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NAVFAC PTS-F10 (September 2022)  
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Preparing Activity: NAVFAC SUPERSEDING PTS-F10 (December 2018)  
  
PERFORMANCE TECHNICAL SPECIFICATION  
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SECTION F10  
  
SPECIAL CONSTRUCTION  
09/22

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NOTE: This section is intended to be used as a guide and contains requirements that are common to many different types of facilities. In addition, there may be special requirements for a particular project that are not addressed at all. The RFP preparer will need to incorporate additional information to address these special requirements in this PTS and corresponding Part 3 ESR. If the RFP Preparer chooses to delete building elements that are not required for the project, do not change the remaining Uniformat paragraph designations (example A102001). Uniformat designations are unique to the products they are assigned to. However, the subparagraphs numerical extension (example – 1.2 or a,b,c of the Uniformat designations may change if subparagraphs are deleted.  
  
This guide specification is formatted utilizing Uniformat II, an industry recognized standard, ASTM E 1557. When the RFP preparer chooses to add a paragraph that does not apply to an existing building element already included in the specification, refer to the Uniformat/WBS located on the NAVFAC Design-Build Website for a listing of Uniformat II designations and definitions.  
  
NOTE: The RFP preparer may view or hide the criteria notes in this PTS section by modifying the WORD preferences for "Hidden text". To view the criteria notes, choose "File" then "Option". Click "Display" then check the "Hidden text" box under "Always show these formatting marks on the screen". In the same section, check the box for "Print hidden text" under "Printing options" to print the criteria notes.  
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NOTE: The following Table of Contents is for navigation purposes within the document and is not intended to be part of the final edited documents.  
  
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**F10 GENERAL**

RFP Part 3 including the Engineering System Requirements (ESR) provide project specific requirements. The RFP Part 4, Performance Technical Sections (PTS) provide generalized technical requirements that apply to multiple facility types and include more requirements than are applicable to any one project. Therefore, only the RFP Part 4 requirements that apply to the project and further define the RFP Part 3 project specific requirements are required.

**F10 1.1 DESIGN GUIDANCE**

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NOTE: This Performance Technical Specification (PTS) has been developed to utilize certain UFGS sections for prescriptive requirements. However, there may be rare occasions when additional prescriptive specifications may be identified by the Engineering Systems Requirements (ESR) to be edited by the Contractor's Designer of Record. If other UFGS sections or standards are to be referenced in this PTS section, list those not covered by the UMRL in the following two paragraphs.  
  
If the product or system is new and not covered in the PTS, provide a new paragraph and heading. If the product or system is presently covered in the PTS but is being changed by the reference to the UFGS, edit the PTS paragraphs to eliminate redundancy or conflicts. In either case, identify the UFGS section in the products and materials (UNIFORMAT II/WBS level 4) text of the PTS as follows:   
  
"Uniformat II/WBS Number – Paragraph Number Paragraph Heading   
The Designer of Record must utilize UFGS Section Number, "Section Title" for the project specification, and must submit the edited specification section as a part of the design submittal for the project."  
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Provide the design and installation in accordance with the following references. This Performance Technical Specification (PTS) adds clarification to the fundamental requirements contained in the following Government Standards. The general requirements of this PTS section are located in PTS Section Z10, *General Performance Technical Specification*.

Industry standards, codes, and Government standards referenced in the section text that are not found in the [Unified Master Reference List (UMRL)](https://www.wbdg.org/ffc/dod/unified-master-reference) in the [Federal Facility Criteria (FFC)](https://www.wbdg.org/ffc/federal-facility-criteria) at the [Whole Building Design Guide (WBDG)](https://www.wbdg.org/) website, are listed below for basic designation identification. Comply with the required and advisory portions of the current edition of the standard at the time of contract award.

**F10 1.1.1 Government Standards**

UNIFIED FACILITIES CRITERIA (UFC)

|  |  |
| --- | --- |
| UFC 1-200-01 | DoD Building Code ( (A reference in this PTS section to UFC 1-200-01 requires compliance with the Tri-Service Core UFCs that are listed therein, which includes the following significant UFC(s): UFC 3-101-01, Architecture, UFC 3-301-01, Structural Engineering) |
| UFC 1-200-02 | High Performance and Sustainable Building Requirements |
| UFC 4-211-01 | Aircraft Maintenance Hangars |
| FC 1-300-09N | Navy and Marine Corps Design Procedures |
| UFC 3-101-01 | Architecture |
| UFC 3-301-01 | Structural Engineering |

UNIFIED FACILITIES GUIDE SPECIFICATIONS (UFGS)

|  |  |
| --- | --- |
| UFGS 01 33 00 | Submittal Procedures |
| UFGS 01 45 00 | Quality Control |

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Utilize this paragraph to list tests to be performed by the Contractor as required by the Designer of Record (DOR). Delete the paragraph if there is to be no testing cited.  
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**F10 1.2 PERFORMANCE VERTIFICATION AND ACCEPTANCE TESTING**

Provide verification of satisfactory special construction system performance via Performance Verification Testing, as detailed in this section of the RFP. Provide special tests and special inspections in accordance with UFGS Section 01 45 00, *Quality Control*.

**F10 1.3 DESIGN SUBMITTALS**

Provide design submittals in accordance with Z10, *General Performance Technical Specifications*, UFGS section 01 33 00, *Submittal Procedures*, Facilities Criteria (FC) 1-300-09N, *Navy and Marine Corps Design Procedures*, UFC 3-101-01, *Architecture*, and UFC 3-301-01, *Structural Engineering*.

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NOTE: NAVFAC has made every effort to use commercial standards in the PTS sections. If project requirements dictate the use of a UFGS section as a standard, add a paragraph here listing the required UFGS section. State in the paragraph that the DOR must edit this UFGS section in accordance with PTS Z10 and submit it as a part of the design submittal.  
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**F10 1.4 CONSTRUCTION SUBMITTALS**

Submit construction submittals in accordance with PTS Section Z10, *General Performance Technical Specifications*. In addition to the Z10 requirements, the Designer of Record (DOR) must approve the following submittals as a minimum:

All structural elements necessary for construction.

For a pre-engineered metal building, provide shop drawings showing engineering data and complete building drawings, signed and sealed by a registered professional engineer.

**F1010 SPECIAL STRUCTURES**

**F101001 METAL BUILDING SYSTEMS**

**F101001 1.1 DESIGN REQUIREMENTS**

The metal building manufacturer must be accredited in accordance with all Parts of the Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems (AC472) by the International Accreditation Service, Inc. Design the Metal Building System in accordance with the Metal Building Manufacturers Association (MBMA) Low Rise Manual.

All structural design must comply with UFC 4-211-01, *Aircraft Maintenance Hangars* as well as the provisions of PTS Section B10, *Superstructure*. The steel structure must be as designed by the structural engineer. If used for thrust bracing, tie rods must be concrete encased. Design framed openings structurally.

**F101001 1.1.1 Additional Roof Design Requirements**

a. Roof Decking – In addition to any other load requirements, roof decking must be designed to support a 200–pound (91 kg) concentrated load at mid-span on a 12–inch (300 mm) wide section of deck.

b. In hangar bays, do not use the roof deck as a diaphragm.

**F101001 1.1.2 Deflection**

a. Structural Members   
  
1) Maximum deflection of main framing members and for roof members must not exceed the most stringent values required by UFC 3-301-01, UFC 4-211-01, and the International Building Code (IBC).  
  
2) Purlins and Roof Panels: The deflection due to live snow, or wind must not exceed the lesser of L/240 or as determined by the IBC for the appropriate finish types. The Basis of Design must establish that the roof when deflected under dead plus live or snow loads will not result in a negative gradient. Maximum deflections must be based on sheets continuous across two or more supports with sheets unfastened and free to deflect. Provide bracing of purlin compression flanges as required to resist the applied loading.

b. Wall Panels - Maximum deflection of wall panels due to wind loads must be as required by the IBC and UFCs.

**F101001 1.2 WALL AND ROOF MATERIALS**

**F101001 1.2.1 Aluminum/Zinc-Coated Steel Sheet**

American Society for Testing and Materials (ASTM) A792/ A792M, AZ 55.

**F101001 1.3 FRAMING AND STRUCTURAL MEMBERS**

**F101001 1.3.1 Steel**

ASTM A992 / A992M, ASTM A529/ A529M, ASTM A572/ A572M, or ASTM A588/ A588M.

**F101001 1.3.2 Structural Tube**

ASTM A500.

**F101001 1.4 MISCELLANEOUS ITEMS**

**F101001 1.4.1 Fasteners**

Fasteners must be compatible with the materials they are fastening to, be gasketed when exposed to weather to prevent leaks, and must provide both shear and tensile strengths not less than 750 pounds (3,336 N) per fastener. The main fastening system must use concealed fasteners, however, when exposed fasteners are needed, color fasteners must be color coated to match wall/roof panels.

**F101001 1.4.2 Insulation**

Blanket-type fiberglass insulation with a factory applied facing on one side and having a permeance rating of 0.05 or less in accordance with ASTM E96.

a. Flame Spread Rating 75 or less, and a Smoke Developed Rating of 150 or less when tested in accordance with ASTM E84.

b. Insulation R-value in accordance with ASTM C1363 as determined by energy use analysis or identified in the RFP.

**F101001 1.5 FINISH**

Factory Color Finish - Provide factory applied baked coatings to the exterior and interior of metal wall panels and metal accessories. Provide exterior finish top coat of 70 percent inorganic pigments with 0.8 mil dry film thickness (DFT). Provide exterior primer standard with panel manufacturer but not less than 0.8 mil DFT over the color topcoat and edge coating for projects within 300 feet (91 meters) of a water shoreline or industrial environments. Field apply 70 percent PVDF clear coat to unfinished panel edges or field cut panels. Interior finish exposed to sun or rain must be the same coating and DFT as the exterior coating. Interior finish protected from sun or rain exposure must receive 1.0 mil DFT coating of siliconized polyester (SMP) resin coating with organic or blended pigments and manufacturer’s standard primer.

**F1030 SPECIAL CONSTRUCTION SYSTEMS**

**F103001 VAULTS**

This paragraph is for prefabricated vaults. See PTS Section E10, Equipment, for vault doors and day gates.

-- End of Section --