

## SECTION 10505

### METAL LOCKERS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

##### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Knocked-down, athletic metal lockers.
  - 2. Locker benches.
- B. Related Sections include the following:
  - 1. Division 6 Section "Rough Carpentry" for concealed wood support base, blocking, and shims required for installing metal lockers and concealed within other construction before metal locker installation.

##### 1.03 DEFINITIONS

- A. Uncoated Steel Sheet Thicknesses: Indicated as the minimum thicknesses.

##### 1.04 SUBMITTALS

- A. General: Submit in accordance with Section 01300.
- B. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal locker and bench.
- C. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
  - 1. Show sloping tops, filler panels, and other accessories.
  - 2. Include locker identification system.
- D. Samples: For units with factory-applied color finishes.
- E. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals.

##### 1.05 QUALITY ASSURANCE

- A. Source Limitations: Obtain metal lockers and accessories through one source from a single manufacturer.
- B. Regulatory Requirements: Where metal lockers are indicated to comply with accessibility requirements, comply with the U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG)."
  - 1. Provide not less than 1 shelf located no higher than **54 inches (1372 mm)** above the floor for side reach.
  - 2. Provide 1 shelf located at bottom of locker no lower than **9 inches (230 mm)** above the floor for side reach.
  - 3. Provide hardware that does not require tight grasping, pinching, or twisting of the wrist, and that operates with a force of not more than **5 lbf (22.2 N)**.

- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver metal lockers until spaces to receive them are clean, dry, and ready for metal locker installation.

#### 1.07 PROJECT CONDITIONS

- A. Field Measurements: Verify the following by field measurements before fabrication and indicate measurements on Shop Drawings:
  1. Concealed framing, blocking, and reinforcements that support metal lockers before they are enclosed.
  2. Recessed openings.

#### 1.08 COORDINATION

- A. Coordinate size and location of concrete bases for metal lockers.
- B. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that metal lockers can be supported and installed as indicated.

### PART 2 - PRODUCTS

#### 2.01 SUPPLIER AND INSTALLER

- A. J. Sallese and Sons, Wakefield, MA, (781) 246-3508, No Substitution.

#### 2.02 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008, Commercial Steel (CS) Type B, suitable for exposed applications.
- B. Expanded Metal: ASTM F 1267, Type II (flattened), Class I, 3/4-inch (19-mm) steel mesh, with at least 70 percent open area.
- C. Stainless-Steel Sheet: ASTM A 666, Type 304.
- D. Fasteners: Zinc- or nickel-plated steel, slotless-type exposed bolt heads, and self-locking nuts or lock washers for nuts on moving parts.
- E. Anchors: Select material, type, size, and finish required for secure anchorage to each substrate.

#### 2.03 KNOCKED-DOWN, STANDARD METAL LOCKERS, TYPE L2 & L3

- A. Product: Penco Products, Inc., Subsidiary of Vesper Corporation; VanguardLockers.
- B. Locker Arrangement: Shall be as follows:
  1. Locker Type L2: Double tier.
  2. Locker Type L3: Single tier.
- C. Body: Assembled by riveting or bolting body components together. Fabricate from unperforated, cold-rolled steel sheet with thicknesses as follows:
  1. Tops, Bottoms, and Intermediate Dividers: 0.0209 inch (0.55 mm) thick, 24 gage, with single bend at sides.

2. Backs and Sides: 0.0209 inch (0.55 mm) thick, 24 gage, with full-height, double-flanged connections.
  3. Shelves: 0.0209 inch (0.55 mm) thick, 24 gage, with double bend at front and single bend at sides and back.
- D. Frames: Channel formed; fabricated from 0.0528-inch- (1.35-mm-) thick, 16 gage, cold-rolled steel sheet; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral door strike full height on vertical main frames.
1. Cross Frames between Tiers: Channel formed and fabricated from same material as main frames; welded to vertical frame members.
  2. Frame Vents: Fabricate horizontal face frames with vents.
- E. Doors: One-piece; fabricated from 0.0677-inch- (1.7-mm-) thick, 14 gage, cold-rolled steel sheet; formed into channel shape with double bend at vertical edges, and with right-angle single bend at horizontal edges.
1. Reinforcement: Manufacturer's standard reinforcing angles, channels, or stiffeners for doors more than 15 inches (381 mm) wide; welded to inner face of doors.
  2. Stiffeners: Manufacturer's standard full-height stiffener fabricated from 0.0428-inch- (1.1-mm-) thick, 18 gage, cold-rolled steel sheet; welded to inner face of doors.
  3. Door Style: Vented panel as follows:
    - a. Louvered Vents: Not less than six louver openings at top and bottom for single-tier lockers and three louver openings at top and bottom for double-tier lockers.
- F. Hinges: Self-closing; welded to door and attached to door frame with not less than 2 factory-installed rivets per hinge that are completely concealed and tamper resistant when door is closed; fabricated to swing 180 degrees.
1. Knuckle Hinges: Steel, full loop, 5 or 7 knuckles, tight pin; minimum 2 inches (51 mm) high. Provide not less than 3 hinges for each door more than 42 inches (1067 mm) high.
- G. Recessed Door Handle and Latch: Stainless-steel cup with integral door pull, recessed so locking device does not protrude beyond face of door; pry resistant.
1. Multipoint Latching: Finger-lift latch control designed for use with built-in combination locks, built-in key locks, or padlocks; positive automatic and prelocking.
    - a. Latch Hooks: Equip doors 48 inches (1219 mm) and higher with 3 latch hooks and doors less than 48 inches (1219 mm) high with 2 latch hooks; fabricated from minimum 0.0966-inch- (2.5-mm-) thick steel; welded or riveted to full-height door strikes; with resilient silencer on each latch hook.
    - b. Latching Mechanism: Manufacturer's standard rattle-free latching mechanism and moving components isolated to prevent metal-to-metal contact, and incorporating a prelocking device that allows locker door to be locked while door is open and then closed without unlocking or damaging lock or latching mechanism.
- H. Combination Padlocks: Provided by Owner.
- I. Equipment: Equip each metal locker with identification plate and the following, unless otherwise indicated:
1. Single-Tier Units: Shelf, one double-prong ceiling hook, and two single-prong wall hooks.
  2. Double-Tier Units: One double-prong ceiling hook and two single-prong wall hooks.
- J. Accessories:
1. Continuous Sloping Tops: Fabricated from cold-rolled steel sheet, manufacturer's standard thickness, but not less than 0.0329 inch (0.85 mm) thick, 22 gage.
    - a. Closures: Vertical-end type.
  2. Recess (Filler) Trim: Fabricated from 0.0428-inch- (1.1-mm-) thick, 18 gage, cold-rolled steel sheet.
  3. Finished End Panels: Fabricated from 0.0677-inch- (1.7-mm-) thick, 14 gage, cold-rolled steel sheet.

- K. Locker Configuration and Size: As follows:
1. Double Tier Lockers, Type L2: 12- by 12- by 72-inches (305- by 305- by 1830-mm).
  2. Single Tier Lockers, Type L3: 12- by 12- by 72-inches (305- by 305- by 1830-mm).
- L. Finish: Baked enamel
1. Color(s): As selected by Architect from manufacturer's full range including premium options; allow for two color choices.

2.04 KNOCKED-DOWN, ATHLETIC METAL LOCKERS, TYPE L1

- A. Product: Penco Products, Inc., Subsidiary of Vesper Corporation; Invincible II Lockers.
1. Knocked-Down, Athletic Metal Lockers:
- B. Locker Arrangement: Single tier.
- C. Body: Assembled by bolting body components together. Fabricate from unperforated, cold-rolled steel sheet with thicknesses as follows:
1. Tops and Bottoms: 0.0528 inch (1.35 mm) thick, 16 gage, with single bend at edges.
  2. Backs: 0.0428 inch (1.1 mm) thick, 18 gage.
  3. Shelves: 0.0528 inch (1.35 mm) thick, 16 gage, with double bend at front and right-angle single bend at sides and back.
- D. Sides: Manufacturer's standard; 0.0528-inch- (1.35-mm-) thick, 16 gage, cold-rolled steel sheet with manufacturer's standard diamond perforations or 0.0897-inch- (2.3-mm-) thick, 13 gage, expanded metal 0.0329 inch (0.85 mm) hemming welded to all four sides.
- E. Frames: Channel formed; fabricated from 0.0528-inch- (1.35-mm-) thick, 16 gage, cold-rolled steel sheet or 0.0966-inch- (2.5-mm-) thick, 12 gage, steel angles; lapped and factory welded at corners; with top and bottom main frames factory welded into vertical main frames. Form continuous, integral door strike full height on vertical main frames.
- F. Doors: Manufacturer's standard perforated or expanded-metal door as follows:
1. Perforated Doors: One-piece, fabricated from 0.0677-inch- (1.7-mm-) thick, 14 gage, cold-rolled steel sheet with manufacturer's standard diamond perforations; formed into channel shape with double bend at vertical edges and with right-angle single bend at horizontal edges.
    - a. Reinforcement: Manufacturer's standard reinforcing angles, channels, or stiffeners for doors more than 15 inches (381 mm) wide; welded to inner face of doors.
  2. Expanded-Metal Doors: Fabricated from 0.0897-inch- (2.3-mm-) thick, 13 gage, expanded metal; welded to 0.0966-inch- (2.5-mm-) thick, 12 gage, steel angle frame; with 0.0897-inch- (2.3-mm-) thick, cold-rolled steel sheet lock panel backed by 0.0528-inch- (1.35-mm-) thick, 16 gage, cold-rolled steel sheet retainer welded to door frame.
- G. Hinges: Self-closing; welded to door and attached to door frame with not less than 2 factory-installed rivets per hinge that are completely concealed and tamper resistant when door is closed; fabricated to swing 180 degrees.
1. Knuckle Hinges: Steel, full loop, 5 or 7 knuckles, tight pin; minimum 2 inches (51 mm) high. Provide not less than 3 hinges for each door more than 42 inches (1067 mm) high.
- H. Recessed Door Handle and Latch: Stainless-steel cup with integral door pull, recessed so locking device does not protrude beyond face of door; pry resistant.
1. Multipoint Latching: Finger-lift latch control designed for use with built-in combination locks, built-in cylinder locks, or padlocks; positive automatic and prelocking.
    - a. Latch Hooks: Equip doors 48 inches (1219 mm) and higher with 3 latch hooks; fabricated from minimum 0.1116-inch- (2.8-mm-) thick steel; welded to full-height door strikes; with resilient silencer on each latch hook.
    - b. Latching Mechanism: Manufacturer's standard rattle-free latching mechanism and moving components isolated to prevent metal-to-metal contact, and incorporating a prelocking device that allows locker door to be locked while door is open and then closed without unlocking or damaging lock or latching mechanism.

- I. Combination Padlocks: Provided by Owner.
- J. Equipment: Equip each metal locker with identification plate and the following, unless otherwise indicated:
  - 1. Single-Tier Units: Shelf, one double-prong ceiling hook, and two single-prong wall hooks.
- K. Accessories:
  - 1. Continuous Sloping Tops: Fabricated from minimum **0.0428-inch- (1.1-mm-)** thick, 18-gage, cold-rolled steel sheet; approximately 20-degree pitch.
    - a. Closures: Vertical-end type.
    - b. Sloped top corner fillers, mitered.
  - 2. Filler Panels: Fabricated from **0.0428-inch- (1.1-mm-)** thick, cold-rolled steel sheet.
  - 3. Boxed End Panels: Fabricated from **0.0677-inch- (1.7-mm-)** thick, 14 gage, cold-rolled steel sheet.
- L. Finish: Baked enamel
  - 1. Color(s): As selected by Architect from manufacturer's full range including premium colors..

## 2.05 LOCKER BENCHES

- A. General: Provide locker benches fabricated by same manufacturer as metal lockers.
- B. Bench Tops: Manufacturer's standard 1-piece units, of the following material, minimum **9-1/2 inches (240 mm)** wide by **1-1/4 inches (32 mm)** thick, with rounded corners and edges:
  - 1. Laminated maple with one coat of clear sealer on all surfaces, and one coat of clear lacquer on top and sides .
- C. Fixed Pedestals: Manufacturer's standard supports, with predrilled fastener holes for attaching bench top and anchoring to floor, complete with fasteners and anchors, and as follows:
  - 1. Tubular Steel: **1-1/4-inch- (32-mm-)** diameter steel tubing, with **0.1265-inch- (3.2-mm-)** thick steel flanges welded at top and base; with baked-enamel finish; anchored with exposed fasteners.
    - a. Color: As selected by Architect from manufacturer's full range.

## 2.06 FABRICATION

- A. General: Fabricate metal lockers square, rigid, and without warp; with metal faces flat and free of dents or distortion. Make exposed metal edges free of sharp edges and burrs, and safe to touch.
  - 1. Form body panels, doors, shelves, and accessories from one-piece steel sheet, unless otherwise indicated.
  - 2. Provide fasteners, filler plates, supports, clips, and closures as required for a complete installation.
- B. Unit Principle: Fabricate each metal locker with an individual door and frame; individual top, bottom, and back; and common intermediate uprights separating compartments.
- C. Knocked-Down Construction: Fabricate metal lockers for nominal assembly at Project site using nuts, bolts, screws, or rivets. Factory weld frame members together to form a rigid, one-piece assembly.
- D. Hooks: Manufacturer's standard ball-pointed type, aluminum or steel; zinc plated.
- E. Identification Plates: Manufacturer's standard etched, embossed, or stamped aluminumplates; with numbers and letters at least **3/8 inch (9 mm)** high.
- F. Continuous Sloping Tops: Fabricated in lengths as long as practicable, without visible fasteners at splice locations; finished to match lockers.
  - 1. Sloped top corner fillers, mitered.
- G. Filler Panels: Fabricated in an unequal leg angle shape; finished to match lockers. Provide slip joint filler angle formed to receive filler panel.

- H. Boxed End Panels: Fabricated with 1-inch- (25-mm-) wide edge dimension, and designed for concealing fasteners and holes at exposed ends of nonrecessed metal lockers; finished to match lockers.
  - 1. Provide one-piece panels for double-row (back-to-back) locker ends.
- I. Finished End Panels: Designed for concealing unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed metal lockers; finished to match lockers.
  - 1. Provide one-piece panels for double-row (back-to-back) locker ends.

## 2.07 STEEL SHEET FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Factory finish steel surfaces and accessories except stainless-steel and chrome-plated surfaces.
- C. Surface Preparation: Clean surfaces of dirt, oil, grease, mill scale, rust, and other contaminants that could impair paint bond. Use manufacturer's standard methods.
- D. Baked-Enamel Finish: Immediately after cleaning, pretreating, and phosphatizing, apply manufacturer's standard thermosetting baked-enamel finish. Comply with paint manufacturer's written instructions for application, baking, and minimum dry film thickness.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

- A. Examine walls, floors, and support bases, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
  - 1. If unacceptable conditions are encountered, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION

- A. General: Install level, plumb, and true; shim as required, using concealed shims.
  - 1. Anchor locker runs at ends and at intervals recommended by manufacturer, but not more than 36 inches (910 mm) o.c. Install anchors through backup reinforcing plates, channels, or blocking as required to prevent metal distortion, using concealed fasteners.
  - 2. Anchor single rows of metal lockers to walls near top and bottom of lockers.
  - 3. Anchor back-to-back metal lockers to floor.
- B. Knocked-Down Metal Lockers: Assemble knocked-down metal lockers with standard fasteners, with no exposed fasteners on door faces or face frames.
- C. Equipment and Accessories: Fit exposed connections of trim, fillers, and closures accurately together to form tight, hairline joints, with concealed fasteners and splice plates.
  - 1. Attach hooks with at least two fasteners.
  - 2. Attach door locks on doors using security-type fasteners.
  - 3. Identification Plates: Identify metal lockers with identification indicated on Drawings.
    - a. Attach plates to each locker door, near top, centered, with at least two aluminum rivets.
  - 4. Attach filler panels with concealed fasteners. Locate fillers panels where indicated on Drawings.
  - 5. Attach sloping top units to metal lockers, with closures at exposed ends.
  - 6. Attach boxed end panels with concealed fasteners to conceal exposed ends of nonrecessed metal lockers for Type L3.
  - 7. Attach finished end panels with fasteners only at perimeter to conceal exposed ends of nonrecessed metal lockers for Types L1 and L2.

- D. Fixed Locker Benches: Provide not less than 2 pedestals for each bench, uniformly spaced not more than **72 inches (1830 mm)** apart. Securely fasten tops of pedestals to undersides of bench tops, and anchor bases to floor.

3.03 ADJUSTING, CLEANING, AND PROTECTION

- A. Clean, lubricate, and adjust hardware. Adjust doors and latches to operate easily without binding. Verify that integral locking devices operate properly.
- B. Protect metal lockers from damage, abuse, dust, dirt, stain, or paint. Do not permit metal locker use during construction.
- C. Touch up marred finishes, or replace metal lockers that cannot be restored to factory-finished appearance. Use only materials and procedures recommended or furnished by metal locker manufacturer.

END OF SECTION