

**MODULAR VAULT SYSTEM
SAMPLE SPECIFICATIONS – GOVERNMENT & MILITARY APPLICATIONS**

PART I – GENERAL

1.1 SUMMARY

- A. Section includes field-assembled, 5-sided modular vault panels and vault doors.

1.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Modular vaults shall withstand the effects of earthquake motions determined according to ASCE/SE3 7.
1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, installed weight, and finishes for modular vaults.
- B. Shop Drawings: For modular vaults. Include plans, elevations, sections, details, and attachments to other work.
1. Detail modular vault assemblies and indicate dimensions, weights, loads, method of field assembly, components, and location and size of each field connection.
 2. Show locations of electrical receptacles and light fixtures.
 3. Show locations of fire sprinklers.
- C. Setting Drawings: For anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors that are to be embedded in concrete.
- D. Samples for Initial Selection: For units with factory-applied color finishes.
- E. LEED Submittals:
1. Product Data and Documentation as required to meet requirements of Section 018113.13 "Sustainable Design Requirements --LEED for New Construction and Major Renovations,"
- F. Samples for Verification: For each type of exposed finish required, in manufacturers standard sizes.
- G. Delegated-Design Submittal: For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of modular vault panel and vault door, from manufacturer.
- B. Qualification Data: For qualified installer.
- C. Welding certificates.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for modular vault panels and vault doors.
- E. Field quality control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For modular vault doors to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include keying and combination information.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Product Options: Drawings indicate size, profiles, and dimensional requirements of modular vaults and vault doors and are based on the specific system indicated. See Section 016000 "Product Requirements."
 - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- D. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to modular vaults including, but not limited to, the following:
 - a. Structural load limitations.
 - b. Construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - c. Condition of floor recesses and other preparatory work performed by other trades.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver modular vault doors wrapped and crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
- B. Deliver keys to Owner by registered mail or overnight package service.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not deliver or install modular vaults until spaces are enclosed and weather-tight, wet work in spaces is complete and dry, and temporary HVAC system is operating and maintaining ambient temperature and humidity conditions at occupancy levels during the remainder of the construction period.
- B. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel Plate, Shapes, and Bars: ASTM A 36/A 36M **As Applicable**.
- B. Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B **As Applicable**.
- C. Stainless-Steel Sheet: ASTM A 666, Type 304 **As Applicable**.
- D. Aluminum Plate and Sheet: ASTM B 209 **As Applicable**.
- E. Aluminium Extruded Bar and Tube: ASTM B 221 **As Applicable**.
- F. Nonshrink Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout; noncorrosive; nonstaining; mixed with water to consistency suitable for application and 30-minute working time. **As Applicable**.

2.2 MODULAR SECURITY VAULT PANELS

- A. General: **List Requirements Here**.
 - 1. Basis of Design: CustomVault (**Vault Specifics Here**).
- B. Vault Panels: Modular, **Specifics Here** with integral penetrations for sprinklers; conduits for power, signal, and communication systems; and ventilating ports.
 - 1. Panel Connections: **Specifics Here**
 - 2. Finish: **Specifics Here**
- C. Ventilating Ports: **Specifics Here** complying with **UL 608**, GSA AA-V-2737 including all amendments, AA-D-600 including all amendments, and AR-190-11 requirements.
- D. Conduit Penetrations: **Specifics Here** for alarm/electric/data access, complying with **UL 608**, GSA AA-V-2737 including all amendments, AA-D-600 including all amendments, and AR-190-11 requirements.
- E. Fire Sprinkler Pipe Penetration: **Specifics Here** designed to meet **UL 608**, GSA AA-V-2737 including all amendments, AA-D-600 including all amendments, and AR-190-11 and tested to 200 psi.
- F. Flush Mounted Retractable "D" ring attachments: **Specifics Here**

2.3 VAULT DOOR AND FRAME ASSEMBLIES

- A. Security Vault Door and Frame Assembly: Comply with UL 608, GSA AA-V-2737 including all amendments, AA-D-600 including all amendments, and AR-190-11 requirements:
 - 1. Clear Opening Size and Double or Single Leaf Door.
 - 2. Lock Specifics with emergency escape mechanism.
 - 3. Provide an Issue Port daygate.
 - 4. Door contact alarm device.
 - 5. Finish: Specifics Here.
- B. Emergency Vault Ventilators. Specifics Here.

2.4 VAULT DOOR HARDWARE AND ACCESSORIES

- A. General: Provide hardware components as required for specified UL listing.
- B. Hinges: No fewer than three roller-thrust-bearing hinges of design, size, and weight required for smooth operation of door and to allow full, clear door opening; with hinge cover(s).
- C. Door Bolts: Permanently lubricated, not less than 11/16 inches in diameter, and fabricated from nickel-plated steel. On each vertical side of door; provide five door bolts that engage frame when extended. Bolts shall automatically retract when handle is operated and automatically extend when door closes.
- D. Handle: Manufacturer's standard.
- E. Combination Locks for Security Door: Dual-control, UL 768, Group 1, electronic type (S & G 2937), capable of no fewer than one million possible combinations; with UL 887 listed, three-movement, 144-hour time lock; equipped with UL 140 relocking device that automatically locks bolt when lock is subjected to mechanical attack.
 - 1. Provide drill-resistant metal plate for protection of lock case and locking mechanism.
- F. Relocking Devices: UL 140 listed, designed to automatically lock door bolts when vault door is subjected to mechanical or torch attack.
- G. Escape Mechanisms: Provide emergency operation of lock from vault side of vault door by means of inside door release fabricated from stainless-steel rod.
- H. Door Closer: Automatic, with electromagnetic system and sensor that releases door on detection of heat or smoke; with 180-degree, hold-open position.
 - 1. Sills: Reinforced, formed stainless-steel plate.
- J. Door Stop: Specifics Here.
- K. Trim: Stainless steel, chromium-plated steel, or other trim standard with vault door manufacturer.

- L. Day Gates: Manufacturer's standard gate; full width of door opening and designed to restrict entry through modular vault door; with piano-type or self-closing gravity hinges that swing gate into room.
 - 1. Locks: Equip gates with cylinder-type lock, controlled by key on non-secure side and by knob on secure side.
 - 2. Stainless-Steel Gates: Round or square, vertical, stainless-steel bar grille; with manufacturer's standard finish.

2.5 FABRICATION

- A. Fabricate modular vault panels and vault doors to work as an integrated system that complies with classification indicated.
- B. Fabricate vault panels from materials and of size, thickness, and perimeter profile required for a complete vault system that complies with UL listing. Design, engineer, and fabricate supplemental structural members as required for spans indicated.
 - 1. Security Vault Panels: [Specifics Here](#).
 - 2. Fire-Rated Vault Panels: [Specifics Here](#).
- C. Fabricate fire rated-vault door assemblies [Specifics Here](#).

2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 PAINT FINISHES

- A. Finish: [Specifics Here](#).

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, vault door clearances, and other conditions affecting performance of the Work.
- B. Examine recesses where recessed vault floor panels are to be installed. Recesses shall be level, plumb, and square.
- C. Prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. [Specifics Here](#).

3.3 INSTALLATION

- A. Install modular vaults complete with vault panels, vault doors and frames, accessories, supplemental structural supports, and installation materials required, and according to requirements in UL listings.
- B. Set modular vault panels and vault doors accurately in position, level, plumb, aligned, and braced securely until permanent anchors are set. After wall panel erection is complete, remove temporary braces and spreaders, leaving surfaces smooth and undamaged.
- C. Vault Panel Connection: [Specifics Here](#).
- D. Install modular vaults according to manufacturer's written instructions for clearance between exterior of vault panels and other construction.
- E. [Specifics Here](#) to finalize installation.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test and adjust components, assemblies, and equipment installations, including connections.
- B. Remove and replace modular vaults that do not pass inspections where inspections indicate that units do not comply with specified requirements.

3.5 ADJUSTING AND CLEANING

- A. Adjust vault door hardware and operating mechanism to function smoothly, and lubricate as recommended by manufacturer.
- B. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage, including dented and bent units.
- C. Other [Specifics Here](#).

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain modular vault doors.