

[INCH-POUND]
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SUPERSEDING
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FEDERAL SPECIFICATION

CABINET, SECURITY, INFORMATION PROCESSING SYSTEM STORAGE, CLASS 5

The General Services Administration has authorized the use of this federal specification by all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers uninsulated security cabinets which are designed to conform to the standards for physical security as set forth in the Information Security Oversight Office Directive No. 1, governing the classification, declassification, downgrading and safeguarding of national security information. The cabinets provide protection against unauthorized entry for the period of time specified in 1.2.1.

1.1.1 Limited use. Cabinets tested and qualified under this specification are to be sold only to the Federal Government, Government contractors specifically authorized to purchase these cabinets or other organizations specifically authorized or required by the Government to use the cabinets.

1.1.2 Naming convention. The products submitted under this specification and all their variations shall have an alphanumeric naming convention that does not include any references to US Government policy documents, Federal Specifications or Federal Standards. The names and/or model numbers of the products being submitted shall be unique to the manufacturer and declared upon submission for approval.

1.1.3 Intended use. The cabinets under this specification are intended for the protection of computing and communication devices for on-line operation of classified systems, including the safeguarding of electronic media and communication devices. The cabinet shall not be used for the storage of hard copy classified materials (see para 6.1).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: General Services Administration, Federal Acquisition Service, Supply Chain Management (QSD), Plan, Policy, and Program Integration (P3I) Division, Washington, DC 20406.

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1.2 Classification.

1.2.1 Class. The cabinets furnished under this specification shall be of the following class, and size, as specified (see 6.2).

Class 5 - Resistant to 20 man-hours surreptitious entry, 30 man-minutes covert entry, and 10 man-minutes forced entry.

1.2.2 Size. The cabinets shall be of the following standard sizes as specified (see 3.3.3 & 3.3.3.1)

Size I - 19" rack mount, 13u equipment capacity
Size II - 19" rack mount, 26u equipment capacity
Size III - 23" rack mount, 13u equipment capacity
Size IV - 23" rack mount, 26u equipment capacity

1.2.3 Design of combination lock. The combination locks on cabinets furnished under this specification shall meet the requirements of FF-L-2740.

2. APPLICABLE DOCUMENTS

2.1 Specifications and standards. The following specifications and standards of the issues in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Specifications:

TT-C-490 – Cleaning Methods and Pretreatment of Ferrous Surfaces for Organic Coatings.
FF-L-2740 – Locks, Combination
PPP-B-585 – Boxes, Wood, Wire bound
PPP-B-1055 – Barrier Material, Waterproof, Flexible

Federal Standards:

FED-STD-123- Marking for Domestic Shipment (Civilian Agencies).

(Activities outside the Federal Government may obtain copies of federal specification, standards, and commercial item descriptions as specified in the General Information section of the Index of Federal Specifications, Standards and Commercial Item Descriptions from the General Services Administration, Federal Supply Service, Specification Section, East 470 L'Enfant Plaza SW, Suite 8100, Washington, DC 20407.)
(Single copies of this specification and other federal specifications required by activities

outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle.

(Federal government activities may obtain copies of federal standardization documents, Handbooks and the Index of Federal Specification, Standards and Commercial Item Descriptions from the established distribution points in their agencies.)

Military Specifications and Military Standards:

MIL-L-10547 - Liners, Case and Sheet, Overwrap, Water-Vapor proof, or Waterproof, Flexible.

MIL-STD-129 - Marking for Shipment and Storage.

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications. The following document forms a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Quality (ASQ):

ASQ Z1.4 - Sampling Procedures and Tables for Inspection by Attributes

(Private sector and civil agencies may purchase copies of this voluntary standard from the American Society for Quality, P. O. Box 3005, Milwaukee, WI 53201-3005.)

American Society for Testing and Materials (ASTM):

ASTM A 6/A 6M - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes and Sheet Piling

ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.

ASTM D5168 – Standard Practice for Fabrication and Closure of Triple-Wall Corrugated fiberboard Cabinets.

ASTM D5486/D5486M– Standard Specification for Pressure-Sensitive Tape for Packaging, Box Closure, and Sealing.

ASTM D6251/D6251M – Standard Specification for Wood-Cleated Panelboard Shipping Boxes.

ASTM D6880- Standard Specification for Wood Boxes.

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(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428- 2959)

Electronic Component Industry Association (EIA)

EIA 310-D - Enclosure Specification

Application for copies should be addressed to the Electronic Component Industry Association, 310 Maxwell Road, Suite 200, Alpharetta, GA 30009

Society of Automotive Engineers (SAE):

SAE AMS2460 – Plating, Chromium
SAE-AMS-QQ-P-416 - Plating, Cadmium (Electrodeposited).
SAE-AMS-STD-595 – Color Standard

Application for copies should be addressed to the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001

National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Association, Inc., Traffic Department, 1616 P Street, NW, Washington, DC 20036)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

3. REQUIREMENTS

3.1 Qualification. The security cabinets furnished under this specification shall be products which have been tested and have passed the qualification tests specified in section 4 and have been listed on or approved for listing on the applicable qualified products list (QPL).

3.1.1 Qualification suspension.

3.1.1.1 Development of entry techniques. The cabinets qualified under this specification will be continually tested by the Government during the term of qualification to determine whether the security protection afforded by the cabinets should or can be improved.

If, at any time, entry techniques are developed within the framework of the specification which affect a cabinet's security integrity, it shall be removed from the QPL and the manufacturer will be required to modify the product to the extent necessary to defeat the techniques and have the cabinet re-qualified.

3.1.1.2 Change in specification requirements. This specification will be continually reviewed by the Government to determine whether specification requirements should or can be changed to improve product quality. If, at any time, requirements are changed, and such changes affect the qualification status of a qualified cabinet, it shall be removed from the QPL and the manufacturer will be required to modify the product to the extent necessary to comply with specification changes and have the cabinet re-qualified.

3.2 Material. Material used in the cabinet's construction shall be as specified herein. Material not definitely specified shall be of good commercial quality, suitable in all respects for the purpose intended.

3.2.1 Steel. Steel used in the cabinet shall be of a type, thickness, and strength to meet all applicable requirements of this specification. Steel shall be free from rust, scale, pits, buckles, and other imperfections which might adversely affect the appearance or the serviceability of the finished product.

3.2.2 Face hardware. Material used in the cabinet door handle and lock bolt operating handle shall be satin-finished anodized aluminum, type 430 corrosion resistant steel, brushed chromium on steel, or on die-cast zinc, brass or bronze, or electrolysis nickel coating. Chromium plating shall be as specified in 3.2.3.2.

3.2.3 Finishing materials.

3.2.3.1 Enamel and lacquer. The final coat for the cabinet shall be powder coat, epoxy, acrylic, lacquer or urethane and applied to a thickness of 3.0 mil. The color shall be as specified in 3.2.4.

3.2.3.2 Chromium plating. Chromium plating shall be class I, type II, of SAE-AMS-QQ-C-320.

3.2.3.3 Cadmium plating. Cadmium plating shall be in accordance with class I, type I, of SAE-AMS-QQ-P-416.

3.2.3.4 Zinc coating. Zinc coating shall be in accordance with type I, class 2, of ASTM B 633.

3.2.4 Color of finish. The color of the finish shall be as specified (see 6.2) from the following colors as identified in SAE-AMS-STD-595:

Gray Color - No. 26134
Black Color - No. 27040

Parchment - Color No. 27769

(Fan decks and color chipsets, may be obtained from:
SAE International Customer Service, 400 Commonwealth Drive, Warrendale PA 15096
www.sae.org, CustomerService@sae.org

3.3 Construction.

3.3.1 Design. The design and general appearance of the cabinet shall be consistent with the intended use. Cabinets shall be vertical (upright) with a single or double, hinged door(s).

3.3.1.1 Unspecified design features. The Government reserves the right to reject any manufacturers design feature that is not required by the specification which could cause unanticipated operational, procedural or life safety problems with the intended use (per Para 1.1.3) of the product.

3.3.2 Assembly. The top, sides, back, bottom, and case frame members shall be assembled into a rigid unit. All welding, brazing, and mechanical attachments shall accomplish secure and rigid joints in proper alignment. Welding and brazing shall be sound without porosity. All protruding and depressed welds on the cabinet's exterior shall be filled and sanded or ground smooth.

3.3.3 Standard sizes. The sizes of the cabinets shall be determined by the Electronic Industries Association Standards (EIA-310-D) for 19 and 23-inch rack mounting of information processing equipment as listed in Table I. All cabinets shall have at least one dimension of 30 inches or less (see figures 3 & 4).

Table I Cabinet Sizes and Weights

Cabinet Size	Dimensions (+/- 4")	Rack Unit Size	Weight (+/- 400 lbs.)	Fan Ventilation (CFM per fan) Minimum
I	30 x 22 x 42	19" - 13u	1000 lbs.	105 CFM
II	52 x 22 x 42	19" - 26u	1400 lbs.	230 CFM
III	30 x 28 x 42	23" - 13u	1200 lbs.	230 CFM
IV	52 x 28 x 42	23" - 26u	1600 lbs.	400 CFM

3.3.3.1 Unique sizes. Cabinets of non-standard size that are required for unique situations can be submitted for testing and approval on a case-by-case basis.

3.3.4 Weight. The net weight of the cabinet shall not exceed 250 lbs. per square foot of the cabinet base. The weight shall be permanently marked on the cabinet base clearly visible from the front (per 3.11.6). The full weight of the cabinet and its contents shall be distributed evenly across the entire base of the cabinet. The cabinet's base and top area shall be of the same dimensions.

3.3.5 Mounting. If the cabinet weighs less than 250 lbs., or it is requested by a customer (for seismic conditions), there shall be provisions for securely mounting the cabinet to the floor surface. The mounting holes must be secured with a plate that can only be removed with the cabinet door open (see figure 5).

3.3.6 Door(s). The cabinet shall have a hinged door(s) which shall swing outward to the open position. The door(s) shall be in alignment and move easily and smoothly on the hinges. The door(s) in any open position shall not overbalance the empty cabinet. The cabinet door(s) shall be tested as specified in paragraph 4.4.9.1. The door should open to allow complete access of the entire opening. The standard size cabinets (Table I) will have a single door and shall be designed to be field replaceable with standard tools.

3.3.6.1 Door handle. The door shall have a handle to provide easy and convenient operation to open and close the door. The handle may be integral with the throw-bolt mechanism. The handle shall be of any of the materials specified in 3.2.2, and of sufficient strength to withstand hard usage. Exterior surfaces shall be finished by a method to eliminate roughness and sharp edges. The handles shall be securely and firmly staked to the door in a manner to withstand hard daily usage and shall withstand the test in 4.4.9.5. The door handle shall extend past the lock dial to protect the lock from damage.

3.3.6.2 Door switch. Monitoring of the door position shall be accomplished only by a heavy-duty mechanical switch mounted on the interior of the cabinet. Door position switches connected to an alarm system shall be in accordance with UL 634 and 2050 standards.

3.3.7 Racks. All standard size cabinets shall be equipped with a removeable rack system that facilitates the installation and interconnection of equipment from the front of the cabinet.

3.4 Lock and locking mechanism. The cabinet shall be locked by a positive bolt mechanism, which incorporates a detent feature to hold the lock bolts in a retracted position when the door is open. A changeable combination lock shall be mounted in the door to control the locking of the entire cabinet. The lock shall be tested as an integral component of the cabinet. The lock shall meet the requirements of Federal Specification FF-L-2740.

3.4.1 Combination lock installation. The lock's dial ring shall be mounted so as to be flush to the front surface of the door front. The attachment of the dial ring to the door shall be firm and secure so that there is no movement or side play. The lock case shall be securely attached to the door with screws which shall be retained by lock washers or other suitable and effective means so that there is no movement or side play. The lock shall not be changed or altered in any manner from the formation supplied by the lock manufacturer. No lubricant other than that supplied by the lock manufacturer shall be used with the lock case.

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3.4.2 Lock and lock mounting drawings. Upon the specific written request of the purchaser, the manufacturer of the cabinet shall supply complete and exploded view drawings of the cabinet's locking mechanism and lock mounting, with individual parts indexed.

3.4.3 Lock box. The door of an IPS cabinet shall have a six-sided lock box welded to the front plate of the door face constructed in such a way that it provides for the protection of the combination lock and its interface with the door bolt work as specified in paragraph 3.4. The IPS cabinet door and lock box shall be designed such that the surface of the lock mounting plate is a minimum of 1" from the lock dial ring mounting surface.

3.4.3.1 Internal dimensions. The lock box shall have minimal internal dimensions of 2-1/2" x 5" x 1-1/2" to accommodate the combination lock, lock bolt and security cabinet door bolt work.

3.4.3.2 Material. The lock box shall be constructed of a minimum of 5/16" AR 500 hardened steel on the front, sides, top and bottom of the lockbox and shall be constructed with a material that will pass the covert entry tests of 4.4.9.3.

3.4.3.3 Lock mounting plate. A 1/4" thick combination lock mounting plate drilled and tapped for four (4) 1/4-20 mounting holes (through the plate as in figure 1) and with a 3/8" spindle hole for the combination lock shall be welded to the inside of the lock box. The lock mounting surface of the lock mounting plate shall have a flatness tolerance of 0.003 inch per inch.

3.4.3.4 Lock box removable plates. To allow access to the combination lock for installation and maintenance purposes, a removable 1/4" hardened steel plate configured to slide into a captured slot of the lock box shall be provided, such that a punching force through the spindle hole cannot drive the plate from the lock box. In addition, a second steel filler plate shall be provided if required to fill any void space between the back of the combination lock and the 1/4" steel plate.

3.4.3.5 Combination lock bolt engagement. The lock box shall be configured such that when the security cabinet is secure, the center of door bolts shall engage the combination lock bolt extension with a minimum area of 0.06 Sq. In (5/16" X 3/16).

2.5 Combination lock monitoring. Remote monitoring of a locked GSA Approved electromechanical combination lock (FF-L-2740) mounted on GSA Approved information processing system cabinet shall be accomplished in such a manner as to not adversely affect the operational performance or the security of the combination lock. The lock manufacturer must certify that any proposed modification or interconnection to any portion of the combination lock will not adversely affect the operation or the security of the lock. The General Services Administration must also test the configuration to ensure the integrity of the lock box has not been adversely affected by any proposed lock monitoring configurations.

3.5.1 Style I electromechanical combination locks. (FF-L-2740). The external monitoring of the lock bolt position is the only approved remote monitoring of a GSA Approved Style I electromechanical combination lock in the locked condition.

3.5.2 Style II electromechanical combination locks. (FF-L-2740). The external monitoring of the lock bolt position is permitted. All other connections to a Style II lock shall be accomplished by the lock manufacturer subject to Federal Specification FF-L-2740 and be submitted to GSA for appropriate testing. Any modifications to the cabinet or door to facilitate the lock monitoring (holes etc.) must also be submitted for security testing and approval by GSA.

3.6 Cabinet cooling. The cabinets shall contain a fan assisted cooling system capable of removing heat generated by the installed information processing equipment. The cooling equipment shall occupy the minimum space practicable inside the cabinet while maintaining the appropriate temperature as required by the expected information processing equipment. The cooling system shall distribute air evenly throughout the cabinet to eliminate any buildup of heat pockets within the cabinet and to ensure proper airflow distribution to each piece of processing equipment as required.

3.6.1 Fan assisted cooling. The standard size cabinets shall contain a minimum of 2 fans that are dual voltage capable (110/220 VAC) and generate a cubic foot per minute (CFM) according to table I.

3.6.2 Ventilation design. The placement of intake and ventilation ports shall be designed to draw room air into the cabinet, across the equipment and then blow the now warm air back into the room. The cooling system shall distribute air evenly throughout the container to eliminate any buildup of heat in pockets within the container and to insure proper air flow distribution.

3.6.3 Air filtration. The ventilation and cooling system shall be designed to accommodate readily available, standard size, replaceable or washable air filters.

3.7 Power and data openings. The cabinet shall contain separate secured cable openings for data and power cables on the rear of the cabinet with a separation of at least 12 inches. The cable opening shall be large enough for 24 (CAT 5) ethernet cables and 8 power cables (24 each 12 AWG wires). The design and construction of the opening shall provide the specified Class 5 protection level and provide the appropriate strain relief without sharp edges. (see Figures 2 & 6). A second secured cable opening may be provided to allow the user to separate red data cables from black data cables.

3.7.1 Separate power opening. The cabinet shall provide a separate, secured opening for power lines. The opening shall have a maximum diameter of one inch with an appropriate sleeve to prevent abrasion of the power lines. The design and construction of the secured power line opening shall provide the specified Class protection level and required grounding (see Figures 2 & 6).

3.7.2 Junction box attachment. The cabinet shall have blind threaded holes to allow the attachment of junction boxes to the rear of the cabinet. A junction box shall be positioned over each of the data and power entry ports allowing unrestricted entry of cables into the security cabinet. The threaded holes shall be a minimum of 3/8 inch deep and shall be backed by steel plates to protect against using the holes to gain entry into the cabinet. If threaded holes for junction box mounting are provided, they shall be located as shown in Figure 1.

3.7.3 Earth ground. All cabinets shall have an earth ground termination assembly installed on the interior and exterior of the cabinet. A steel or brass grounding lug at least 1/2" in diameter shall be installed through the cabinet body as a single assembly and welded in place. The threaded assemblies shall be free of any paint or other coating to ensure electrical continuity to an external earth ground source.

3.8 Pretreatment and finishing.

3.8.1 Pretreatment. All exterior and interior ferrous metal surfaces of the cabinet shall be treated for painting in accordance with any of the types in TT-C-490.

3.8.2 Finishing. The final coat shall be applied to all exterior and interior metal surfaces except plated metal. The exterior coating shall be textured. The texture shall be designed to make it difficult to disguise covert entry attempts. The minimum total finished film thickness of the final coat shall be not less than 3.0 mil. The final coat shall level out to produce uniform exposed surfaces without runs, grit or other foreign matter, areas of thin film or no film, and without separation of color. Special attention shall be given to the base and interiors to ensure that all surfaces are adequately protected against rust. The final finish shall withstand the test in 4.4.9.6 without evidence of cracking, flaking, or loss of adhesion of the finish. Two test panels of 0.0359-inch steel in 3 by 5-inch size shall be furnished for purposes of the test. One panel shall be prepared to reflect the inner coating and one to reflect the outer coating used.

3.8.3 Bolts, screws, and nuts. Bolts, screws, nuts, and similar hardware shall be made to resist rust by electro-galvanizing or by zinc coating, cadmium, or chromium plating as specified in 3.2.3, or shall be made of stainless steel.

3.9 Lubrication. All of the cabinet's moving parts requiring lubrication shall have a lubricant applied which is suitable to the varied climatic conditions likely to be encountered during the service of the cabinet.

3.10 Surreptitious, covert, and forced entry. Cabinets shall be tested as specified in 4.4.9.3 with the surreptitious, covert, and forced entry protection afforded by the cabinets not less than the periods of time specified hereunder.

Class 5 - 20 man-hours against surreptitious entry, 30 man-minutes against covert entry and 10 man-minutes against forced entry.

3.11 Labels. Each cabinet furnished under a contract or order under this specification shall bear metallic labels showing the information specified hereunder. Labels shall be attached with a durable adhesive sufficient to preclude removing the label without destroying the label. Regardless of the method used, the attachment shall not degrade the cabinet security.

3.11.1 General Services Administration label. This label shall be affixed to the outside surface of the door. The label shall have a silver background and blue letters not less than 1/8 inch in height. The label shall show the following:

GENERAL SERVICES ADMINISTRATION
APPROVED IPS SECURITY CABINET
(Not for the storage of non-digital data)
MANUFACTURER'S NAME OR LOGO

3.11.2 Identification label. This label or labels shall be affixed to the inside face of the door. The label shall show, in easily read letters, the manufacturer's name and address, the cabinet's model and serial numbers, date of manufacture, and the Government contract number or purchase order (if applicable).

3.11.3 Certification label. This label shall be affixed on the inside face of the door and shall be clearly visible when the door is open.

The label shall show the following in easily read letters not less than 1/8 inch in height:

“This is a U.S. Government Class 5 security cabinet, which has been tested and approved by the Government under Fed. Spec. AA-C-2786A. It affords the following security protection:

20 man-hours against surreptitious entry.

30 man-minutes against covert entry.

10 man-minutes against forced entry.”

3.11.4 Number label. This label shall be securely affixed to the front face of the product, mounted on the cabinet frame above or to the left side of the top drawer. The label shall be nominal 0.020-inch-thick, satin finished aluminum and shall be 2 1/2 by 3/8 inches. The label numbering system shall be established by the manufacturer to provide non-repetitive numbers. The label characters (numbers or letters) shall be minimum 3/16 inches in height and shall be embossed.

3.11.5 Warning label. This label shall be affixed to the inside face of the door so as to be clearly visible when the door is open. The label shall show, in red lettering not less than 1/8 inch in

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height, the following:

Notice: Any modification of this cabinet not in accordance with FED-STD-809 will invalidate the GSA approval and the GSA approval label shall be removed.

3.11.6 Weight Label. The label shall be securely affixed to the cabinet base area so as to be clearly visible from the front. The label shall show, in black lettering not less than ½ inch in height the following information.

The total weight of the assembled cabinet (lbs.) including the weight distribution plate included in style A cabinets, and pounds per square inch (psi.) of the cabinet base area.

If the cabinet weighs less than 250 lbs., a separate label shall be required stating that the cabinet must be securely mounted by the provided attachment method in order to maintain GSA approval.

3.12 Workmanship. The workmanship shall be of a quality to produce a serviceable and well finished end item able to withstand hard daily usage. The edges of all exposed parts shall be protected by folding, beading, flanging, or grinding to eliminate burrs, roughness, and sharp edges. The bending of channels and flanges shall be straight and smooth. Welding and brazing shall produce rigid and secure connections. Lock washers, cotter pins, clips, retainers, or built-in features shall be used to prevent loosening of screws, bolts, and nuts, which may cause disengagement of parts and possible lockout. Care shall be taken to ensure that face hardware including door handles and combination locks are securely and firmly mounted on the cabinet by methods to prevent their loosening in operation. The cabinet door and locking mechanism shall operate smoothly without binding or jamming of parts. To assure compliance with the requirements for lock installation, particular attention shall be given to the quality of workmanship and the method used in installation of the lock in the cabinet door. The cabinet shall be free of any defect or feature which may affect its appearance and serviceability, or which may cause personal injury.

3.13 Replacement of component parts. Component parts, such as suspensions, racks, combination locks, and external face hardware shall be capable of identical replacement in the field without the use of specialized tools or specially qualified personnel and without weakening the security protection of the cabinet.

3.14 Assembly drawing and parts list. A parts list of all cabinet parts which may be subject to subsequent replacement because of wear or damage shall be furnished with each cabinet delivered under contract. The parts list shall clearly identify the parts by description, location and part number. When necessary, assembly drawings shall be provided to show the location of the parts. The parts list shall be printed on heavy paper or other suitable material and bonded by glue or adhesive to an inside surface of the cabinet in a location accessible to maintenance

personnel.

4 QUALITY ASSURANCE PROVISIONS

4.1 Manufacturer. The supplier is responsible for the performance of all inspection requirements as specified herein. The supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. Inspection records of the examination and tests with itemized results shall be kept complete at the manufacturer's facility, available to the Government throughout the duration of the contract, or a minimum of two years, whichever is longer. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure 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 inspections set forth in this specification shall become a part of the supplier's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the manufacturer of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the specification. Sampling in quality conformance does not authorize the submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.1.2 Component and material inspection. In accordance with 4.1, the supplier is responsible for ensuring that components and materials are manufactured, tested, and inspected in accordance with the requirements of referenced specifications and standards to the extent specified or, if none, in accordance with this specification.

4.2 Qualification testing and inspection. Qualification testing and inspection shall consist of the tests and inspections shown in Table 1. Failure of any cabinet to meet any one or more of these requirements shall provide reason to consider the product as having failed to meet the requirement for qualification.

Table I Classification of preparation for delivery defects

Examine	Defects
Markings (exterior)	Omitted; incorrect; illegible; improper size, location, sequence or method of application.
Materials	Any component missing or damaged.
Workmanship	Inadequate application of components such as incomplete closure of cabinet flaps or shroud.

4.3 Inspection for acceptance. The Government reserves the right to inspect and test each cabinet, including all component parts thereof, delivered for acceptance under this specification. Cabinets delivered for acceptance shall be inspected as specified in 4.3.1. Any nonconformance

shall provide reason to reject the product.

Rejected cabinets may be reworked to correct nonconformance and they may be resubmitted for acceptance. Reworked cabinets shall be so indicated. The testing agency may elect to perform the product inspection at the manufacturers facility to enhance the cost effectiveness and timely testing of the submission.

4.3.1 Inspection. A visual inspection shall be made of the product to determine compliance with the requirements specified in the following paragraphs:

- 3.2 Material
- 3.3.2 Assembly
- 3.3.3 Sizes
- 3.3.4 Weight
- 3.3.6 Door(s), including field replaceable design, construction, lock box, face hardware, stops and latching mechanism
- 3.3.7 Removable rack system
- 3.4 Lock and locking mechanism
- 3.5 Lock monitoring
- 3.6 Cabinet cooling
- 3.7 Power and data openings
- 3.8 Pretreatment and finish
- 3.9 lubrication
- 3.11 Cabinet labels
- 3.12 Workmanship

4.3.2 Quality assurance testing. Periodically, during the term of the contract, the Government inspector, at a time convenient to the Government, will select samples of the manufacturer's regular production and subject them to the tests in 4.4.9. This quality assurance testing shall be performed by a Government agency specifically designated by the General Services Administration. Failure of the cabinet to meet any one or more of these tests shall provide reason to suspend acceptance of the manufacturer's product until the Government is satisfied that all defects have been corrected.

4.3.3 Quality conformance inspection. The quality conformance inspection shall include the examinations specified in 4.3.1, and preparation for delivery inspections specified in 4.2.

4.4 Testing procedures and tests.

4.4.1 Testing agency. Qualification tests accomplished on cabinets submitted for approval for inclusion on the applicable Qualified Products List (QPL) and any retesting that may be required shall be performed by a testing agency specifically designated by the General Services Administration.

4.4.2 Test costs. All testing costs entailed in determining the qualification of the supplier's product, changes submitted after product approval and costs of retesting of a qualified product if subsequently disqualified under 3.1.1, shall be borne by the supplier, and shall be payable to the US Treasury and sent to the General Services Administration authorized Test Facility as authorized in the Pre-Submission Plan (PSP).

4.4.3 Test procedures. The following procedures shall govern the testing of all cabinets submitted for qualification under this specification:

- (a) Samples shall be submitted for qualification only after the supplier has obtained written authorization from the General Services Administration.
- (b) A qualification test may be discontinued at the Government's testing facility at any time the product fails to meet any one or more of the requirements set forth in this specification. The manufacturer may be permitted to make modifications on the sample during the testing phase where such modifications, in the judgment of the General Services Administration and the testing facility, are clearly in the interest of the Government.
- (c) In case of failure of the sample, consideration will be given to the request of the manufacturer for resubmission for retest only after it has been clearly shown that changes have been made in the product which the Government considers sufficient to warrant retest.
- (d) The manufacturer or his representative will not be permitted to observe the actual tamper resistance tests conducted on his product at the testing facility. However, when samples tested fail to comply with the requirements of this specification, the sample may be examined by the manufacturer or his representatives and full details of the failure may be made known to them in a manner which, for reasons of security, will be in the best interest of the Government.

4.4.4 Test samples. Two qualification test samples shall be forwarded at a time and to a place designated by the General Services Administration. In the event the samples are destroyed or damaged to such an extent during testing that testing cannot be completed, the Government reserves the right to require the manufacturer to furnish additional samples to complete the testing. Samples delivered to the test facility shall have a tag attached which shall reference this specification and identify the sample by class, style, and size.

4.4.5 Drawings and material specifications. The manufacturer shall furnish two complete sets of construction and assembly drawings and material specifications with the sample submitted for qualification. When samples have been tested and the product is approved for inclusion on the applicable QPL, the manufacturer shall furnish three complete hard copy and one electronic copy in DWG or DXF format (on a non-rewritable media) of the assembly and construction drawings and material specifications lists to the General Services Administration for the Government's use in inspection and acceptance of the product after award of contract. All material so furnished by

the manufacturer will be held in proprietary confidence.

4.4.6 Changes in construction or construction drawings. No changes shall be made in the construction or construction drawings of the cabinet after it has become qualified and is furnished under contract or order unless prior written authorization to make changes is obtained from the GSA contracting officer. Upon written authorization, the manufacturer shall furnish three complete sets of hard copy drawings and one electronic copy in DWG or DXF format of the changes to the General Services Administration.

4.4.7 Qualification testing. Qualification testing shall consist of the following tests described under test methods in 4.4.9. Failure of the sample to withstand one or more of these tests shall provide reason to consider the product as having failed to meet qualification requirements.

- (a) Door tests – 4.4.9.1
- (b) Drop test – 4.4.9.2
- (c) Surreptitious, covert, and forced entry tests 4.4.9.3.
- (d) Service test – 4.4.9.4
- (e) Finish test – 4.4.9.5
- (f) Inspection – 4.4.9.6

4.4.8 Acceptance after award of contract. The Government reserves the right to inspect and test each cabinet, including all component parts thereof, delivered for acceptance under this specification after award of contract.

4.4.9 Test methods.

4.4.9.1 Door tests. For the purpose of these tests the cabinet shall be empty and shall not be anchored to the floor. In the first test the cabinet door shall be opened 90 degrees from its closed position and 150 pounds of weight shall be loaded on the top edge of the door opposite and furthest from the hinged side. The cabinet shall be allowed to remain in this condition for approximately 24 hours. The cabinet shall then be examined. It shall have failed the test if the weighted door has caused the cabinet to tip over or if the door fails to operate easily and smoothly. In the second door test the original cabinet door shall be removed and a replacement door (supplied by the manufacturer) shall be installed using readily available tools without any modification to the replacement door.

4.4.9.2 Drop tests. All sample cabinets shall be subjected to the tests specified in 4.4.9.2.1 and 4.4.9.2.2. Cabinets shall be loaded with weight to simulate 150 pounds of stored material. Cabinets shall then be locked and drop tested as specified. Style A cabinets shall be tested with pedestal base assembly attached.

4.4.9.2.1 Thirty-six-inch test. The cabinet shall be raised until its base is 36 inches above the floor surface. It shall then be allowed to free fall, onto a hard, level surface.

Any resulting lockout requiring destructive force to reduce shall provide reason to consider the cabinet as having failed to withstand the test.

4.4.9.2.2 Thirty-foot test. The cabinet shall be raised until its base is 30 feet above the floor surface. It shall then be allowed to free fall, base down, onto a hard, level surface. Any damage which results in the releasing or making accessible without further force, any part of the stored material shall provide reason to consider the cabinet as having failed to withstand the test.

4.4.9.3 Surreptitious, covert and forced entry tests. There shall be sufficient time and opportunity to study the design and construction of the cabinet and to develop testing methods prior to the start of testing. There shall be no limit to the number of methods of surreptitious, covert and forced entry attempted. Not more than two men shall be used simultaneously during each attempt at entry. The man-minute working time shall cover the period during which a surreptitious, covert, or forced entry test on the cabinet is in progress and shall be exclusive of time required for safety precautions and rest periods.

4.4.9.3.1 Tool size and weight limits. The tools and devices shall be capable of being carried in two cases or bags, each case or bag not exceeding 1.5 cubic feet in volume. The total weight of the tools used in a single test shall not exceed 150 pounds, exclusive of the weight of the case. The test tools and devices selected for a particular attempt shall be weighed prior to commencement of the test.

4.4.9.3.1.1 Surreptitious entry tools and devices. Tools and devices used in the surreptitious entry tests are unlimited.

4.4.9.3.1.2 Covert entry tools and devices. Tools and devices used in the covert entry tests shall be limited as specified below. Power tools, electrically or battery powered shall be commercially available equipment, and shall be limited to drills not exceeding 5000 rpm. Pressure rigs may be used, with a lever arm not exceeding 30 inches. Tools may be reasonably modified, (e.g. special chucks on drills, ground or shaped chisels or pry bars, etc.). Electrical tools shall be able to operate on electricity available in normal office space. Devices for the application of heat shall be limited to single tank propane, butane, or equivalent devices which fall within the weight and dimension limits specified above. Acetylene, MAPP, or equivalent shall not be used. Electronic arc or any form of burn bars, oxidizer assisted products or explosives shall not be used.

4.4.9.3.1.3 Forced entry tools and devices. The tools and devices used for forced entry tests shall be limited to non-powered tools only.

4.4.9.3.2 Timing. The time clock shall be started when the test equipment is picked up to approach the sample and shall not be stopped during the test except as specified above. Any change or repair of tools taken from the carrying case during a test shall only be done while the clock is running. The tests must be conducted in a manner that is repeatable.

Any surreptitious, covert, or forced entry into the cabinet under the above conditions, within the time specified for the cabinet's class, shall provide reason to consider the cabinet as having failed to meet the requirement.

4.4.9.4 Service Test. The cabinet shall undergo 10,000 opening and closing cycles. One cycle shall consist of turning the handle to retract the locking mechanism, pulling the door open ninety degrees, closing the door, and extending the locking mechanism via the bolt hold-open detent or handle assembly. After the completion of the specified number of cycles, the cabinet shall not show any damage or wear that affects the serviceability of the cabinet.

4.4.9.5 Finish test. The steel panels prepared in accordance 3.8.2 shall be bent around a ¼ inch rod to an angle of 180 degrees. The panels shall then be examined for compliance with 3.8.2.

4.4.9.6 Inspection. The cabinet shall be inspected for compliance with requirements of this specification for dimensions, weight, color and finish, and workmanship.

5 PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B, or C, as specified (see 6.2).

5.1.1 Level A and B. Cabinets shall be protected from marring or surface abrasion by cushioning with fiberboard pads, cellulose wadding or comparable fiberboard pads of sufficient width and thickness to afford maximum protection against stresses of shipment and storage. The fiberboard pads and cushioning material shall be secured in place with tape conforming to ASTM D5486, class 3.

5.1.2 Level C. Cabinets shall be cushioned and protected in accordance with the manufacturer's commercial practice.

5.2 Packing. Packing shall be level A, B, or C, as specified (see 6.2).

5.2.1 Level A.

5.2.1.1 Cabinets weighing 1,000 pounds or less. Each cabinet, cushioned as specified in 5.1.1, shall be packed in a box conforming to ASTM D6880-05, class 2; PPP-B-585, class 3; ASTM D 6251, overseas; or to ASTM D5168, class 2, grade A respectively. Each shipping cabinet shall be provided with a sealed case liner conforming to MIL-L-10547. Closure and strapping shall be in accordance with the appendix to the applicable box specification.

5.2.1.2 Cabinets weighing over 1,000 pounds. Each cabinet, cushioned as specified in 5.1.1, shall be packed in a crate. The cabinet shall be blocked, braced, and anchored to prevent movement within the crate during transit and shall be shrouded with paper conforming to PPP-B-

1055. The shroud shall completely enclose the cabinet and shall extend to the base of the crate.

5.2.2 Level B. The cabinets shall be packed as specified in 5.2.1, except that the cabinets shall be domestic class and type and case liners and waterproof shrouds shall not be required. Closures, strapping, blocking, and bracing shall be in accordance with the Appendix to the applicable cabinet specification.

5.2.3 Level C. The cabinets shall be packed to insure carrier acceptance and safe delivery to destination in cabinets complying with the rules and regulations applicable to the mode of transportation.

5.3 Marking.

5.3.1 Civilian agencies. In addition to any special marking required by the contract or order, shipping cabinets shall be marked in accordance with Fed. Std. No. 123.

5.3.2 Military requirements. In addition to any special marking required by the contract or order, shipping cabinets shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Hard copy materials. For the purpose of this specification, hard copy materials are defined as any classified printed material or readily removable media (CD, DVD etc.).

6.2 Ordering data. Purchasers of standard sizes shall include the following information in procurement documents:

- (a) Title, number, and date of this specification.
- (b) Class, and size required (see 1.2.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for such products as have, prior to the time set for opening of bids, been tested and approved for inclusion on the applicable Federal Qualified Products List, whether or not such products have actually been so listed by that date. The attention of suppliers is called to this requirement, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification so that they may be eligible to be awarded contracts or orders for the products covered by this specification. The activity responsible for the Qualified Products List is the National Furniture Commodity Center, Federal Supply Service, General Services Administration, 1901 South Bell Street, Arlington, VA 22202. Information pertaining to qualification may be obtained from that activity.

6.4 Definitions of terms used in this specification.

6.4.1 Entry. For the purpose of this specification, entry means: (1) the opening of the cabinet, or (2) provision of a gap, crevice, or hole of any dimension in the cabinet from which information can be extracted.

6.4.2 Surreptitious entry. For the purpose of this specification, surreptitious entry means a method of entry, such as lock manipulation or radiological attack on the combination lock, which would not be detectable during normal use or during inspection by a qualified person.

6.4.3 Covert entry. For the purpose of this specification, covert entry is defined as a method of entry which causes physical damage to the cabinet or lock such that the damage can be repaired to the point where it would not be detectable by a user during normal use. However, the damage would be detectable during inspection by a qualified person. If replacement parts, including replacement lock parts, or paint, are necessary to conceal the damage caused by the entry attempt so it cannot be detected during normal use, the entry method shall be considered covert.

6.4.4 Forced entry. For the purpose of this specification, forced entry means a method of entry which would leave evidence of the act and which would be readily discernible in the normal use of the cabinet. Forced entry is considered to be an attack in which the attacker has no concern over leaving evidence that the cabinet has been opened.

6.4.5 Normal use. For the purpose of this specification, normal use means the opening of the combination lock, releasing the locking mechanism, opening the cabinet door to the extent necessary for the reception or withdrawal of material; and closing and relocking the cabinet. During normal use, the cabinet's top and front are exposed to view and touch; the rear and sides exposed to view only; and the base is not exposed to view or touch.

6.4.6 Lock manipulation. For the purpose of this specification, lock manipulation is defined as the opening of the combination lock without alteration of the physical structure or disarranging of parts. Ordinarily, manipulation would be accomplished by movement of the lock dial.

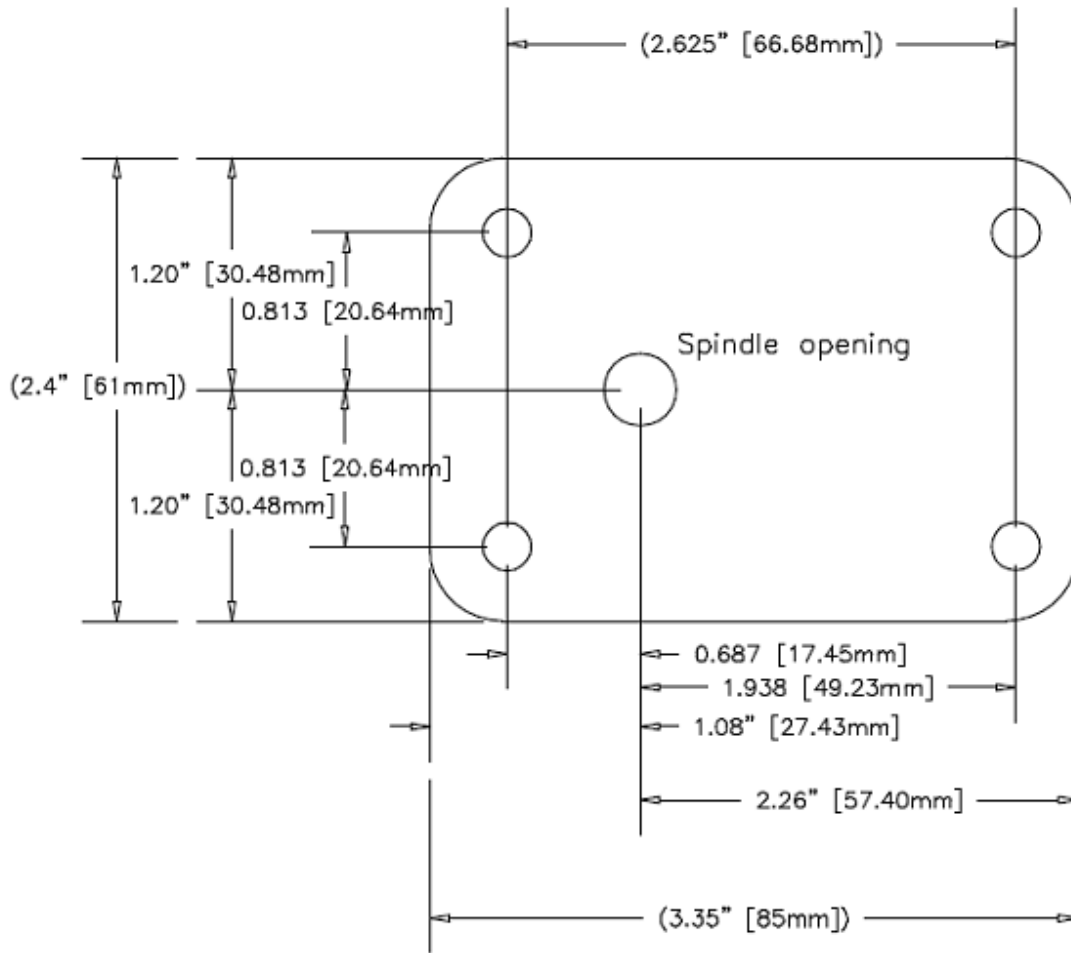
6.5 Samples. All samples required for test purposes shall be furnished at no expense to the Government and the manufacturer shall pay all transportation charges to and from the point where the tests are performed. All tested samples shall become the property of the Government but may be released to the manufacturer at the option of the Government. Upon request, the manufacturer shall furnish to the Government testing facility, a cabinet equal in every respect to that of the qualified sample for use, of inspection and test during the term of qualification. The cabinet shall be furnished at no expense to the Government and will be returned to the manufacturer upon removal of his product from the qualified products list.

6.6 Special techniques. Information relating to special techniques will be disclosed to qualified suppliers and personnel of the Federal agencies on a need-to-know basis.

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Preparing activity:
GSA-FAS





Tolerances:
XX.XX ±0.01 [±0.25 mm]
XX.XXX ±0.005 [±0.13 mm]

Figure 1
Schematic arrangement of lock case holes

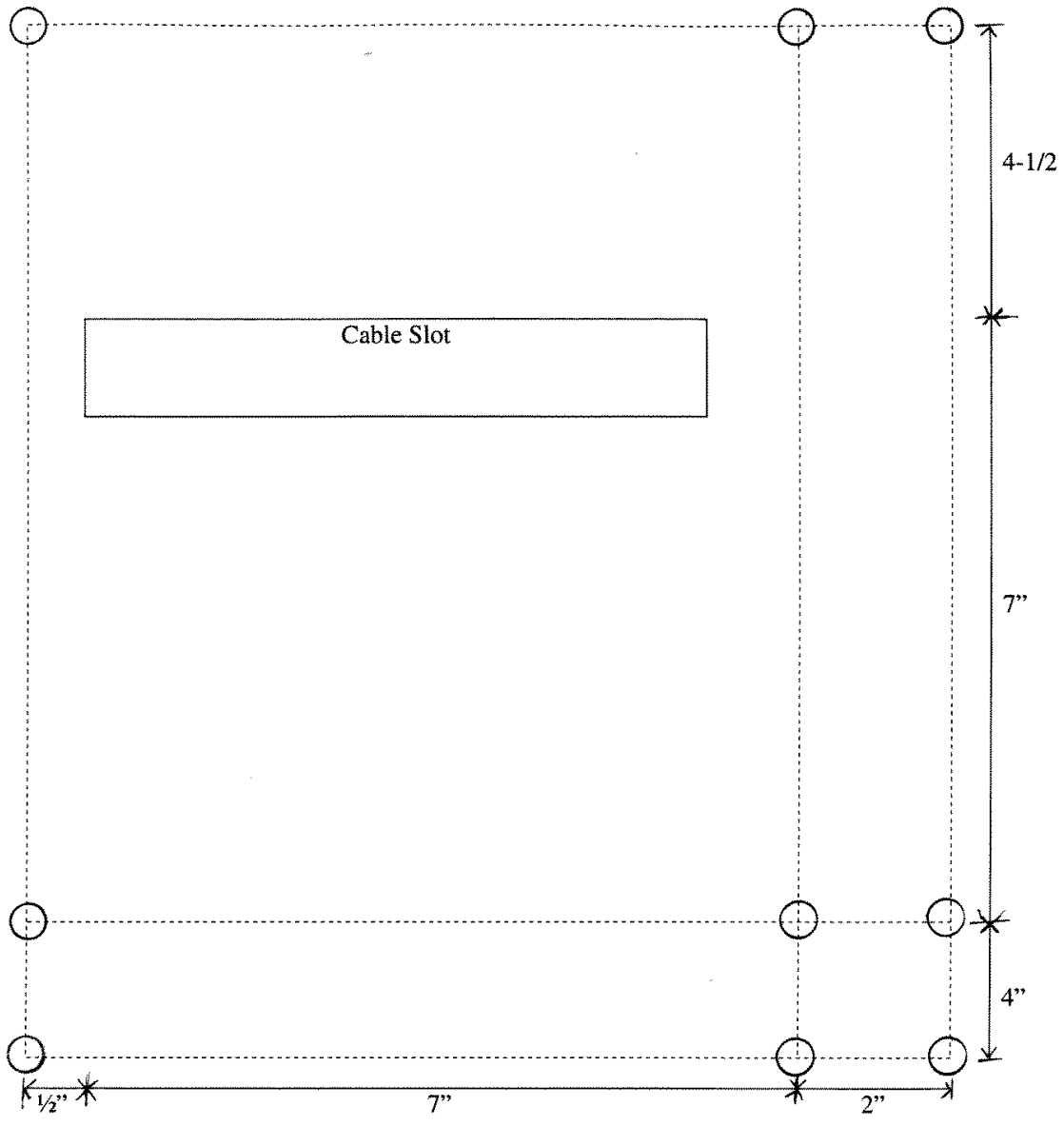
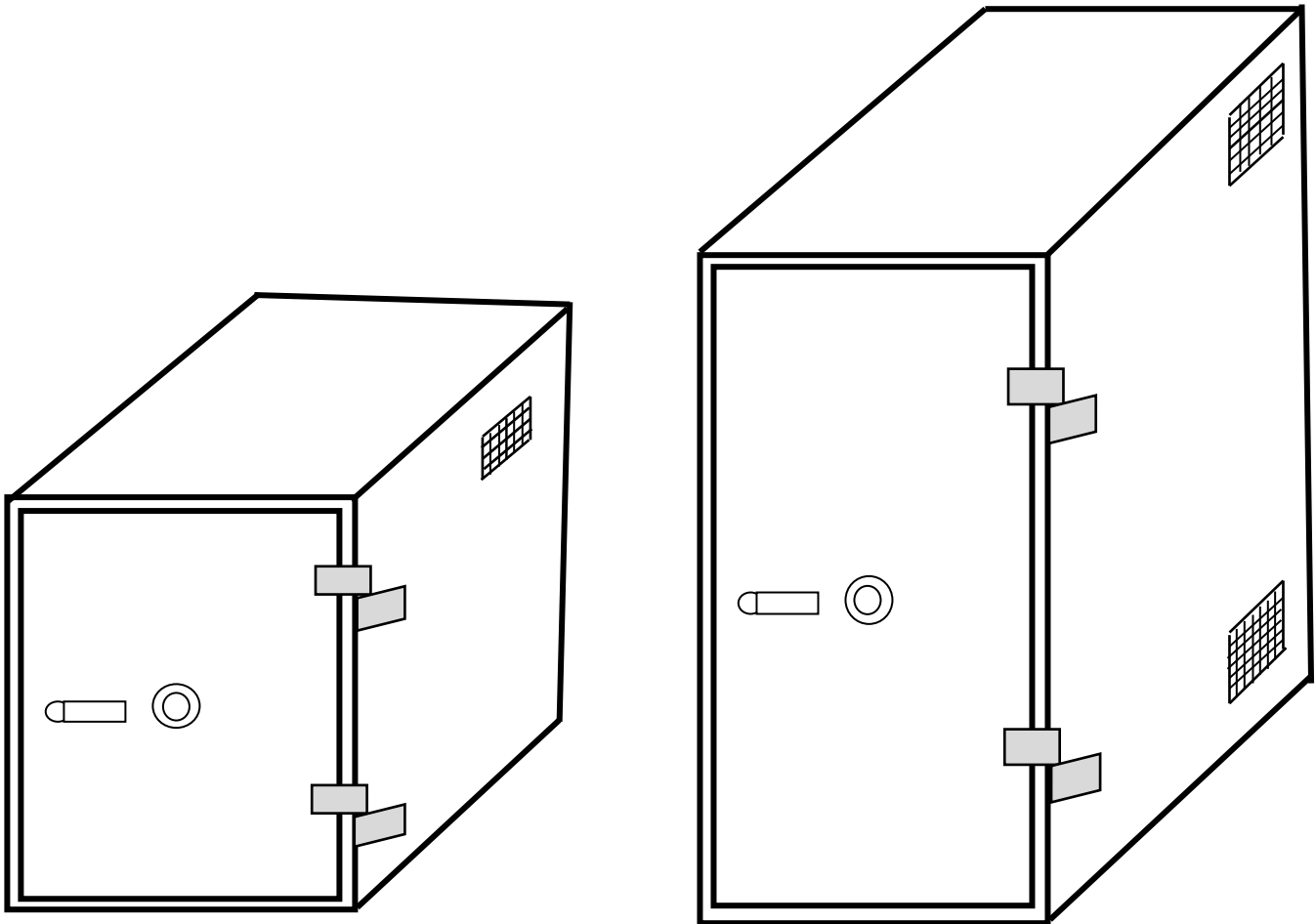


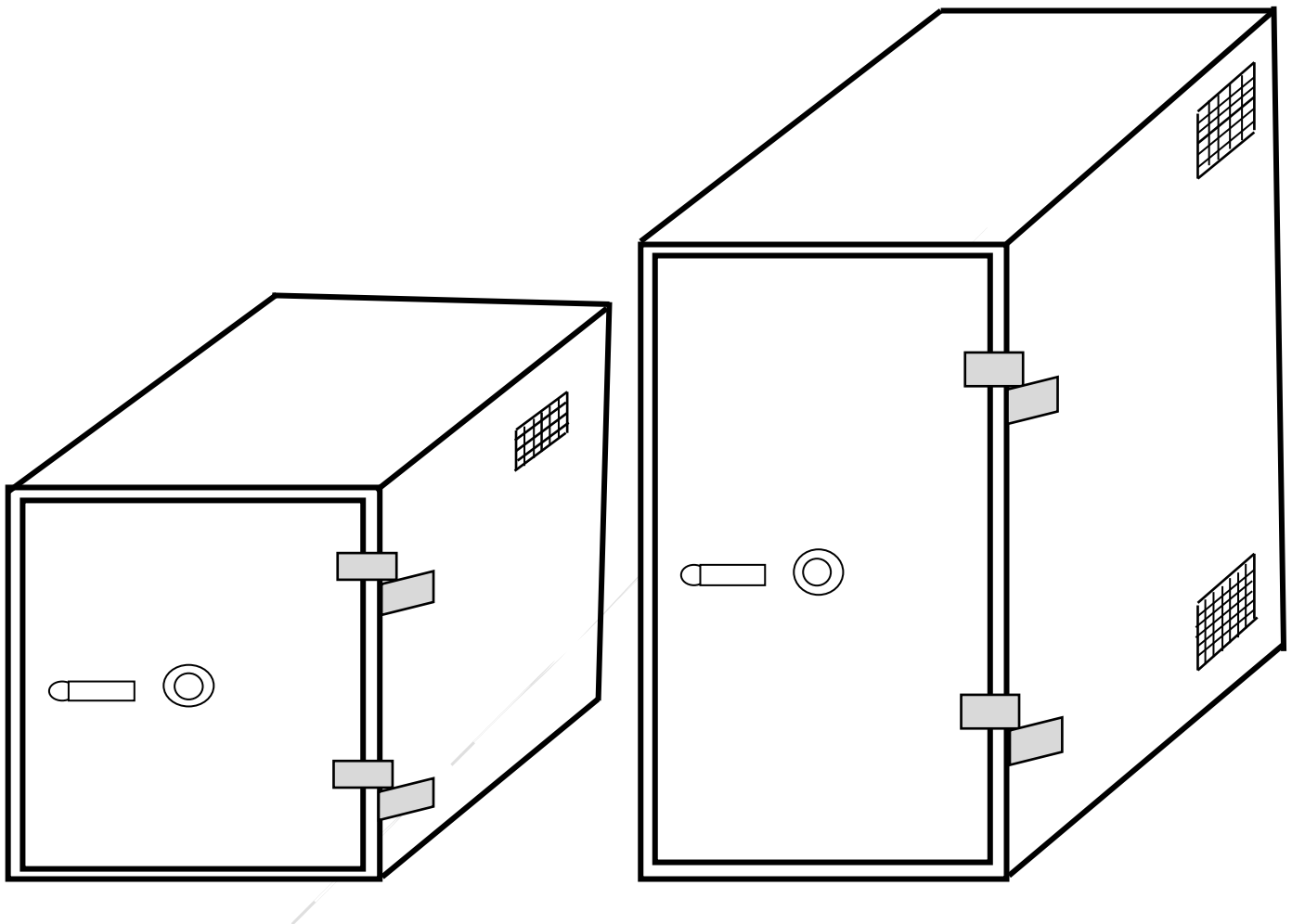
Figure 2
Threaded hole placement



Size 1
19" Rack, 13u

Size 2
19" Rack, 26u

Figure 3
Size 1 & 2 Cabinets



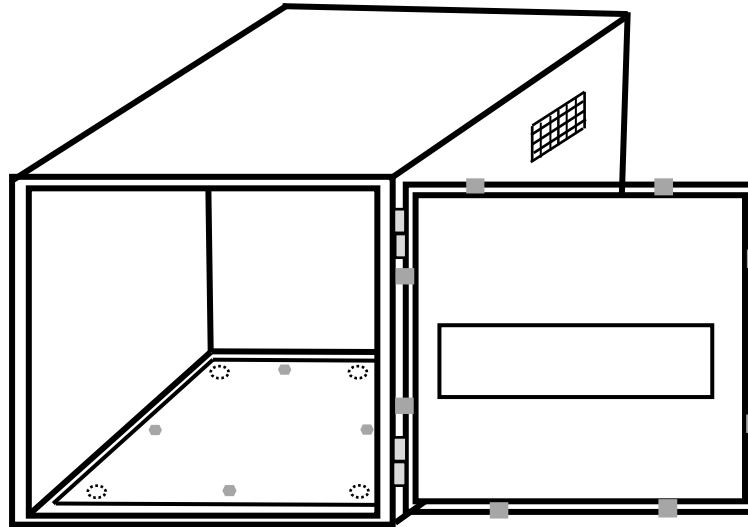
Size 3
23" Rack, 13u

Size 4
23" Rack, 26u

Figure 4
Size 3 & 4 Cabinets

AA-C-2786A

Mounting configuration for cabinets under 250 lbs.



Cable slots (power & signal)
Threaded hole placement

Figure 5
Mounting configuration

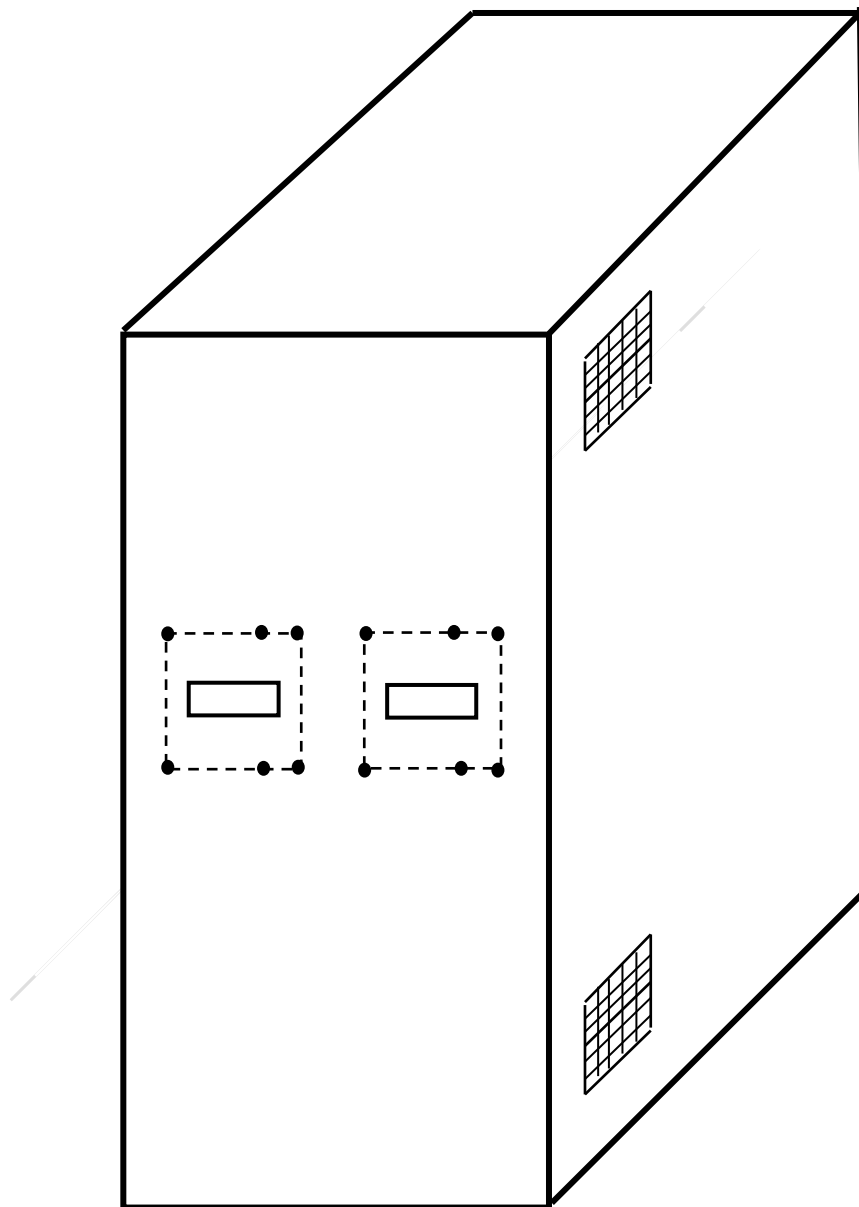


Figure 6
Cable slot placement