site Information 1 1/4 inch or 3.175 cm  
Logistic Information 3/4 inch or 1.905 cm



Package Surface Size 48 inch x 48 inch  
121.9 cm x 121.9 cm  
(2304 square inches)

Letter Size  
Site Information 3 inch or 7.62 cm  
Logistic Information 1 inch or 2.54 cm

Figure 9: Reference for Letter Sizing on Stencils



# Marking, Packaging, Preservation, and Shipping Requirements

ISO 7000 NO. 0615 KEEP AWAY FROM HEAT + RADIATION	ISO 7000 NO. 0621 <b>FRAGILE</b>	ISO 7000 NO. 0622 USE NO HOOKS	ISO 7000 NO. 0623 <b>THIS WAY UP</b>	ISO 7000 NO. 0624 KEEP AWAY FROM HEAT	ISO 7000 NO. 0625 <b>SLING HERE</b>	ISO 7000 NO. 0626 <b>KEEP DRY</b>
ISO 7000 NO. 0627 CENTER OF GRAVITY	<b>DO NOT ROLL</b>	ISO 7000 NO. 0629 NO LIFT CART	ISO 7000 NO. 0630 STACKING WEIGHT LIMITATION	ISO 7000 NO. 0631 <b>CLAMP HERE</b>	ISO 7000 NO. 0632 <b>TEMP LIMITS</b>	<b>PERISHABLE</b>
<b>HANDLE WITH CARE</b>	<b>DO NOT STACK</b>	<b>LIFT CART HERE</b>	<b>FOTO</b> PHOTOGRAPHIC MATERIALS	<b>DO NOT FREEZE</b>	<b>KEEP FROZEN</b>	<b>KEEP AWAY FROM COLD</b>
<b>CENTER OF BALANCE</b>	<b>CAUTION TOP HEAVY</b>	<b>DO NOT CLAMP HERE</b>	<b>STATIC SENSITIVE</b>	<b>DO NOT DROP</b>	<b>LIFT BY INNER FASTENING</b>	<b>DO NOT FORK</b>
	<b>KEEP AWAY FROM MAGNETS</b>	<b>DO NOT STEP ON</b>	<b>TLTING LIMIT</b>	<b>DO NOT TIP</b>	<b>MAX STACKING LIMIT N = NUMBER</b>	

Figure 10: Typical Precautionary Marks



# Marking, Packaging, Preservation, and Shipping Requirements

DETAILED PACKING LIST							
<b>Project</b> Project # LCA	GE PROJECT NAME GE PROJECT NUMBER	Customer:	ENTER GE CUSTOMER INFORMATION				
		Final Receiver:	ENTER FINAL RECEIVER INFORMATION				
<b>PURCHASE ORDER NO.</b>	ENTER GE PURCHASE ORDER NUMBER <b>48200</b>						
SHIPPING MARKS							
Materials count	Sheet	ENTER SHIPPING MARKS AS INSTRUCTED					
Materials labeling:	2 adjacent sides						
<b>Packing Type / Code of Envelope</b>		<b>Emergency Description</b>					
00	Roll / Roll	Kit Code					
01	Bundle / Bundle	Packing Type					
02	Case / Case (Open)	Storage Code					
03	Container / Container	Country of Origin					
04	Tray / Case (Open - 10k)	BSC (Burlap) Description					
05	Roll / Roll - 5k	Package Number					
06	Envelope - Jiffy bag / Envelope - tote bag	B/L (B/L) Number					
07	Roll / Roll	Gross Weight					
08	Roll and container box / Carton (Open)	Net Weight					
09	Roll (Roll) / Roll (Roll) - 10k	Dimensions					
10	Storage Code / Zone de stockage	Volume					
11	Kit (components building / kit) (components)						
12	Case (building / component case)						
13	Envelope / Envelope						
14	Roll (roll) / Roll (roll)						
SHIPMENT CONTENTS							
PO / PO Line:		80300-1					
Case No.:		006781-01011001					
Part #	ULI #	ITEM DESCRIPTION	EQM	QTY ORDERED	QTY SHIPPED	Drawing Number	Supplier Reference #
sample							
PO / PO Line:		80300-2					
Case No.:		006781-01011002					
Part #	ULI #	ITEM DESCRIPTION	EQM	QTY ORDERED	QTY SHIPPED	Drawing Number	Supplier Reference #



# Marking, Packaging, Preservation, and Shipping Requirements

**Figure 11: Example Packing List**

