

SECTION 11020

SECURITY VAULT DOOR
07/03

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by basic designation only.

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS AA-D-600D (Rev D) Door, Vault, Security

ITALIAN NATIONAL ASSOCIATION FOR UNIFICATION OF STANDARDS (UNI)

UNI EN 1143-1 (1997) Secure storage units -
Requirements, classification and methods
of test for resistance to burglary -Part
1: Safes, strongroom doors and strongrooms

UNI ENV 1300 (2001) Secure storage units -
Classification of high security locks
according to their resistance to
unauthorized opening

1.2 GENERAL REQUIREMENTS

The vault door unit shall be a steel security-vault type door with frame, [day gate], and ramp type threshold, and shall be a standard product of a manufacturer specializing in this type of fabrication. [Class 5 vault doors shall be provided in this contract and are not readily available locally and must be manufactured in the United States of America (USA). These vault doors shall be in compliance with FA AA-D-600D standards.]

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Class 5 vault door and frame; G

[Security vault door and frame; G]

[Day gate; G]

Show head, jamb, and sill sections, and elevations of the doors [and gate]. [Provide complete, exploded view drawings of the locking mechanism and lock mounting, with individual parts indexed.]

SD-03 Product Data

Class 5 Vault Door and Frame; [____], [____]

[Security vault door and frame; [____], [____]]

Manufacturer's catalog data including catalog cuts and brochures. The data shall show that the proposed vault door unit conforms with the requirements [in FS AA-D-600D, for Class 5 vault doors and has been tested and approved by the General Services Administration (GSA)] [as specified].

SD-07 Certificates

Class 5 Vault Door and Frame; [____], [____]

[Security vault door and frame; [____], [____]]

Certification shall state that vault-door units that do not bear the GSA label are constructed to [Class 5] [specified] standards.

SD-08 Manufacturer's Instructions

Installation

Printed instructions and drawings provided by the manufacturer.

SD-10 Operation and Maintenance Data

Class 5 vault door and frame, Data Package 2; G

[Security vault door and frame, Data Package 2; G]

1.4 QUALITY ASSURANCE

1.4.1 Replacement of Parts

Parts subject to replacement, such as combination lock and face hardware, shall be capable of identical replacement in the field without use of special tools or specially qualified personnel.

1.5 DELIVERY AND STORAGE

Door and frame assemblies shall be delivered to the jobsite in a protective covering with the brand and name clearly marked thereon. Materials delivered to the jobsite shall be inspected for damage, and unloaded with a

minimum of handling. Storage shall be in a dry location with adequate ventilation, free from dust, water, and other contaminants, and which permits easy access for inspection and handling. Door assemblies shall be stored off the floor on nonabsorptive strips or wood platforms. Damage to doors and frames shall be prevented during handling. Damaged items that cannot be restored to like-new condition shall be replaced.

PART 2 PRODUCTS

2.1 CLASS 5 VAULT DOOR AND FRAME

Design and construction of the door and frame assembly shall conform to FS AA-D-600D. The door shall be Class [5-V] [5-A] [5-B], Type [IR - right opening swing with optical device] [IL - left opening swing with optical device] [IIR - right opening swing without optical device] [IIL - left opening swing without optical device] [IIIR - double leaf, right opening swing active leaf] [IIIL - double leaf, left opening swing active leaf], Style [H - hand change combination lock] [K - key change combination lock], Design [S - single lock] [B - no exterior hardware]. [The optical device shall permit observation from the [inside to the outside] [outside to the inside] of the vault.]

[2.2 SECURITY VAULT DOOR AND FRAME

Provide vault door, Resistance Grade [II] [III] [IV] [V] [VI] [___] in accordance with UNI EN 1143-1. Provide [right opening swing with optical device] [left opening swing with optical device] [right opening swing without optical device] [left opening swing without optical device] [double leaf, right opening swing active leaf] [double leaf, left opening swing active leaf], key change combination lock, [single lock] [no exterior hardware]. [The optical device shall permit observation from the [inside to the outside] [outside to the inside] of the vault.]

2.2.1 Door Frame

Designed to afford the same security protection as that of the door, with built-in protection for extended locking bolts. Door frame shall be non-grout type, with wall clamping bolts exposed only on the inside of the vault. The frame shall have leveling and adjusting screws to compensate for future building sag.

2.2.2 Door Pull and Throw-bolt Handles

Stainless steel material with fine brushed finish, not less than 100 mm in length, securely and firmly attached to door to withstand loosening; removal of pulls and handles shall be only from inside the door. The throw-bolt handle shall require not more than 22 N torque to engage or disengage the bolt work mechanism, and the initial force required to swing the unlocked door from any position shall not exceed 44 N at the operating handle.

2.2.3 Door Stop

Provide manufacturers heavy duty door stop designed to prevent the door's

face hardware from striking wall surfaces, on either the floor or wall.

2.2.4 Door Strike

Provide striker on both the front and hinged edges of the door such that there is not more than 0.8 mm play or shake in the door when in the locked condition. The door lock shall have interlocking strikes to prevent jamming or spreading the door frame.

2.2.5 Door Hinges

Provide not less than 3 anti-friction bearing hinges, designed to allow door swing of 3.14 rad; removable from the outside.

2.2.6 Door Threshold

Ramp type of approximately 6 mm to permit free swing of the door after erection.

2.2.7 Back Cover Plate

Provide minimum 1.5 mm thickness to completely enclose back side of door, firmly and securely fastened to the door and reinforced to prevent sagging, bulging or distortion. The back cover plate shall be easily removable for service purposes by the use of common hand tools. The back plate shall have an opening covered by an inspection plate, large enough and positioned so as to allow maintenance of the door's combination lock and cam assembly.

2.2.8 Combination Lock

UNI ENV 1300, Class [A] [B] [C] [D], key changeable combination lock, designed to be readily combination changeable by use of a key and shall not require removal or disassembly of the lock. Changing procedure shall require the lock to have the bolt extended during changing and shall ensure the operator must know the current operating combination prior to changing the combination.

2.2.8.1 Bolt Lockout

The lock shall have a mechanical relock device that will block the bolt in the locked position if the lock cover plate is moved more than 2.5 mm.

2.2.8.2 Combinations

Lock combination shall be input by dialing; the combination for opening the lock shall not exceed 4 numbers; each number shall be within the range of 0 and 99. The lock shall have as a minimum, 1,000,000 operational combinations. Once the lock bolt has been extended to the locked position, it shall not be possible to reopen the lock without completely redialing the lock combination.

2.2.8.3 Lock and Lock Bolt Operation

The dial, spindle, bolt and all internal parts shall operate smoothly for

the operating life of the lock, without addition of any parts and without showing wear. All energy required for lock bolt operation shall be derived from mechanical operation of the lock dial by the operator. The torque required to retract the bolt shall not exceed 0.35 N/m.

2.2.8.4 Wheel Torque

Dynamic wheel pack torque for the lock shall be 11 to 14 N/cm to facilitate ease of dialing; design may provide for adjustment of the torque to remain in the specified range. The dial and rotating internal parts shall not be free wheeling.

2.2.8.5 Dial and Dial Rings

Lock dials shall be top or front reading design with suitable dial rings; and shall prevent casual observation of the combination during dialing. Provide a graduated dial numbered with distinct divisions to facilitate reading. Provide a dust cover to cover the dial and dial ring; when installed, the dial shall be available to grasp for rotation purposes. All other movable surfaces shall be shielded from touch.

2.2.8.6 Spindle

The lock shall be furnished with a spindle that can be cut to suit varying thicknesses of door and back plate not more than 90 mm in combined thickness. The spindle diameter shall not exceed 13 mm. Provide lock with a tube that fits over the spindle to provide protection over the spindle and internal component parts.

2.2.8.7 Case and Cover

Provide a case and cover surround for the lock, held in place with minimum of 2 screws.

2.2.8.8 Lock Bolt

Provide lock bolt with minimum cross section of 8 mm by 25 mm, with a minimum projection from the case of 11 mm in the locked position and flush to 1.6 mm in the unlocked position, and with not less than 8 mm throw.

2.2.8.9 Life Safety Feature

Lock shall be designed with a life safety feature in the form of a bolt hold back designed to hold the dead bolt in a non-locked position when the dead bolt is retracted. This feature must be able to prevent inadvertent or malicious engagement while the area being protected is occupied, and ensure a quick, safe exit in the case of an emergency.

- a. The bolt hold back feature shall use a conventional key cylinder and shall be furnished with 4 keys.
- b. The lock shall have a trip device that will, when the lock bolt is extended, automatically extend the dead bolt into the locked position upon release of the hold back feature and mechanism

engagement of the strike.

2.2.9 Locking Mechanism

Engaging bolts shall be of a design, size and material strength as required to meet the Resistance Grade specified. Bolts shall operate easily and smoothly, without binding or jamming; and shall not dent or otherwise deface the door frame in their movement. Attaching linkage may be channeled, strapped, or welded. Provide with a detent to lock bolts in the open position when the bolts are retracted and the door opened.

2.2.10 Escape Device

Provide door with an escape device on the inside face of the door to permit ready escape for persons locked inside the vault area. Device shall be operable only from the inside of the vault and shall not be activated from the outside. Provide a plaque or decal permanently affixed to the inside face of the door that provide clearly understood instructions for operating the escape device. Provide in both English and Italian languages.

2.2.11 Source Manufacturers

The following manufacturers provide security vault doors that generally comply with these specifications:

CONFORTI S.p.A.
Via A. Saffi, 2
37123 Verona
Tel. 045-8053811
Fax: 045-595429
www.conforti.it

FICHET S.p.A.
Via Curiel 14/16
20026 Novate Milanese (MI)
Tel. 02-38200887/5
Fax: 02-3567033
www.fichet-bauche.it

PIRETTA S.r.l.
Strada Valle Balbiana, 33
10025 Pino Torinese (TO)
Tel: 011-8111741
Fax: 011-8112684

][2.3 DAY GATE

The day gate shall be the manufacturer's [standard] [custom] product designed for use with the vault door furnished, and shall provide access control [and visual security] [and [material] [equipment] [weapons] issue].

The gate shall be hinged on the same side as the vault door, shall swing into the vault, and shall have a locking device operable from outside by key and from inside by knob or handle. [Gate shall include an issue port hatch [and [2.5] [_____] mm thick steel shelf]. The issue port shall be a

framed 200 by 300 mm opening with a minimum [0.8] [_____] mm thick steel protective door (hatch cover) which is hinged and lockable from the interior side. The issue port frame shall be welded to the day gate. [The shelf shall be [300] [_____] mm deep by width to match the port hatch.]] Provide the manufacturer's standard finish. The day gate shall not interfere with the operation of vault door inner escape device.

] [2.4 FABRICATION

Except for the hinges, the door shall be assembled in such a manner as to preclude the removal or loosening of any of the door's components when the door is closed and locked. All welding and brazing shall be sound, without porosity and shall accomplish secure and rigid joints in proper alignment. All protruding or depressed welds on the door's exterior surfaces shall be filled and sanded or ground smooth. Moving parts shall operate smoothly without binding or jamming. The door assembly shall be free of any defects or features that may adversely affect its appearance and serviceability or that may cause personal injury.

2.4.1 Finish

For all exterior and interior metal surfaces, except plated metal and stainless steel, provide manufacturer's baked enamel finish or similar finished coating, not less than 0.025 mm thickness, gray color.

2.4.2 Labels

Provide [each] door with metal labels as follows:

2.4.2.1 Identification Label

Show the door model and serial number, date of manufacture, and Government contract number. Affix to inside face of door frame.

2.4.2.2 Certification Label

Identify testing and approvals for the Resistance Grade provide by the door. Affix to inside face of door frame.

2.4.2.3 Number Label

Provide a number label securely affixed to the front face with a durable adhesive or drive screws; label numbers shall be established by the manufacturer to provide non-repetitive numbers. Mount label on the door frame, above or to the left side of the door.

- a. Label: 0.5 mm thick satin finish aluminum, 17.5 mm by 63.5 mm.
- b. Label Numbers: 4.8 mm high, embossed.

] PART 3 EXECUTION

3.1 INSTALLATION

The vault door assembly shall be installed in strict compliance with the printed instructions and drawings provided by the manufacturer. [The day gate shall be installed in a manner that will not interfere with operation of the release handle on the inside of the vault door.] After installation, the door, the locking mechanism, and the inner escape device shall be adjusted for proper operation.

-- End of Section --