



**SECTION 10 51 13
METAL LOCKERS**

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Heavy Duty Welded Angle Frame Lockers.
- B. Locker benches.

1.02 REFERENCES

- A. ADAAG - Americans with Disabilities Act, Accessibility Guidelines.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Show the following:
 - 1. Dimensioned drawings including plans, elevations, and sections to show locker locations and interfaces with adjacent substrates.
 - 2. Details of assembly, erection, anchorage and clearance requirements.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and finishes.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Protect locker finish and adjacent surfaces from damage.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Penco Products, Inc., which is located at: 2024 Cressman Rd. Skippack, PA 19474-0158; Toll Free Tel: 800-562-1000; Tel: 610-666-0500; Fax: 610-666-7561; Email: General@PencoProducts.com; Web: www.pencoproducts.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 25 00.
- D. Provide only metal lockers fabricated in the United States by a single domestic manufacturer.

2.02 MATERIALS

- A. Steel: Prime grade mild cold-rolled sheet steel free from surface imperfection, capable of taking a high-grade enamel finish and in compliance with ASTM A1008.
- B. Steel: Sheet steel components shall be fabricated using zinc-coated steel free from surface imperfection, capable of taking a high-grade enamel finish and in compliance with ASTM A879.
- C. Hooks: Zinc plated forged steel, ball ends.
- D. Bolts and Nuts: Zinc plated truss fin head bolts and hex nuts.

2.03 HEAVY DUTY LOCKERS

- A. Heavy Duty Lockers: All locker body components made of cold rolled steel specially formed for added strength and rigidity and to ensure tight joints at fastening points.
 - 1. Lockers with Doors: Penco Angle Iron welded lockers, no legs (standard).
 - 2. Lockers with Doors: Penco Angle Iron welded lockers, 4 inch (101 mm) integral base. (optional)
- B. Locker Body Construction: Steel specially formed for added strength and rigidity and to ensure tight joints at fastening points.
 - 1. Sides, Bottoms, Tops, and Shelves:
 - a. 16 gauge steel.
 - b. Ventilation: 3/4 inch (19 mm) wide by 1-1/2 inch (38 mm) high diamond-shaped perforations.
 - c. Solid sides.
 - 2. Backs: Solid 18 gauge steel.
 - 3. Doors:
 - a. 14 gauge steel.
 - b. Ventilation: 3/4 inch (19 mm) wide by 1-1/2 inch (38 mm) high diamond-shaped perforations.
 - c. Solid doors.
 - 4. Tops and bottoms with three sides formed 90 degrees, the front offset formed to be flush with horizontal frame member.
 - 5. Shelves with four sides formed to 90 degrees, front edge having a second bend.
 - 6. Hole spacing in locker body construction: Not exceeding 9 inches (225 mm).
 - 7. Two- and three-tier lockers: Intermediate channel-shaped horizontal frame members attached to side frames with mortise and tenon construction, securely welded.
- C. Locker Body: Angle Iron Welded.
 - 1. Tops, Bottoms, and Shelves:
 - a. 16 gauge steel tops, bottom and shelves.
 - 2. Sides:
 - a. 14 gauge steel with diamond shaped perforations.
 - b. 16 gauge sheet, solid
 - c. Angle Iron welded lockers 13 gauge flattened expanded metal sides.
 - 3. Backs: Solid 18 gauge steel.
 - a. Groups to 48 inches (1.219 m) wide: One-piece back.
 - b. Groups over 48 inches (1.219 m) wide: Two-piece back.
 - 4. Doors: 14 gauge steel.
 - 5. Framing: Consists of continuous 1 inch (25.5 mm) by 1 inch (25.5 mm) by 1/8 inch (3 mm) pickled angle iron steel. Frame members are welded.
 - 6. Sides and Intermediate Partitions: Constructed with 16 gauge steel with diamond shaped perforations, securely welded to frame.
 - 7. Sides and Intermediate Partitions: Constructed with 3/4 inch (19 mm) flattened expanded metal securely welded to frame at intervals not to exceed

6 inches (152 mm). All exposed expanded metal edges will be bond sheared to prevent snags or cuts.

8. Tops: Formed of steel sheet; one continuous flat top for each group of lockers.
9. Bottoms: Formed of steel sheet; one continuous bottom for each group of lockers with front to back 16 gauge steel spacer channel welded to locker bottom when closed bases are not used.
10. Shelves: steel, flanged four sides with additional return flange on front edge to increase strength.

D. Locker Doors: One piece sheet steel.

1. Multi-Point Latch Doors: Full channel formation of adequate depth to fully conceal lock bar on lock side, channel formation on hinge side, right angle formations across top and bottom, with holes for attaching number plates.
2. Single Point Latch Doors: 14 gauge door reinforced by a full height 3-1/2 inch (89 mm) wide, 18 gauge vertical pan welded to the top, bottom and hinge side flanges and rear of door skin on 12 inch (305 mm), 15 inch (381 mm) and 18 inch (457 mm) wide doors. Provide a horizontal pan for doors wider than 18 inches (457 mm).
3. Single Point Latch Doors: 14 gauge door reinforced by a full 18 gauge inner pan welded to outer door skin on all four sides.
 - a. Solid outer door, solid inner pan
 - b. Diamond perforated outer, offset diamond perforated inner pan.
 - c. 3 inch or 6 inch louvered outer door, mini louvered inner pan.
 - d. Mini louvered outer, mini louvered inner pan.
4. Doors over 15 inches (380 mm) Wide and 30 inches (0.762 m) High: Provided with 3 inch (75 mm) wide 20 gauge full height reinforcing pan welded to inside face of door at 6 inch (150 mm) centers.
5. Angle Iron Multi-Point Cremone Turn Handle door which engages the door frame at the top, bottom and center.
6. Box Lockers: Channel formations on lock and hinge sides; right angle flanges on top and bottom with friction catch door pull.
7. Provide holes for attaching number plates.
8. Ventilation:
 - a. Doors 20 inches (508 mm) or higher: 3/4 inch (19 mm) wide by 1-1/2 inch (38 mm) high diamond-shaped perforations.
 - b. All other doors: 7/16 inch (11 mm) wide by 15/16 inch (24 mm) high diamond-shaped perforations.
9. Ventilation: Provide louvered doors in manufacturer's standard louver pattern.
10. Ventilation: Provide louvered doors in manufacturer's standard mini-louver pattern, louvers 5/8 inch (15.8 mm) wide and 1/4 inch (6.3 mm) high.
11. Ventilation: Provide fully louvered doors in manufacturer's standard full louver pattern.
12. No Ventilation: Provide with solid doors.

E. Hinges:

1. Continuous Hinges: Continuous piano hinge for the full height of the door.
2. Butt Hinges: 3 inch (127 mm) high, five-knuckle, 14 gauge fast pin heavy-duty butt hinges welded to door and frame. Provide three hinges on each single tier door and two hinges on each 2- through 6-tier doors.

F. Integral Metal Base: 4-inch (101 mm) high 14 gauge steel channel, welded to the locker bottom.

2.04 DOOR HANDLES AND LATCHING

A. 1, 2 and 3 Tier Lockers:

1. Single-point latching:

- a. Recess handle in door.
 - b. Integral Pocket and Pull: 22 gauge brushed stainless steel securely fastened to door with two lugs and a positive tamper-resistant decorative fastener.
 - 1) Pocket Depth: Sufficient to prevent a combination padlock, built-in combination lock, or key lock from protruding beyond door face.
 - 2) Pull: Formed in pocket.
 - 3) Padlock Staple: Protruding through pocket.
 - c. Provide lock hole cover plate for use with padlocks.
 - d. Locking Device: 11 gauge steel hasp welded to locker frame; include surface for engaging the bolt of a built-in combination or key lock and anti-pry lug and slot to deter prying open when locked.
 - e. Firmly secure rubber silencers to locker frame.
2. Cremone Latching:
- a. Handle shall be a heavy duty turn handle that engages the door frame on three sides. The top and bottom frames are engaged with 3/8 inch (9.5 mm) steel rods, and a 1/8 inch (3 mm) thick center latch engages at the side.
 - b. Double door configurations shall consist of a left hinged door secured its full length by the right hinged door when latched.
 - c. Handle Assembly shall be secured to door using a threaded lock nut to facilitate adjustment and removal for repair if necessary. Welded handle assemblies shall not be accepted.
3. Multi-point latching with recessed handles:
- a. Recess finger-lift control handle in door.
 - b. Pocket: 22 gauge brushed stainless steel securely fastened to door with two tabs and a positive tamper-resistant decorative fastener; of depth sufficient to prevent a combination padlock, built-in combination lock, or key lock from protruding beyond door face.
 - c. Provide lock hole cover plate for use with padlocks.
 - d. Attach 14 gauge formed steel lifting piece to latching channel with one concealed retaining lug and one rivet, assuring a positive two-point connection.
 - e. Handle Finger Lift: Molded, sound-deadening, attached with rivet; padlock eye for use with 9/32 inch (7.1 mm) diameter padlock shackle.
 - f. Latch Clip: Glass-filled nylon engaging the door frame and holding the door shut.
 - 1) Doors 60 inches (1.524 m) and 72 inches (1.828 m) high: Three points.
 - 2) Doors 20 inches (0.508 m) to 48 inches (1.22 m) high: Two points.
 - g. Locking Device: Positive, automatic type, whereby locker may be locked when open, then closed without unlocking.
 - h. Firmly secure one rubber silencer in frame at each latch hook.
4. Single-point latching using double pan door:
- a. Recess handle in door.
 - b. Integral Pocket and Pull: 22 gauge brushed stainless steel securely fastened to door with two lugs and a positive tamper-resistant decorative fastener.
 - 1) Pocket Depth: Sufficient to prevent a combination padlock, built-in combination lock, or key lock from protruding beyond door face.
 - 2) Pull: Formed in pocket.
 - 3) Padlock Staple: Protruding through pocket.
 - c. Provide lock hole cover plate for use with padlocks.

- d. Locking Device: 11 gauge steel hasp welded to locker frame; include surface for engaging the bolt of a built-in combination or key lock and anti-pry lug and slot to deter prying open when locked.
 - e. Firmly secure rubber silencers to locker frame.
5. Single-Point Latching for wrap around/rotary locks:
- a. Recess Handle in door
 - b. Integral Pocket and Pull: 22 gauge brushed stainless steel securely fastened to door with two lugs and a positive tamper-resistant decorative fastener.
 - 1) Pocket Depth: Sufficient to prevent a combination padlock, built-in combination lock, or key lock from protruding beyond door face.
 - 2) Pull: Formed in pocket.
 - 3) Pocket punched for built-in lock mounting only. No padlock slot.
 - c. Locking Device: 11 gauge steel hasp welded to locker frame; include surface for secure wrap around vertical engagement by a built-in rotary-type lock to deter prying open when locked. Hasp must be adaptable to common horizontal throw locker lock and padlock use.
 - d. Firmly secure rubber silencers to locker frame.
- B. Box Lockers (4 to 9 Tier):
- 1. Punch doors for use with padlocks or built-in locks.
 - 2. Equip doors for use with padlocks with an 18 gauge combination door pull, staple, and lock hole cover plate with integral friction catch.
- C. Box Lockers (4 to 9 Tier):
- 1. Finger-operated 11 gauge steel slam latch in each door with an electrogalvanized trigger and spring contained in a 14 gauge steel case welded to the door.
 - 2. Weld 13 gauge steel hasp to frame to engage spring latch.
 - 3. Securely install rubber bumpers in frame.

2.05 INTERIOR EQUIPMENT

- A. ADA-Compliant Lockers (Recessed Handles with Multi-Point Latch):
- 1. Single Tier Lockers: Hat shelf at maximum 48 inches (1.219 m) off the floor for unobstructed forward and side reach.
 - 2. Locker Compartment Bottom: Minimum of 15 inches (230 mm) off the floor, or an extra shelf placed 15 inches (381 mm) off the floor for unobstructed forward and side reach.
 - 3. Handicapped symbol attached to door.
 - 4. Hooks and rods as specified for other lockers.
- B. All Welded Lockers:
- 1. Single-Tier, 48-1/2 inches (1.232 m) or Higher: Hat shelf located approximately 9 inches (228 mm) below top of locker.
 - 2. Openings 20 inches (0.508 m) or Higher and 12 (305 mm) or 15 inches (380 mm) Wide: Two single-prong wall hooks and one double-prong ceiling hook.
 - 3. Over 15 inches (380 mm) Wide: Four single-prong wall hooks and one double-prong ceiling hook.

2.06 ACCESSORIES

- A. Number Plates: Provide each locker with a polished aluminum number plate, 2-1/4 inches (57 mm) wide by 1 inch (25 mm) high, with black numerals not less than 3/8 inch (9.5 mm) high; attach to face of door with two aluminum rivets.

- B. Locks: Built-in flat key locks; control-key to same series.
- C. Locks: Built-in grooved key locks (pin tumbler); control-key to same series.
- D. Locks: Built-in three-number dialing combination locks capable of at least five different combinations changes; provide control key, combination change key, and combination control charts.
 - 1. Horizontal bolt
 - 2. Wrap around/rotary bolt
- E. Padlocks: Master-keyed three-number dialing combination type padlocks; provide master key.
- F. Coin-Operated Locks:
 - 1. Coin return/deposit type.
 - a. Token.
 - b. One quarter.
 - c. Two quarters.
 - 2. Coin collect/pay type with cash box.
 - a. Token.
 - b. One quarter.
 - c. Two quarters.
- G. Continuous Sloped Hoods: 18 gauge steel, slope rise equal to 1/3 of the locker depth (18.5 degrees), plus a 1 inch (25 mm) vertical rise at front.
 - 1. Supplied in 72 inch (1829 mm) lengths only.
 - 2. Slip joints without visible fasteners at splice locations.
 - 3. Provide necessary end closures.
 - 4. Finish to match lockers.
- H. Continuous Sloped Hoods: 16 gauge steel, slope rise equal to 1/3 of the locker depth (18.5 degrees), plus a 1 inch (25 mm) vertical rise at front.
 - 1. Supplied in 72 inch (1829 mm) lengths only.
 - 2. Slip joints without visible fasteners at splice locations.
 - 3. Provide necessary end closures.
 - 4. Finish to match lockers.
- I. Finished End Panels: Minimum 16 gauge steel formed to match locker depth and height, 1 inch (25 mm) edge dimension; finish to match lockers and install with concealed fasteners.
- J. Front Fillers: 20 gauge steel formed in an angle shape, with 20 gauge slip joint angles formed in an angle shape with double bend on one leg forming a pocket to provide adjustable mating with angle filler.
 - 1. Attachment by means of concealed fasteners.
 - 2. Finish to match lockers.
- K. Recess Trim: 18 gauge steel, 3 inch (75 mm) face dimension.
 - 1. Vertical and/or horizontal as required.
 - 2. Standard lengths as long as practical.
 - 3. Attach to lockers with concealed clips.
 - 4. Provide necessary finish caps and splices.
 - 5. Finish to match lockers.
- L. Benches: Laminated selected hardwood, 1-1/4 inch (31 mm) full finished thickness, corners rounded and sanded, surfaces finished with two coats of clear lacquer.
 - 1. Width: 9-1/2 inches (240 mm) wide.
 - 2. Width: 12 inches (305 mm) wide.

3. Width: 24 inches (610 mm) wide.
 4. Lengths: As shown.
- M. Heavy-Duty Bench Pedestals: Steel tubing with 10 gauge steel flanges welded to each end, 16-1/4 inches (412 mm) high, finish to match lockers.
- N. Stainless Steel Free-Standing Bench Pedestals: 2-inch (50 mm) diameter brushed 16 gauge stainless steel formed into a trapezoid, 14 inch (355 mm) wide bottom with two 5/16 inch (7.9 mm) diameter holes, top flange with four 5/16 inch (7.9 mm) diameter holes for fastening to bench
- 2.07 FABRICATION

- A. Fabricate lockers square, rigid, without warp, with metal faces flat and free of distortion.
- B. Welded Lockers: Pre-assemble lockers by welding into one piece structures in groupings most practical for job requirements, welds free of burrs; maximum width of group to be 54 inches (1.371 m); no bolts, nuts, or rivets allowed in assembly of main locker groups.
- C. Finish: Enamel powder coat paint finish electrostatically applied and properly cured to manufacturer's specifications for optimum performance. Finishes containing volatile organic compounds and subject to out-gassing are not acceptable. Locker exterior and interior shall be painted the same color.
1. Powder Coat - Dry Thickness: 1 to 1.2 mils (0.025 to 0.03 mm).
 2. Powder Coat Plus - Dry Thickness: 2 to 2.2 mils (0.05 to 0.055 mm).
 3. Color: As selected from manufacturer's standard colors.
 4. Special Finish
 - a. Custom color
 - b. Anti-Graffiti
 - c. Anti-Microbial
 - d. TGIC
 - e. Ultra-Weatherable

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates and bases have been properly prepared.
- B. If substrate and bases are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 INSTALLATION

- A. Install metal lockers and accessories at locations shown in accordance with manufacturer's instructions.
- B. Install lockers plumb, level, and square.
- C. Anchor lockers to floor and wall at 48 inches (1.219 m) or less, as recommended by the manufacturer.
- D. Bolt adjoining locker units together to provide rigid installation.
- E. Install sloping tops and metal fillers using concealed fasteners. Provide flush hairline joints against adjacent surfaces.

- F. Install front bases between legs without overlap or exposed fasteners. Provide end bases on exposed ends.
- G. Install benches by fastening bench tops to pedestals and securely anchoring to the floor using appropriate anchors for the floor material.

3.03 ADJUSTING AND CLEANING

- A. Adjust doors and latches to operate without binding. Verify that latches are operating satisfactorily.
- B. Adjust built-in locks to prevent binding of dial or key and ensure smooth operation prior to substantial completion.
- C. Touch-up with factory-supplied paint and repair or replace damaged products before substantial completion.

3.04 PROTECTION

- A. Protect installed products until completion of project.

END OF SECTION

Penco Products, Inc. reserves the right to vary specifications consistent with a policy of continuous product improvement.