
PART 1 GENERAL**1.1 RELATED DOCUMENTS**

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

1.2 SUMMARY

- A. This Section includes Section Includes:
1. Standard-duty wire mesh partitions.
 2. Wire mesh bike storage lockers.
 3. Wire mesh equipment barriers.
- B. Related Sections:
1. Division 1 Section "Sustainable Design Requirements".
 2. Division 3 Section "Cast-in-Place Concrete" for building anchors into concrete construction for wire mesh partitions.

1.3 DEFINITIONS

- A. As defined in ASTM E 2016:
1. Intermediate Crimp: Wires pass over one and under the next adjacent wire in both directions, with wires crimped before weaving and with extra crimps between the intersections.
 2. Lock Crimp: Deep crimps at points of the intersection that lock wires securely in place.

1.4 QUALITY ASSURANCE

- A. The work of this section shall be performed by a company which specializes in the type of wire mesh partitions work required for this Project, with a minimum of 5 years of documented successful experience and shall be performed by skilled workmen thoroughly experienced in the necessary crafts.
1. Work shall be performed in compliance with Owner's insurance underwriters' requirements, and UL approvals and testing for materials, assemblies and procedures.
- B. Manufacturer shall specialize in manufacturing the type of wire mesh partitions specified in this section, with a minimum of 5 years of documented successful experience, and have the facilities capable of meeting all requirements of Contract Documents as a single-source responsibility and warranty.
- C. Installer Qualifications: Fabricator of products.
1. Installer's responsibilities include fabricating and installing wire mesh items and providing professional engineering services needed to assume engineering responsibility.
 2. Engineering Responsibility: Preparation of data for wire mesh items, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- D. Source Limitations: Obtain wire mesh items from single source from single manufacturer.
- E. Welding Qualifications: Qualify procedures and personnel according to the following:
1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 2. AWS D1.3, "Structural Welding Code - Sheet Steel."
- F. Preinstallation Conference: Conduct conference at Project site.
- G. Manufacturer's identification tags or marks are not acceptable on surfaces which will remain exposed to view after installation.
1. Evidence of "patching" after removal of tags or marks is not acceptable.

1.5 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design wire mesh units, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

- B. Structural Performance: Wire mesh units shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to SEI/ASCE 7:
 - 1. Seismic Loads: As indicated on Structural drawings.
- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.6 SUBMITTALS

- A. Submit the following according to Conditions of the Construction Contract and Division 1 Specification Sections.
- B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for wire mesh items.
- C. LEED Submittals:
 - 1. LEED Submittal: MRc4 list all materials with recycled content indicating material cost broken out by post-industrial (pre-consumer) and post-consumer content. Only include data for materials permanently installed on the project site.
 - 2. LEED Submittal: EQc4.2 – Provide product data for all paints and coatings used inside the waterproofing system and applied on site with a printed statement of VOC content in g/L.
- D. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Include clearances required for operation of doors and gates.
- E. Setting Drawings: For anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry.
- F. Samples for Initial Selection: For units with factory-applied color finishes.
- G. Samples for Verification: 12-by-12-inch (300-by-300-mm) panel constructed of specified frame members and wire mesh. Show method of finishing members at intersections.
- H. Delegated-Design Submittal: For wire mesh units indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- I. Qualification Data: For qualified Installer.
- J. Welding certificates.
- K. Maintenance Data: For wire mesh unit hardware to include in maintenance manuals.
- L. Hazardous Materials Notification: In the event no product or material is available that does not contain asbestos, PCB or other hazardous materials as determined by the Owner, a "Material Safety Data Sheet" (MSDS) equivalent to OSHA Form 20 shall be submitted for that proposed product or material prior to installation.
- M. Asbestos and PCB Certification: After completion of installation, but prior to Substantial Completion, Contractor shall certify in writing that products and materials installed, and processes used, do not contain asbestos or polychlorinated biphenyls (PCB), using format in Article 3 of General Conditions".

1.7 DELIVERY, HANDLING, STORAGE

- A. Comply with General Conditions and Division 1 Section "Product Requirements."
- B. Deliver wire mesh items with cardboard protectors on perimeters of panels and doors and with posts wrapped to provide protection during transit and Project-site storage. Use vented plastic.
- C. Inventory wire mesh partition door hardware on receipt and provide secure lockup for wire mesh partition door hardware delivered to Project site.
 - 1. Tag each item or package separately with identification and include basic installation instructions with each item or package.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of construction contiguous with wire mesh units by field measurements before fabrication.

1.9 WARRANTY

- A. Comply with General Conditions and Division 1 Section "Product Requirements."

1.10 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Door Locks: Equal to 5 percent of amount installed for each type indicated.

PART 2 PRODUCTS**2.1 UNAUTHORIZED MATERIALS**

- A. Materials and products required for work of this section shall not contain asbestos, polychlorinated biphenyls (PCB) or other hazardous materials identified by the Owner.

2.2 ACCEPTABLE MANUFACTURERS

- A. Products of the manufacturers specified in this section establish the minimum functional, aesthetic and quality standards required for work of this section:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. American Woven Wire Corporation.
 2. California Wire Products Corporation.
 3. Folding Guard Corporation.
 4. G-S Company (The).
 5. Kenco Wire and Iron Products Inc.
 6. King Wire Partitions, Inc.
 7. Miller Wire Works, Inc.
 8. Newark Wire Works Inc.
 9. Wire Crafters, LLC.
- C. Substitutions: Comply with General Conditions using form in Division 1 Section "Substitution Request Form."

2.3 MATERIALS

- A. Steel Wire: ASTM A 510 (ASTM A 510M).
- B. Steel Plates, Channels, Angles, and Bars: ASTM A 36/A 36M.
- C. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B.
- D. Steel Pipe: ASTM A 53/A 53M, Schedule 40 unless another weight is indicated or required by structural loads.
- E. Square Steel Tubing: ASTM A 500, cold-formed structural-steel tubing.
- F. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B; with G60 (Z180) zinc (galvanized) or A60 (ZF180) zinc-iron-alloy (galvannealed) coating designation.
- G. Panel-to-Panel Fasteners: Manufacturer's standard steel bolts, nuts, and washers.
- H. Postinstalled Expansion Anchors: With capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.
1. Carbon Steel: Zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (0.005 mm) for Class SC 1 service condition (mild).
 2. Stainless Steel: ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 (ASTM F 738M and ASTM F 836M, Alloy Group 1 or 4), for bolts and nuts; ASTM A 276 or ASTM A 666, Type 304 or 316, for anchors.

3. For Postinstalled Anchors in Concrete: Capability to sustain, without failure, a load equal to four times the loads imposed.
 4. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to six times the loads imposed.
- I. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated and fabricated from corrosion-resistant materials; with clips or other accessory devices for attaching hangers of type indicated, and with capability to sustain, without failure, a load equal to [10] <Insert number> times that imposed by wire mesh construction, as determined by testing per ASTM E 1190, conducted by a qualified testing and inspecting agency.
 - J. Seismic Bracing: Angles with legs not less than 1-1/4 inch (32 mm) wide, formed from 0.04-inch- (1-mm-) thick, metallic-coated steel sheet; with bolted connections and 1/4-inch- (6-mm-) diameter bolts.
 - K. Zinc-Rich Primer: Compatible with topcoat, complying with SSPC-Paint 20 or SSPC-Paint 29.
 - L. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.
 - M. Recycled Content: For materials containing post-industrial (pre-consumer) and/or post-consumer recycled content, Contractor shall document the cost and percentage (by weight) of each material broken out by post-industrial (pre-consumer) and post-consumer content.
 - N. VOC Content: Paints and coatings used inside the waterproofing system and applied on site shall have VOC content equal to or less than the applicable VOC limits. Refer to Division 1 Section "Sustainable Design Requirements" for additional information.

2.4 STANDARD-DUTY WIRE MESH PARTITIONS

- A. Mesh: 0.135-inch- (3.5-mm-) diameter, intermediate-crimp steel wire woven into 1-1/2-inch (38-mm) diamond mesh.
- B. Vertical Panel Framing: 1-1/4-by-5/8-by-0.097-inch (32-by-16-by-2.5-mm) cold-rolled, C-shaped steel channels with 1/4-inch- (6-mm-) diameter bolt holes spaced not more than 18 inches (450 mm) o.c. along center of framing.
- C. Horizontal Panel Framing: 1-by-1/2-by-1/8-inch (25-by-13-by-3-mm) cold-rolled steel channels.
- D. Horizontal Panel Stiffeners: 2 cold-rolled steel channels, not less than 1 by 3/8 by 1/8 inch (25 by 9.5 by 3 mm), bolted or riveted toe to toe through mesh or 1-by-1/2-by-1/8-inch (25-by-13-by-3-mm) cold-rolled steel channels with wire woven through.
- E. Top Capping Bars: 2-1/4-by-1-inch (57-by-25-mm) cold-rolled steel channels.
- F. Posts for 90-Degree Corners: 1-1/4-by-1-1/4-by-1/8-inch (32-by-32-by-3-mm) steel angles with 1/4-inch- (6-mm-) diameter bolt holes aligning with bolt holes in vertical framing; with floor anchor clips.
- G. Posts for Other-Than-90-Degree Corners: Manufacturer's standard steel pipe or tubing with 1/4-inch- (6-mm-) diameter bolt holes aligning with bolt holes in vertical framing.
 1. Partitions up to 12 Feet (3.7 m) High: 1-1/4-inch (32-mm) OD.
 2. Partitions up to 20 Feet (6.1 m) High: 2-1/2-inch (65-mm) OD.
- H. Adjustable Corner Posts: 2, manufacturer's standard steel pipe or tubing posts connected by steel hinges at 36 inches (900 mm) o.c. attached to posts; with 1/4-inch- (6-mm-) diameter bolt holes aligning with bolt holes in vertical framing.
- I. Line Posts: 3-inch-by-4.1-lb (76-mm-by-1.9-kg) or 3-1/2-by-1-1/4-by-0.127-inch (89-by-32-by-3.2-mm) steel channels; with 5-by-18-by-1/4-inch (125-by-450-by-6-mm) steel base plates punched for attachment to floor.
- J. Three- and Four-Way Intersection Posts: 1-1/4-by-1-1/4-inch (32-by-32-mm) tubular steel, with 1/4-inch- (6-mm-) diameter bolt holes aligned for bolting to adjacent panels.

- K. Floor Shoes: Steel, cast iron, or cast aluminum, not less than 2 inches (50 mm) high; sized to suit vertical framing, drilled for attachment to floor, and with set screws for leveling adjustment.
- L. Swinging Doors: Fabricated from same mesh as partitions, with framing fabricated from 1-1/4-by-1/2-by-1/8-inch (32-by-13-by-3-mm) steel channels or C-channels, banded with 1-1/4-by-1/8-inch (32-by-3-mm) flat steel bar cover plates on 4 sides, and with 1/8-inch- (3-mm-) thick angle strike bar and cover on strike jamb.
 - 1. Hinges: Full-surface type, 3-by-3-inch (76-by-76-mm) steel, 1-1/2 pairs per door; bolted, riveted, or welded to door and jamb framing.
 - 2. Cylinder Lock: Mortise type with manufacturer's standard cylinder; operated by key outside and recessed turn knob inside.
- M. Accessories:
 - 1. Adjustable Filler Panels: Not less than 0.060-inch- (1.5-mm-) thick, cold-rolled steel sheet; capable of filling openings from 2 to 12 inches (50 to 300 mm).
 - 2. Wall Clips: Manufacturer's standard, cold-rolled steel sheet allowing up to 1 inch (25 mm) of adjustment.
- N. Finish for Uncoated Ferrous Steel: Baked-enamel finish or unless otherwise indicated.
 - 1. Color: As selected by Architect from manufacturer's full range.

2.5 WIRE MESH BIKE STORAGE LOCKERS

- A. Unit Sizes:
 - 1. Width: 24 inches (914 mm).
 - 2. Depth: 72 inches (1524 mm).
 - 3. Height: 90 inches (2286 mm).
- B. Mesh: 0.135-inch- (3.5-mm-) diameter, intermediate-crimp steel wire woven into 1-by-2-inch (25-by-50-mm) rectangular mesh.
- C. Wall Panels: 1-by-1-inch (32-by-32 mm) steel tube framing on top, bottom, front, and back sides, with wire mesh welded to framing.
 - 1. Horizontal Panel Stiffeners: 3/4-by-1/4-inch (19-by-6-mm) hot-rolled steel flat bars.
- D. Tops: Fabricated from same mesh and framing as doors.
- E. Doors: Fabricated from same mesh as wall panels, with framing fabricated from 1-by-1 inch (32-by-32 mm) steel tubes on 4 sides; with wire mesh welded to framing. Include door strike and padlock hasp.
 - 1. Horizontal Stiffeners for Single-Tier Doors: 3/4-by-1/4-inch (19-by-6-mm) steel flat bars.
 - 2. Hinges: Full-surface type, 2-1/2-by-2-1/2-inch (64-by-64-mm) steel, 1-1/2 pairs per single-tier door and 1 pair per double-tier door; bolted, riveted, or welded to door and jamb framing.
- F. Finish for Uncoated Ferrous Steel: Baked-enamel finish or unless otherwise indicated.
 - 1. Color: As selected by Architect from manufacturer's full range.

2.6 FABRICATION

- A. General: Fabricate wire mesh items from components of sizes not less than those indicated. Use larger-sized components as recommended by wire mesh item manufacturer. As required for complete installation, provide bolts, hardware, and accessories with manufacturer's standard finishes.
 - 1. Fabricate wire mesh items to be readily disassembled.
 - 2. Welding: Weld corner joints of framing and grind smooth, leaving no evidence of joint.
- B. Standard-Duty Wire Mesh Partitions: Fabricate wire mesh partitions with cutouts for pipes, ducts, beams, and other items indicated. Finish edges of cutouts to provide a neat, protective edge.
 - 1. Mesh: Securely clinch mesh to framing.
 - 2. Framing: Fabricate framing with mortise and tenon corner construction.
 - a. Provide horizontal stiffeners as indicated or, if not indicated, as required by panel height and as recommended by wire mesh partition manufacturer. Weld horizontal stiffeners to vertical framing.
 - b. Fabricate three- and four-way intersections using manufacturer's standard connecting clips and fasteners.
 - c. Fabricate partition and door framing with slotted holes for connecting adjacent panels.

3. Fabricate wire mesh partitions with 3 inches (76 mm) of clear space between finished floor and bottom horizontal framing.
 4. Fabricate wire mesh partitions with bottom horizontal framing flush with finished floor.
 5. Doors: Align bottom of door with bottom of adjacent panels.
 - a. For doors that do not extend full height of partition, provide transom over door, fabricated from same mesh and framing as partition panels.
 6. Hardware Preparation: Mortise, reinforce, drill, and tap doors and framing as required to install hardware.
- C. Wire Mesh Storage Lockers: Fabricate initial storage locker with front and two sides. Fabricate additional storage lockers as add-on units, designed to share one side with initial storage locker.
1. Fabricate wall panel and door framing with slotted holes for connecting adjacent panels.
 2. Prehang doors in factory.

2.7 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

2.8 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 1. ASTM A 123/A 123M, for galvanizing steel and iron components.
 2. STM A 153/A 153M, for galvanizing steel and iron hardware.
 3. Preparation for Shop Priming: After galvanizing, thoroughly clean wire mesh components of grease, dirt, oil, flux, and other foreign matter, and treat with metallic-phosphate process.
- B. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of installed metal fabrications:
 1. Exteriors (SSPC Zone 1B) and Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- C. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete or masonry, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
- D. Baked-Enamel or Powder-Coat Finish: Immediately after cleaning and pretreating, apply manufacturer's standard 2-coat, baked-on finish, suitable for use indicated, consisting of prime coat and thermosetting topcoat, with a minimum dry film thickness of 1 mil (0.025 mm) for topcoat.
 1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine floors for suitable conditions where wire mesh items will be installed.
- C. Examine walls to which wire mesh items will be attached for properly located blocking, grounds, and other solid backing for attachment of support fasteners.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 WIRE MESH PARTITIONS ERECTION

- A. Anchor wire mesh partitions to floor with 3/8-inch- (9.5-mm-) diameter, postinstalled expansion anchors at 12 inches (305 mm) o.c. through floor shoes located at each post and corner. Adjust wire mesh partition posts in floor shoes to achieve level and plumb installation.
 - 1. Anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.
- B. Anchor wire mesh partitions to walls at 12 inches (305 mm) o.c. through back corner panel framing and as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 - 2. For hollow masonry anchorage, use toggle bolts.
 - 3. For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed reinforcements using self-tapping screws of size and type required to support structural loads.
- C. Secure top capping bars to top framing channels with 1/4-inch- (6-mm-) diameter "U" bolts spaced not more than 28 inches (700 mm) o.c.
- D. Provide line posts at locations indicated or, if not indicated, as follows:
 - 1. On each side of sliding door openings.
 - 2. For partitions that are 7 to 9 feet (2.1 to 2.7 m) high, spaced at 15 to 20 feet (4.6 to 6.1 m) o.c.
 - 3. For partitions that are 10 to 12 feet (3.0 to 3.7 m) high, located between every other panel.
 - 4. For partitions that are more than 12 feet (3.7 m) high, located between each panel.
- E. Provide seismic supports and bracing as indicated or, if not indicated, as recommended by manufacturer and as required for stability, extending and fastening members to supporting structure.
- F. Where standard-width wire mesh partition panels do not fill entire length of run, provide adjustable filler panels to fill openings.
- G. Install doors complete with door hardware.
- H. Install service windows complete with window hardware.
- I. Bolt accessories to wire mesh partition framing.

3.3 WIRE MESH STORAGE LOCKERS ERECTION

- A. Anchor wire mesh storage lockers to floor with 3/8-inch- (9.5-mm-) diameter, expansion anchors at 12 inches (305 mm) o.c. through bottom panel framing. Shim panel framing as required to achieve level and plumb installation.
 - 1. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if indicated on Shop Drawings.
- B. Anchor wire mesh storage lockers to walls at 12 inches (305 mm) o.c. through back corner panel framing and as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 - 2. For hollow masonry anchorage, use toggle bolts.
 - 3. For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed reinforcements using self-tapping screws of size and type required to support structural loads.
- C. Attach adjacent wire mesh storage lockers to each other through side panel framing.
- D. Install doors complete with door hardware.

3.4 ADJUSTING AND CLEANING

- A. Adjust doors to operate smoothly and easily, without binding or warping. Adjust hardware to function smoothly. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Remove and replace defective work including doors and framing that are warped, bowed, or otherwise unacceptable.

- C. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
- D. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION