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MILITARY SPECIFICATION

BUILDING, PREFABRICATED, READY CUT, METAL, RIGID FRAME 40 X 100 FEET

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers two types of prefabricated ready-cut metal, rigid frame 40 x 100 feet buildings with all necessary components, accessories, fasteners, anchor bolts, and such materials as specified or required to permit the complete and weather-tight functional building ready for erection.

1.2 Classification. The prefabricated metal buildings furnished under this specification shall be of the following types as specified (see 6.2.1):

Type I - Standard building.
Type II - High strength building.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

|Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, Port Hueneme, CA 93043-5000, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.|

AMSC N/A FSC 5410

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SPECIFICATIONS

FEDERAL

PPP-B-601 - Boxes, Wood, Cleated-Plywood.
PPP-B-621 - Boxes, Wood, Nailed and Locked Corner.
PPP-B-636 - Boxes, Shipping, Fiberboard.
PPP-T-97 - Tape, Pressure-Sensitive Adhesive, Filament Reinforced.
QQ-S-781 - Strapping, Steel and Seals.

STANDARD

FEDERAL

FED-STD-595 - Color.

MILITARY

MIL-P-116 - Preservation, Methods of.
MIL-C-3774 - Crate, Wood, Open, 12,000 and 16,000 Pound Capacity.
MIL-B-26195 - Boxes, Wood-Cleated, Skidded, Load-Bearing Base.
MIL-C-52950 - Crates, Wood, Open and Covered.

STANDARDS

MILITARY

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-1186 - Cushioning, Anchoring, Bracing, Blocking and Waterproofing, with Appropriate Test Methods.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Other Government documents. The following other Government documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issues are those in effect on the date of the solicitation.

Naval Facilities Engineering Command (NAVFAC)

NAVFAC Design Manual 2.2 - Loads, Structural Engineering.

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2.3 Non-Government publications. The following document(s) form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents which is current on the date of the solicitation (see 6.2).

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

ANSI A156.2 - Locks and Lock Trim.
ANSI A156.4 - Door Controls-Closers.

(Application for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 307 - Carbon Steel Externally and Internally Threaded Fasteners.
ASTM A 325 - High Strength Bolts for Structural Steel Joints Including Suitable Nuts and Plain Hardened Washers.
ASTM A 449 - Quenched and Tempered Steel Bolts and Studs.
ASTM B 209 - Aluminum Alloy Sheet and Plate.
ASTM B 308 - Aluminum Alloy Standard Structural Shapes Rolled or Extruded.
ASTM E 84 - Surface Burning Characteristics of Materials, Test for.
ASTM E 136 - Noncombustibility of Elementary Materials, Test for.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)

NBMA - Recommended Design Practices Manual.

(Application for copies should be addressed to Metal Building Manufacturers Association, 1230 Keith Building, Cleveland, OH 44115.)

(Non-Government standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

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2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The building shall be unassembled prefabricated metal structures of the rigid frame type. Each building shall have roll-up type doors, two personnel doors, and six windows, three on each side. Interior floor space shall be free of supports. The manufacturer's standard diagonal roof and side bracing shall be provided to comply with the design loads for a type I building. Diagonal bracing on interior frames shall not interfere with the clear height from underside of the frame to the foundation. Each building shall include all prefabricated components and all materials as specified for a complete building ready for erection. Provisions for field conversion of a type II high strength building shall be made.

3.2 First article. When specified (see 6.2.1), the contractor shall furnish one complete building for first article inspection and approval (see 4.3 and 6.4).

3.3 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification

3.3.1 Steel.

3.3.1.1 Structural steel. Steel for structural and framing members shall be a structural grade steel having a yield strength and section modulus to meet the required building design and load requirements; all bar, strip, sheet, and plate for flange on rigid frame section shall have a yield strength of not less than 50,000 pound per square inch. Structural steel which is exposed to weather shall be provided with an integral corrosion-inhibitive coating or shall be treated and painted in a color matching the sheet finish.

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3.3.1.2 Steel sheeting. Steel sheeting for flashing, roof, and sides shall be a commercial grade having a yield strength and section modulus to meet the building design criteria. The sheeting shall be provided with an integral corrosion-inhibitive coating and primed and finished on both sides with an oven-dry finish in accordance with the manufacturer's standard process.

3.3.2 Aluminum.

3.3.2.1 Structural aluminum. Aluminum for structural and framing members shall be a structural aluminum alloy conforming to ASTM B 308 having a yield strength and section modulus to meet the required design criteria. Structural aluminum shall be treated and finished in a color matching the sheeting finish.

3.3.2.2 Aluminum sheeting. Aluminum sheeting for flashing, roof, and sides shall be a commercial alloy conforming to ASTM B 209 having a yield strength and section modulus to meet the required design criteria. The sheeting shall be primed and finished on both sides as standard with the manufacturer.

3.4 Design.

3.4.1 General design. Unless otherwise specified (see 6.2.1), the design of the building shall be in conformance with the applicable requirements of the MBMA, the latest issue in effect at the time fo the proposal and other codes as referenced therein. Seismic loading shall be considered. When required, the NAVFAC Design Manual 2.2 shall be used to suplement the load requirements.

3.4.2 Building dimensions. Nominal building size shall be 40 feet wide by 100 feet long. Roof slope shall be 4:12 with a nominal eave height of 14 feet. Each end wall shall have a roll-up type door not less than 13 feet high by 12 feet wide. Bay spacing shall be nominal 20 feet for the type I building, 10 feet for the type II. The total gross louver opening shall be not less than 16 square feet.

3.4.3 Structural loads.

3.4.3.1 Type I. The type I building shall be designed for the following loads:

Wind load: 100 miles per hour (mph).
Snow load: 30 pounds per square foot (psf).
Roof live load: 5 psf + snow load.
Concentrated load: 2,000 pounds (lb) suspended from any point on any rigid frame.

When a type I building is required (see 6.2.1), the manufacturer's erection/assembly manual shall include all the identification data to permit ordering the required additional structural components and material (as a kit) to convert a type I building to a type II strength building.

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3.4.3.2 Type II. The type II building shall be designed for the following loads:

Wind: 180 mph.
Snow load: 60 psf.
Roof live load: 5 psf + snow load.
Concentrated load: 2,000 lbs suspended from any point on any rigid frame.

When a type II building is required (see 6.2.1), it shall be a type I building with the additional structural members, purlins, rigid frames, girts, and associated hardware to meet the load requirements specified herein.

3.4.4 Enclosed and open restraint. Both type buildings shall be capable of withstanding their respective design load with the building totally enclosed, as in normal use. In addition, the load requirements shall be met without sides and end walls but with the roof and all primary structural members in place. Secondary structural members shall not be permitted in the side or end walls of the open building. When the option of enclosing the building completely with sidewalls is exercised, the loading specified in 3.4.3.1 and 3.4.3.2 will be exceeded, so that they will be met in the open wall configuration.

3.4.5 Thermal loads. The building with all of its component parts and accessories shall be capable of functional operation in all environmental conditions encountered in -30 degrees Fahrenheit (°F) to +120°F.

3.4.6 Fasteners.

3.4.6.1 Bolts. Bolts for joining main structural frame members and column base clips shall be high-strength bolts conforming to ASTM A 325. Anchor bolts shall conform to ASTM A 449. All other bolts and nuts shall conform to ASTM A 307. Washers and screws not otherwise specified shall be commercial grade. All bolts, nuts, and washers shall be provided with an integral corrosion-inhibitive coating. All nuts and bolts shall be hexagonal head, except that anchor bolts may be the bent type.

3.4.6.2 Sheet-to-sheet fasteners. The blind rivet shall be an aluminum alloy body of a minimum 0.156-inch size and have sufficient shear and tension properties to withstand all design loads specified. Each rivet shall have a synthetic resilient washer. Protection from electrolytic action of the dissimilar metals shall be provided by a surface or chemical treatment of the aluminum rivet for that portion contacting steel sheeting. Fasteners for attaching sheet-to-sheet wall panels shall be blind rivets. Fasteners for attaching sheet-to-sheet roof panels shall be either blind rivets or self-drilling screw. The self-drilling screws shall be a minimum 1/4-inch size by 0.75-inch long with an integral corrosion-inhibiting coating to meet the requirements specified herein.

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3.4.6.3 Sheet-to-structural fasteners. Screws for fastening sheets and flashing to framing or structural members shall be of the self-tapping corrosion-resistant type and capable of tapping 0.175-inch thick structural grade steel. Self-drilling screws are an acceptable option. The fasteners shall not be smaller than 1/4-inch screw size by 0.750-inch long and shall have a hexagonal washer head. Each fastener shall have an integral combination washer, consisting of a corrosion-inhibitive coated cupped washer and a synthetic resilient washer of a minimum of 0.042-inch thickness, capable of providing a weathertight seal. The screws shall be fabricated from a metal alloy which is both compatible with the other structural components and of adequate strength for the loads specified. Exposed fasteners shall be provided wtih a prime coat and a finish coat which matches the exterior color.

3.4.7 Fire hazard class. All material, including but not limited to the finish, shall be noncombustible when tested in accordance with 4.6.2. All material shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with 4.6.2.

3.5 Construction. All building structure members shall be constructed by methods normally practiced by the manufacturer. The connection of all pieces shall provide for ease of assembly. Dimensions and tolerances shall be strictly controlled to insure proper operation of all components and interchangeability of all parts bearing the same assembly mark. The building shall be designed and constructed to facilitate field maintenance and conversion from one load design criteria to the other. All adjustments and replaceable accessories shall be readily accessible.

3.5.1 Closures. The manufacturer's standard closure matching the sheet profile (ribs) shall be provided for installation along the eave, rake, and at all accessory openings as required to achieve weathertight integrity. The roof and wall panel systems shall provide a leak-free structure under the design conditions specified. The building shall not leak when subject to the wind speeds specified in paragraphs 3.4.3.1 and 3.4.3.2, for wind in combination with either rain or snow. Other methods standard to the manufacturer for achieving the preceding effect are acceptable. A 2 percent excess of closure parts shall be furnished with each building.

3.5.2 Calking compound. The calking compound or sealant for making the side laps and end laps of wall and roof sheets weathertight shall be the manufacturer's standard for the specified environmental conditions.

3.6 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified (see 6.2.1). Surfaces to be painted shall be cleaned and dried to insure that they are free from contaminants such as oil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other interfering substances. As soon as practicable after cleaning, and before any corrosion product or other coating interfering can result, the surface shall be prepared or treated to insure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat. The primer shall

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be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects. Color of the finish coat shall be Desert Beige, Light Brown or Tan conforming to FED-STD-595 or other manufacturer's standard color as specified (see 6.2.1). The end item, allied equipment, and attachments shall be the same color.

3.7 Exterior openings.

3.7.1 Personnel doors. Each building shall have two heavy-duty personnel doors with one on each side of the building. Doors shall be full flush or with solid glazing in upper half. Each personnel door shall be provided with a traditional or modern surface closure, size IV, in accordance with ANSI Z156.4. Personnel doors and door frames shall be steel or aluminum. The personnel doors shall be 36 inches by 80, to 84 inches by 1.75 inches thick. The personnel doors shall be provided with cylindrical locks conforming to ANSI A156.2, series 4000, grades 1 or 2, function No. F81. The entrance door lock sets for each individual building shall be cross-keyed to permit unlocking either door with the keys from either lock set.

3.7.2 Equipment doors. Each building shall have two equipment doors, one in each end to cover the required opening (see 3.4.2). Equipment door assemblies shall be roll-up type door assemblies. Equipment door assemblies must meet all design loading and requirements specified. Door assemblies shall be furnished with all hardware and accessories necessary for installation and operation. Hardware shall include a latching mechanism with handles and means for utilizing a padlock for security.

3.7.3 Windows. Each building shall be provided with six windows, three on each side, as commercial standard design, and not less than 15 square feet area per window. Windows shall be aluminum horizontal sliding. Windows shall be provided with spring-loaded locking handles to lock automatically upon closing, plastic acrylic glazing cushioned in the frame to be weathertight, and easily replaceable insect screening. Windows shall be break-resistant clear acrylic glazing and hot-stamped. Aluminum windows shall be fabricated from alloy not less than 0.062-inch thick and with a commercial mill finish. Screen shall be of the exterior type.

3.7.4 Ventilators and louvers. Each building shall be provided with a ridge ventilator, two end wall louvers, and two smokestack ventilator assemblies. The ridge ventilator and louvers shall be positive closing and manually adjustable from the floor of the building. The smokestack assemblies shall each have an integral down draft diverter and a damper incorporating a positive means of adjustment. The ridge ventilator shall have a throat opening of not less than 9 inches by 120 inches long. The ridge ventilator shall be provided with preformed closure strips for obtaining a weathertight seal. The smokestack ventilators shall be sized for use with a 10-inch diameter fuel pipe. Ridge ventilator, and smokestack ventilators shall have

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the manufacturer's heavy-duty, corrosion-resistant metal bird screening. Opening size in the bird screen shall be in the range of 0.25 inch to 0.5 by 0.5 inch.

3.7.5 Insect screeing. Screening for the windows shall be aluminum or plastic-coated continuous, fibrous glass filament. The plastic screening shall be heat, flame, and mildew resistant. The filament diameter shall be not less than 0.011 inch. Screening for the ridge ventilator, louvers, and smokestack ventilators shall be aluminum, bronze, or copper wire. The mesh size shall be not less than 18 by 18 or more than 14 by 14 for both plastic and metal screening.

3.8 Extra materials. The contractor shall furnish not less than an additional 5 percent of bolts, nuts, washers, screws, blind rivets, and other fasteners needed, 4 quarts of caulking compound or sealant, 4 quarts of matching touchup paint. The additional material shall be of the same type and character supplied for the assembly of the building in the field.

3.9 Dissimilar metals. Direct contact between dissimilar metals should be avoided. When such contact cannot be avoided, an interposing insulating material shall be provided to minimize the corrosive effect.

3.10 Identification marking. Unless otherwise specified (see 6.2.1), each building shall be identified in conformance of the manufacturer's standard practice.

3.11 Erection marks. The erection mark of each component, structural member, or piece shall be placed on the items in the manner standard with the manufacturer.

3.12 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of components, parts, assemblies, accessories, and spare parts.

3.13 Workmanship.

3.13.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.13.2 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

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3.13.3 Riveted connections. Rivet holes shall be accurately punched or drilled and shall have the burrs removed. Rivets shall be driven with pressure tools and shall completely fill the holes. Rivet heads, when not countersunk or flattened, shall be of approved shape and of uniform size for the same diameter of rivet. Rivet heads shall be full, neatly made, concentric with the rivet holes, and in full contact with the surface of the member.

3.13.4 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practic to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2.1).
b. Quality conformance inspection (see 4.2.2).

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4.3 First article inspection. The first article inspection shall be performed on one complete building when a first article is required (see 3.2 and 6.2.1). This inspection shall include the examination of 4.5 and the tests of 4.6. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.4 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.5 and the packaging inspection of 4.7. This inspection shall be performed on the samples selected in accordance with 4.4.1.

4.4.1 Sampling for lot acceptance.

4.4.1.1 Inspection lot. All complete buildings offered for delivery at one time shall be considered a lot for purposes of inspection.

4.4.1.2 Sampling for examination. Random samples of complete buildings shall be selected from each lot in accordance with MIL-STD-105 (see 6.5).

4.5 Examination. The test erection unit and each sample selected in accordance with 4.4.1 shall be examined for compliance with the requirements specified in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.6 Tests. Tests shall be conducted as specified herein. Specification of test requirements does not preclude the use of other test fixtures if the mechanics of the systems are duplicated for similar tests. Any failure of welds or mechanical joints, and any permanent distortions or any other damage to any part of the item, that would affect serviceability will be considered as failing to comply with the requirements of this specification. Certified evidence of compliance with all applicable tests must be available upon request. Items used in the tests must be available for examination by the inspector.

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4.6.1 Test erection unit. The inspector shall select at random from the first article building, the components to be combined to form two complete rigid frame end bays and one complete intermediate bay, including sufficient side sheets, roof sheets, and flashing to portray adequately the erection procedure and fit on one each of the following items:

a. End wall doors.
b. Sliding sash aluminum window.
c. Personnel door.
d. Louver.
e. Ventilator.
f. Smokestack assembly.

The sag rods and diagonal bracing shall be used during test erection by the contractor. The bays shall be erected on a foundation or slab with appropriate anchoring devices where anchor bolts are indicated on the reference drawings. The foundation shall be level or capable of being leveled by shims at anchor bolt points so that a total horizontal deviation between any two anchor bolt points shall be greater than 0.125 inch. The bays shall be erected using the standard tool for this type of work, and when necessary, a gin pole for raising the frames. The components shall fit together to form three bays without any racking, bowing, bending, deformation, or redesigning of parts. Boltholes shall aline properly to receive the fasteners, using only drift pint to aid final alinement. Ease of assembly, fit, and alinement of parts and boltholes are essential requirements. Any necessary correction or modification following failure to meet specified requirements shall require reinspection and shall receive particular attention for adequacy and suitability. The contractor shall provide all labor, facilities, and supplies necessary for test erection assembly and disassembly, tough-up painting where the protective coating has been damaged; and repair or replacement components of the test erection unit may be submitted as part of a compelted production unit. All flashing, side sheeting, and roof sheeting used in the test erection unit shall be replaced with new sheets.

4.6.2 Fire hazard test. All materials utilized in the building shall have a fire hazard classification established in accordance with ASTM E 84 for surface burning characteristics. Additionally, all materials shall be rated noncombustible in accordance with ASTM E 136 (see 3.4.7).

4.7 Packaging inspection. The preservation, packing, and marking of the building, shall be inspected to verify conformance with the requirements of section 5.

5. PACKAGING

5.1 Preservation. Preservation shall be level A or commercial as specified (see 6.2.1).

5.1.1 Level A.

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5.1.1.1 Methods of preservation. Cleaning processes, drying procedures, preservatives, and methods of preservation specified in the following paragraphs are listed in MIL-P-116 and shall conform to the requirements of MIL-P-116 and any applicable specifications.

5.1.1.2 Cleaning and drying. Prior to the application of preservative compounds or paint, surfaces shall be cleaned by process C-1 and dried by any applicable procedure of MIL-P-116.

5.1.1.3 Unpainted surfaces. Unpainted and uncoated exposed ferrous metal surfaces of component parts of the building, shall be coated with type P-1 preservative. Joints of hinges shall be coated with type P-9 preservative.

5.1.1.4 Paint and calking. Paint and calking compoune, for one complete building, shall be packaged in fiberboard boxes conforming to PPP-B-636, weather resistant.

5.1.1.5 Fasteners. Fasteners for one complete building shall be packaged method III.

5.1.1.6 Ventilators, louvers, smokestacks, and equipment door hardware. The items needed for one complete building shall be packaged method III.

5.1.1.7 Flashing, ducts, beam and girder connectors, struts, braces, rods, roof tie assemblies, and ridge end covers. These items of like description for one complete building shall be bundled together to form a nonshifting bundle which will provide convenient handling. The bundles shall be secured with tape conforming to PPP-T-97, type IV, or with soft annealed wire. The threaded surface of the rods shall be protected to prevent damage to the threads.

5.1.1.8 Consolidation container. Small components required for one complete building shall be consolidated and packed in boxes conforming to PPP-B-636, class weather-resistant. Contents shall be cushioned, blocked, and braced to prevent movement in accordance with MIL-STD-1186.

5.1.2 Commercial. The complete building shall be preserved in accordance with the contractor's standard practice in a manner to prevent deterioration and damage.

5.2 Packing. The packing shall be level A or commercial as specified (see 6.2.1).

5.2.1 Level A. Only one complete unassembled building shall be packed as a set consisting of bundled boxes, and crates. Components shall be arranged within each bundle, box, or crate to provide ease of erection of the building when removed. Sequence of packing shall conform to sequence of construction as nearly as possible, so all items needed for a particular assembly and operation are packed together, obviating the necessity to open, search, and expose the contents of particular bundles or container to the weather merely to locate a few needed items.

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5.2.1.1 Doors, louvers, smokestacks, bundled components, and consolidated packages. These items shall be packed in boxes conforming to PPP-B-621 class 2; PPP-B-601, overseas type; or MIL-B-26195, type II, style and class optional, with plywood superstructure. The contents shall be cushioned, blocked, braced, and waterproofed with a shroud in accordance with MIL-STD-1186.

5.2.1.2 Structural members. Structural members, such as steel girders, purlins, and similar components shall be nested, arranged, and secured with bolts or steel straps, or a combination of both, to form compact nonshifting bundles. Suitable wood blocking shall be used, as required, under stapping to eliminate large voids or irregular shaped bundles. Strapping shall be 0.023- by 3/4-inch flat steel conforming to QQ-S-781, class 1, type I, finish B. Strapping shall be stapled to any wood blocking provided. Strapping shall be spaced not to exceed approximately 36 inches on center, with end straps placed not more than 18 inches from each end. Metal edge protectors shall be used when strapping bears on edges of structural member in the bundles. Bundled structural members shall have wooded blocks secured to the bottom of the load to provide for handling by forklift and for stacking. The height of the bottom shall be not less than 2-1/2 inches. The bundles shall not exceed approximately 5,000 lb. When specified (see 6.2.1), the individual bundles shall be packed to provide minimum cubical size in crates conforming to MIL-C-52950, type III. The contents shall be blocked, braced, or otherwise anchored in accordance with the appendix to the crate specification.

5.2.1.3 Sheeting. Roof and wall sheeting shall be packed in crates conforming to MIL-C-52950, type II or III, or MIL-C-3774, type I or II depending upon the size and weight of each load. Contents shall be waterproofed (with full shrouds), cushioned, anchored, and closed in accordance with the appendix to the applicable crate specification.

5.2.2 Commercial. The complete building shall be prepared for shipment in a manner which will insure arrival at destination in a satisfactory condition. Preparation for delivery shall comply with applicable carrier rules and regulations.

5.3 Marking. Marking shall be in accordance with MIL-STD-129.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The building covered by this specification is intended for advanced base use. Two basic structural loadings are covered. Conversion from one loading to the other is to be effected utilizing the required structural members in the form of a kit (see 3.4.3.2).

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6.2.1 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.
b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
c. When first article is required for inspection and approval (see 3.2, 4.3, and 6.4).
d. When structural design is to be other than as specified (see 3.4.1).
e. Desired finish color (see 3.6).
f. When treatment and painting is required (see 3.6).
g. When identification marking is required (see 3.10).
h. When design data shall be provided (see 3.14).
i. Level of preservation and level of packing required (see 5.1 and 5.2).
j. When building structural members are to be crated (see 5.2.1.2).

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (CDRL), incorporated into the contract. When the provisions of DOD FAR Supplement, Part 27, Sub-Part 27.475-1 (DD Form 1423) are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 First article. When a first article inspection is required, the item will be tested and should be a first production item or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.5 Sampling procedures. Recommended inspection level is S-2 and the Acceptable Quality Level is 4.0 percent defective (see 4.4.1.2).

6.6 Subject term (key word) listing.

High strength buildings
Metal/steel building
Prefabricated buildings
Rigid-frame building
Standard buildings
Structural building

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6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Army - GL
Navy - YD
Air Force - 99

Review activities:
Navy - MC
Air Force - 84
DLA - CS

Preparing activity:
Navy - YD

(Project 5410-0321)

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STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions – Reverse Side)

1. DOCUMENT NUMBER	2. DOCUMENT TITLE
MIL-B-28536C	BUILDING, PREFABRICATED, READY CUT, METAL, RIGID FRAME 40 x 100 FEET

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR
b. ADDRESS *(Street, City, State, ZIP Code)*	☐ USER
	☐ MANUFACTURER
	☐ OTHER *(Specify)*:

5. PROBLEM AREAS

a. Paragraph Number and Wording:

b. Recommended Wording:

c. Reason/Rationale for Recommendation:

6. REMARKS

7a. NAME OF SUBMITTER *(Last, First, MI)* – Optional	b. WORK TELEPHONE NUMBER *(Include Area Code)* – Optional
c. MAILING ADDRESS *(Street, City, State, ZIP Code)* – Optional	8. DATE OF SUBMISSION *(YYMMDD)*

(TO DETACH THIS FORM, CUT ALONG THIS LINE.)

DD FORM 82 MAR 1426

PREVIOUS EDITION IS OBSOLETE.