

SECTION 01 66 00

PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This Section includes general requirements for storing and protecting materials and equipment.

1.2 STORAGE

- A. Store and protect materials and equipment in accordance with manufacturer's recommendations and the Contract Documents.
- B. CONTRACTOR shall make all arrangements and provisions necessary for, and pay all costs for, storing materials and equipment. Excavated materials, construction equipment, and materials and equipment to be incorporated into the Work shall be placed to avoid injuring the Work and existing facilities and property, and so that free access is maintained at all times to all parts of the Work and to public utility installations in vicinity of the Work. Store materials and equipment neatly and compactly in locations that cause minimum inconvenience to OWNER, other contractors, public travel, and owners, tenants, and occupants of adjoining property. Arrange storage in manner to allow easy access for inspection.
- C. Areas available at the Site for storing materials and equipment are shown or indicated in the Contract Documents, or as approved by ENGINEER.
- D. Store materials and equipment to become OWNER's property to facilitate their inspection and ensure preservation of quality and fitness of the Work, including proper protection against damage by freezing, moisture, and high temperatures with ambient temperatures as high as 100 degrees F. Store in indoor, climate-controlled storage areas all materials and equipment subject to damage by moisture, humidity, heat, cold, and other elements, unless otherwise acceptable to OWNER. When placing orders to Suppliers for equipment and controls containing computer chips, electronics, and solid-state devices, CONTRACTOR shall obtain, coordinate, and comply with specific temperature and humidity limitations on materials and equipment, because temperature inside cabinets and components stored in warm temperatures can approach 200 degrees F.
- E. CONTRACTOR shall be fully responsible for loss or damage (including theft) to stored materials and equipment.
- F. Do not open manufacturer's containers until time of installation, unless recommended by the manufacturer or otherwise specified in the Contract

Documents.

- G Do not store materials or equipment in structures being constructed unless approved by ENGINEER in writing.
- H Do not use lawns or other private property for storage without written permission of the owner or other person in possession or control of such premises.

1.3 PROTECTION

- A. Equipment to be incorporated into the Work shall be boxed, crated, or otherwise completely enclosed and protected during shipping, handling, and storage, in accordance with Section 01 65 00, Product Delivery Requirements.
- B. Store all materials and equipment off the ground (or floor) on raised supports such as skids or pallets.
- C. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Painted equipment surfaces that are damaged or marred shall be repainted in their entirety in accordance with equipment manufacturer and paint manufacturer requirements, to the satisfaction of ENGINEER.
- D. Protect electrical equipment, controls, and instrumentation against moisture, water damage, heat, cold, and dust. Space heaters provided in equipment shall be connected and operating at all times until equipment is placed in operation and permanently connected.

1.4 UNCOVERED STORAGE

- A. The following types of materials may be stored outdoors without cover on supports so there is no contact with the ground:
 - 1. Reinforcing steel.
 - 2. Precast concrete materials.
 - 3. Structural steel.
 - 4. Metal stairs.
 - 5. Handrails and railings.
 - 6. Grating.
 - 7. Checker plate.
 - 8. Metal access hatches.
 - 9. Castings.
 - 10. Fiberglass products.
 - 11. Rigid electrical conduit.
 - 12. Piping, except polyvinyl chloride (PVC) or chlorinated PVC (CPVC) pipe.

1.5 COVERED STORAGE

- A. The following materials and equipment may be stored outdoors on supports and

completely covered with covering impervious to water:

1. Grout and mortar materials.
 2. Masonry units.
 3. Rough lumber.
 4. Soil materials and granular materials such as aggregate.
 5. PVC and CPVC pipe.
 6. Filter media.
- B. Tie down covers with rope, and slope covering to prevent accumulation of water.
- C. Store loose granular materials, with covering impervious to water, in well-drained area or on solid surfaces to prevent mixing with foreign matter.

1.6 FULLY PROTECTED STORAGE

- A. Unless otherwise approved by ENGINEER and OWNER, store all material and equipment not named in Articles 1.4 and 1.5 of this Section on supports in buildings or trailers that have concrete or wooden flooring, roof, and fully closed walls on all sides. Covering with visquine plastic sheeting or similar material in space without floor, roof, and walls is not acceptable. Comply with the following:
1. Provide heated storage for materials and equipment that could be damaged by low temperatures or freezing.
 2. Provide air-conditioned storage for materials and equipment that could be damaged by high temperatures.
 3. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.
 4. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

1.7 MAINTENANCE OF STORAGE

- A. On scheduled basis, periodically inspect stored materials and equipment to ensure that:
1. Condition and status of storage facilities is adequate to provide required storage conditions.
 2. Required environmental conditions are maintained on continuing basis.
 3. Materials and equipment exposed to elements are not adversely affected.
- B. Mechanical and electrical equipment requiring long-term storage shall have complete manufacturer's instructions for servicing each item, with notice of enclosed instructions shown on exterior of container or package.
1. Comply with manufacturer's instructions on scheduled basis.
 2. Space heaters that are part of electrical equipment shall be connected and operated continuously until equipment is placed in service and permanently connected.

1.8 MICROPROCESSORS, PANELS, AND INSTRUMENTATION STORAGE

- A. Store panels, microprocessor-based equipment, electronics, and other devices subject to damage or decreased useful life because of temperatures below 40 degrees F or above 100 degrees F, relative humidity above 90 percent, or exposure to rain or exposure to blowing dust in climate-controlled storage space.
- B. Requirements:
 - 1. Storage shall be fully protected and climate controlled storage as specified in Article 1.6 of this section.
 - 2. OWNER and ENGINEER have the right to inspect materials and equipment during normal working hours.
 - 3. Placed inside each panel or device a desiccant, volatile corrosion inhibitor blocks (VCI), moisture indicator, and maximum-minimum indicating thermometer.
 - 4. Check panels and equipment at least once per month. Replace desiccant, VCI, and moisture indicator as often as required, or every six months, whichever occurs first.
 - 5. Certified record of daily maximum and minimum temperature and humidity in storage facility shall be available for inspection by OWNER and ENGINEER. Certified record of monthly inspection, noting maximum and minimum temperature for month, condition of desiccant, VCI, and moisture indicator, shall be available for inspection by OWNER and ENGINEER.
- C. Costs for storing climate-sensitive materials and equipment shall be paid by CONTRACTOR. Replace panels and devices damaged during storage, or for which storage temperatures or humidity range has been exceeded, at no additional cost to OWNER. Delays resulting from such replacement are causes within CONTRACTOR's control.
- D. Do not ship panels and equipment to the Site until conditions at the Site are suitable for installation, including slabs and floors, walls, roofs, and environmental controls. Failure to have the Site ready for installation shall not relieve CONTRACTOR from complying with the Contract Documents.

1.9 RECORDS

- A. Keep up-to-date account of materials and equipment in storage to facilitate preparation of Applications for Payment, if the Contract Documents provide for payment for materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

++ END OF SECTION ++