

## SECTION 01600

MATERIAL AND EQUIPMENT (BEALE AFB)  
09/99

## PART 1 GENERAL

## 1.1 SECTION INCLUDES

A. General requirements for delivery, storage, handling, and installation of systems, materials, manufactured units, equipment, components, and accessories used in the work. Detailed requirements are specified in the product sections.

B. Contractor's options in selecting products and requesting substitutions.

## 1.2 MATERIAL AND EQUIPMENT

A. Comply with Standards and Specifications, including size, make, type and quality specified.

B. Manufactured and Fabricated Products:

1. Design, fabricate and assemble in accord with the best engineering and shop practices.

2. Manufacture like parts of duplicate units to standard sizes and gauges, to be interchangeable.

3. Two or more items of the same kind shall be identical and by the same manufacturer.

4. Provide products suitable for service conditions.

5. Adhere to equipment capacities, sizes and dimensions shown or specified unless variations are specifically approved in writing.

C. Use material or equipment only for purposes for which it is designed or is specified.

D. Fabricate and install equipment to deliver its full rated capacity at the efficiency for which it was designed.

E. Select and install equipment to operate at full capacity without excessive noise or vibration.

F. Provide electrical products with Underwriters Laboratories label or as approved by the local inspection authority.

## 1.3 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules, coordinate to avoid conflict with work and conditions at the site.

B. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

C. Immediately upon delivery, inspect shipments to assure compliance with requirements of Contract Documents and assure products are properly protected and undamaged.

D. The Contractor shall promptly return all defective materials without waiting for their rejection by the Contracting Officer.

E. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

#### 1.4 STORAGE AND PROTECTION

A. Store products in accord with manufacturer's instruction, with seals and labels intact and legible.

B. Store products subject to damage by the elements in weathertight enclosures.

C. Maintain temperature and humidity within the ranges required by manufacturer's instructions.

D. Protect equipment and systems from moisture, chemical or mechanical damage before and after installation.

E. Protect shafts and bearing housings from rust.

F. Exterior Storage:

1. Store fabricated products above ground, on blocking or skids, prevent soiling or staining. Cover products which are subject to deterioration with impervious sheet coverings, provide adequate ventilation to avoid condensation.

2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

G. Arrange stored products in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration.

#### 1.5 INSTALLATION

A. The installer of each major unit of work shall inspect the substrate to receive work and conditions under which the work is to be performed. The installer shall report all unsatisfactory conditions in writing to the Contractor. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

B. Manufacturer's Instructions: Where installations include manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation, to the extent that these instructions and recommendations are more explicit or more stringent than requirements indicated in the contract documents.

C. Compatibility of Materials. It is the responsibility of the Contractor to provide materials and products that are compatible with other

new materials and products and with the existing conditions. Where necessary, provide for separation of non compatible materials and products and notify the Contracting Officer or his authorized representative in writing of any conditions where non compatible materials and products exist before beginning work in that area.

D. Provide attachment and connection devices and methods for securing work. Secure work true to line and level, and within recognized industry tolerances. Allow expansion and building movement. Provide uniform joining width in exposed work. Refer questionable visual effect choices to the Contracting Officer or his authorized representative for final decision.

E. Recheck measurements and dimensions of the work, as an integral step of starting each installation.

F. Install each unit-of-work during weather conditions and project status which will ensure the best possible results in coordination with the entire work. Isolate each unit of work from incompatible work as necessary to prevent deterioration.

G. Coordinate enclosure of the work with required inspections and tests, so as to minimize the necessity of uncovering work for that purpose.

H. Protection After Installation:

1. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.

2. Plug or cap pipe and conduit openings to prevent the entrance of foreign matter.

3. Remove protective devices when no longer needed.

#### 1.6 ALIGNING JOINTS IN FINISH MATERIALS

A. It shall be the responsibility of the Contractor to make certain in the installation of jointed floor, wall, and ceiling materials that:

1. The joints align through in a straight line and in both directions wherever possible.

2. The joints shall be symmetrically placed wherever possible.

3. If, because of the non-related sizes of the various materials and locations of openings, etc., it is not possible to accomplish the above, the Contractor shall meet the Contracting Officer, Project Engineer and Inspector at the site to determine the most satisfactory arrangement.

#### 1.7 SYSTEMS DEMONSTRATION

A. Prior to final inspection, demonstrate operation of each system to Contracting Officer.

B. Instruct Government's personnel in operation, adjustment, and maintenance of equipment and systems, using operation and maintenance data as the basis of instruction.

## 1.8 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Products are generally specified by ASTM or other reference standard and/or by manufacturer's name and model number or trade name. When specified only by reference standard, the Contractor may select any product meeting this standard, by any manufacturer. When only one product and manufacturer is specified or when several products or manufacturers are specified as being equally acceptable, the Contractor has the option of using any product and manufacturer combination listed or using a product and manufacturer whose equivalence can be demonstrated to the satisfaction of the Contracting Officer.

B. It is the responsibility of the Contractor to provide catalog cuts of both the specified material and the substitute to allow evaluation of the equivalence by the Government.

C. The Contracting Officer may require testing of material to prove equivalency of the substitute. All costs for testing shall be the responsibility of the Contractor. The Contractor shall provide independent testing results from any laboratories as mentioned in the different Specification Sections.

D. Materials that are installed prior to submittal of the test results will be randomly tested during installation of the material. Material failing to pass all testing will be removed at the expense of the Contractor and new material shall be installed at no cost to the Government.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

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