

AIR STRUCTURE PERFORMANCE SPECIFICATIONS – DIVISION 13

General (Manufacturer)

All bidders to meet the following requirements:

1. Provide engineering for the design of structure and related systems.
2. Minimum of 10 years' experience in-house manufacturing of air structures.
3. Provide 4 engineered and manufactured structures of equal or greater magnitude.
4. Provide design specifications for the foundation system using existing cast in place concrete grade beams. Bidder to compare and verify bubble structure requirements to the soil boring recommendations.
5. Provide extrusion profile anchorage system for structure or proposed connection to existing anchorage system.
6. All design, materials, systems, and equipment must meet code.

Materials

The Air Structure outer fabric to be constructed of Shelter-Rite Style 9032 with opaque layer or approved equal, and option to include Tedlar finish or approved equal. The fabric shall meet or exceed the following specifications and shall not exceed 71" in width:

1. Base Fabric Wt. 28 oz. per sq.yd.
2. Color White Opaque
3. Base Type Polyester
4. Trapezoid Tear 100/100 lbs.
5. Grab Tensile 840/840
6. Strip Tensile 650/650 lbs./in.
7. Operating Temp Minus 40 degrees F to + 150 degrees F
8. Dead Load 2" seam, 4Hr 1" strip 266 lbs.@ room temp 133 lbs. @ 160F
9. Flame Resistance Meets NFPA 701. Meets Calif Fire Marshalls Req. and Pass 2 sec Flame-out Method 5903 (Flame resistance must meet code in Prince George's County).

The Air Structure inner liner shall be of Vintex Vinagard flame resistant gloss top coated fabric or approved equal, with a blue contrasting color base of the same material. The fabric shall meet or exceed the following specifications:

1. Coated Fabric Weight: 15oz.
2. Tensile Strength: 200 lbs. x 190 lbs.
3. Tear Strength: 80 lbs. x 150 lbs.
4. Color: White with Polyvinyl Chloride coating.
5. Flame out: NFPA 701

Fabrication

1. All fabric seams shall be properly constructed so that the seams will develop the full strength of the envelope fabric of the outer membrane.
2. 100% heat-sealed seams
3. The internal liner fabric shall be non-structural and cover the entire surface of the dome, white in color with a 15 feet contrasting color base.
4. All liner seams are to be continuously welded to the outer membrane at the welded seams of the membrane.
5. All liner seams are to be vertical.
6. Stress concentrations at openings in the main envelope walls such as doors, shall be minimized by isolating these areas with a cable centenary hoop around the openings and a transition boot with sufficient fullness and slack between the envelope and fixed attachments.
7. Design of the transition boots shall be made so that snow will not accumulate.
8. Bubble skirt shall be provided along length of bubble perimeter.

Lighting System

The LED lighting system shall be an indirect suspended hang light system that shall meet or exceed the following specifications.

1. Lighting shall be chain mounted or approved method.
2. The fixtures must have manufacturer installed internal wiring.
3. Lighting levels shall meet or exceed USTA requirements for tennis play.

Mechanical System Controls

The mechanical controls shall be an automated system manufactured by Automated Air Structures or approved equal. The system is to meet or exceed the following specifications:

1. The system shall have the capacity to monitor and control the Air Structure and automatically adjust the static pressure and space temperatures.
2. The system shall have the capacity to monitor critical outside weather conditions and maintain the integrity of the structure in any circumstance that may inhibit or impair the stability of the structure.
3. The system shall be able to provide energy management controls to optimize the HVAC costs.
4. The system shall have the ability, to monitor and automatically test the backup inflation equipment and provide a test history report.
5. The system shall be remote PC accessible.
6. The system shall have an alarm notification dial out capacity.

Insulation Materials

The air structure insulation material will be Tempshield Double Bubble or approved equal. The material shall meet or exceed the following specifications.

1. The material shall be constructed of 2 layers of polyethylene bubbles or approved equal.
2. The material shall have low-emissivity aluminum foil laminated on both sides. Insulation and foil covered by the fabric structure.
3. The material shall be of high-performance reflective type with an E-value of 0.03 and an average R-value of 10 or better.

Access / Doors

The air structure access doors are to be manufactured by Fizer Inc or approved equal. The doors shall meet or exceed the following specifications.

Emergency Exit Doors

Existing emergency exit doors should remain in place. If an emergency exit door is damaged during construction, the Contractor to repair/replace door, hardware, or frame. Contractor to provide cut sheets and specification for M-NCPPC to approve prior to repairing/replacing emergency exit doors. If the emergency door replacement is required, the new door shall meet or exceed the specifications of the existing door.

Revolving Door

The existing revolving door should remain in place. If a revolving door is damaged during construction, the Contractor to repair/replace door, hardware, or frame. Contractor to provide cut sheets and specification for M-NCPPC to approve prior to repairing/replacing revolving door. If a revolving door replacement is required, the new door shall meet or exceed the specifications of the existing door.

Personal Airlock

The existing airlock should remain in place. If a personal airlock and ramp is damaged during construction, the Contractor to repair/replace door, hardware, or frame. Contractor to provide cut sheets and specification for M-NCPPC to approve prior to repairing/replacing airlock door and including ramp. If the personal airlock door replacement is required, the new door shall meet or exceed the specifications of the existing door.

Roll Up Door at the Tennis Bubble

The existing roll up door should remain in place. If a personal roll up door is damaged during construction, the Contractor to repair/replace door, hardware, or frame. Contractor to provide

cut sheets and specification for M-NCPPC to approve prior to repairing/replacing roll up door. If a roll up door replacement is required, the new door shall meet or exceed the specifications of the existing door.

Contractor

The bidding contractor shall furnish all labor, materials, equipment, and services necessary for and reasonably incidental to complete the installation of the air structure.

Qualifications are as follows:

1. The contractor must have a Maryland Class A contractor license. The contractor may be from Maryland, Virginia, or Washington D.C, but must have a Class A contractor license in the state of Maryland.
2. Minimum of 10 years of experience in air structure installation.
3. Provide six (4) air structure references.
4. Have the ability to provide all electrical, mechanical, and other engineering services as required.
5. All subcontractors shall be licensed in the state of Maryland. The subcontractor may be from Maryland, Virginia, or Washington D.C, but must have a license in the state of Maryland.