SECTION 10 22 13 / 10605

 EXPANDED METAL MESH SECURITY CAGES AND PARTITIONS

\*\* NOTE TO SPECIFIER \*\* Niles Fence and Security Products, LLC; Fencing and Security Fencing.
 This section is based on the products of Niles Fence and Security Products, LLC, which is located at:
 310 N. Pleasant Ave., PO Box 191.
 Niles, OH 44446.
 Toll Free Tel: 800-321-7464.
 Tel: 330-652-0743.
 Fax: 330-299-0329.
 Email: info@nilesfence.com .
 Web: [www.nilesfence.com.](http://www.nilesfence.com.)
 Niles Fence & Security, LLC manufactures and distributes the SECUREX line of expanded metal mesh fence and security systems. Our comprehensive list of expanded metal fence systems for industry have a range of applications from the highest level of security to perimeter demarcation. SECUREX fence systems were designed for strength, durability and aesthetic appeal featuring clean lines and easy installation. Niles Fence and Security offers a series of fence systems available for site security including SECUREX fence framework and fittings, expanded metal mesh, security gates, and machine guard safety railing.

1. GENERAL
	1. SECTION INCLUDES
		1. Expanded metal mesh partitions and cages.
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Add other sections as required.

* + 1. Section 09 90 00 – Paints and Coatings.
	1. SUBMITTALS
		1. Product Data: Manufacturer's data sheets on each product to be used, including details and drawings.
		2. Shop Drawings: Provide Plan, Section, and Elevation drawings as necessary to depict actual products specified, proper design considerations, and installation procedures. Coordinate partition or cage locations with the contract drawings.
		3. Keys: Submit keys for door locks to Owner at substantial completion of the project.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of five (5) years experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation. Materials shall be stored in such a manner to ensure proper ventilation and drainage and protect against damage, weather, vandalism and theft.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Niles Fence and Security Products, LLC, which is located at: 310 N. Pleasant Ave. P. O. Box 191 ; Niles, OH 44446; Toll Free Tel: 800-321-7464; Tel: 330-652-0743; Facsimile 330-299-0329; or (info@nilesfence.com); Web: [www.nilesfence.com](http://www.nilesfence.com)
	2. EXPANDED METAL SECURITY CAGES AND PARTITIONS
		1. Product: SX3000 Expanded Metal Security Cages - Cages and Partitions shall be built with a series of expanded metal panels bolted together to meet project configuration requirements. Expanded metal panels consist of horizontal and vertical members welded at all corners, with expanded metal mesh securely welded to frame. Stiffener bars, when required, shall be added at engineered locations. Partitions and cages shall have a 3-1/4” sweep space.

\*\* NOTE TO SPECIFIER \*\* Select Expanded Metal fabric mesh from the following options Delete the remaining options.

* + 1. Expanded Metal Security Mesh Panels: Expanded Steel.
			1. Type: 1/2 inch #13R.
				1. Strand Width: 0.096 inches (2.4mm).
				2. Strand Thickness: 0.090 inches (2.3mm).
				3. SWD: 0.50 inches (12.7mm).
				4. LWD: 1.2 inches (30.5mm).
				5. Percent Open Area: 57.
				6. Weight per sq. foot: 1.47 lbs (0.66 Kg).
			2. Type: 1/2 inch #13F
				1. Strand Width: 0.107inches (2.71mm).
				2. Strand Thickness: 0.078 inches (1.98mm).
				3. SWD: 0.50 inches (12.7mm).
				4. LWD: 1.25 inches (31.75mm).
				5. Percent Open Area: 52.
				6. Weight per sq. ft: 1.40 lbs (.63 Kg).
			3. Type: 3/4 inch #9R.
				1. Strand Width: 0.150 inches (3.8mm).
				2. Strand Thickness: 0.134 inches (3.4mm).
				3. SWD: 0.923 inches (23.4mm).
				4. LWD: 2.0 inches (51mm).
				5. Percent open area: 68.
				6. Galvanized weight per sq. foot: 1.80 lbs (0.81 Kg).
			4. Type: 3/4 inch #9F
				1. Strand Width: 0.165 inches (4.1mm).
				2. Strand Thickness: 0.120 inches (3mm).
				3. SWD: 0.923 inches (23.4mm).
				4. LWD: 2.10 inches (53.3mm).
				5. Percent Open Area: 63.
				6. Weight per sq. foot: 1.71 lbs. (.77Kg).
			5. Type: 1 1/2 inch #9R.
				1. Strand Width: 0.144 inches (3.7mm).
				2. Strand Thickness: 0.134 inches (3.4mm).
				3. SWD: 1.3 inches (33mm).
				4. LWD: 3 inches (76mm).
				5. Percent Open Area: 76.
				6. Weight per sq. foot: 1.20 lbs (0.54 Kg).
			6. Type: 1 1/2 inch #9F.
				1. Strand Width: 0.158 inches (4mm).
				2. Strand Thickness: 0.110 inches (2.8mm).
				3. SWD: 1.33 inches (33mm).
				4. LWD: 3.20 inches (81mm).
				5. Percent Open Area: 75.
				6. Weight per sq. foot: 1.14 lbs (.51Kg).
		2. Cage and Partition Panels: Prefabricated panels consisting of horizontal and vertical members shall include the following:
			1. Horizontal Frames: 1-1/4 inches (32 mm) by 1-1/4 inches (32 mm) by 1/8 inch (3 mm) hot rolled angle, with 1-1/4 inches (32 mm) by 7/16 inch (11 mm) slotted holes punched approximately 24 inches (610 mm) O.C.
			2. Vertical Frames: 1-1/4 inches (32 mm) by 1-1/4 inches (32 mm) by 1/8 inch (3 mm) hot rolled angle notched at both ends. Two 1-1/4 inches (32 mm) by 7/16 inch (11 mm) slotted holes punched approximately 24 inches (610 mm) O.C.

NOTE TO SPECIFIER \*\* Delete any of the following if not required.

* + - 1. Stiffener Bar: 1/4 inch (6 mm) by 3/4 inch (19 mm) thick hot rolled flat stock, center located and tack welded to wire mesh and horizontal frames on panels 1 foot (305 mm) to 5 feet (1524 mm) long. Panels 6 feet (1829 mm) to 10 feet (3048 m) long shall have two stiffeners bars.
			2. Flex Panels: Two 8 inches (203 mm) -16 gauge .0598 inch (1.5 mm) sheet steel punched and formed.
			3. Sheet Metal Base - 16 gauge .0598 inch (1.519 mm) hot-rolled sheet metal.
			4. Hardware: 5/16 inch (8 mm) flanged hex head bolts and nuts for all panel-to-panel, panel/door to post connections. Field bracing, floor, and wall anchors by contractor.
		1. Posts
			1. Corner post: 2 inches (51 mm) by 2 inches (51 mm) by 14 gauge .0747 (1.897 mm) square tube with 2 inches (51 mm) by 7 inches (178 mm) (178 mm) by 1/4 inch (6 mm) steel flat base plate punched to accept two 3/8 inch (9.5 mm) diameter anchors. A series of 5/16 inch (8 mm) diameter holes are drilled on all four sides to accept all hardware for panels and doors.
			2. Adjustable Corner post: Four 3 inches (76 mm) by 3 inches (76 mm) butt hinges welded to two 2 inches (51 mm) by 2 inches (51 mm) square tubes with 2 inches (51 mm) by 4-1/2 inches (114 mm) base plates punched to accept 3/8 inch (9.5 mm) diameter anchors. Can adjust to angles other than 90 degrees.
			3. Line/Run post: 2 inches (51 mm) by 2 inches (51 mm) by 14 gauge .0747 inch (1.897 mm) square tube with 2 inches (51 mm) by 7 inches (178 mm) by 1/4 inch (6 mm) steel flat base plate punched to accept two 3/8 inch (9.5 mm) diameter anchors. A series of 3/8 inch (9.5 mm) diameter holes are drilled through two sides to accept all hardware for panels.
			4. Door post: 2 inches (51 mm) by 2 inches (51 mm) by 14 gauge .0747 inch (1.897 mm) square tube with 2 inches (51 mm) by 7 inches (178 mm) by 1/4 inch (6 mm) steel flat base plate punched to accept two 3/8 inch (9.5 mm) diameter anchors. A series of 3/8 inch (9.5 mm) diameter holes are drilled on all four sides to accept all hardware for panels and doors.
			5. 3-Way Post: 2 inches (51 mm) by 2 inches (51 mm) by 14 gauge .0747 inch (1.897 mm) square tube with 2 inches (51 mm) by 7 inches (178 mm) by 1/4 inch (6 mm) steel flat base plate punched to accept two 3/8 inch (9.5 mm) diameter anchors. A series of 3/8 inch (9.5 mm) diameter holes are drilled on all four sides to accept all hardware for panels.
		2. Doors and Windows
			1. Hinge Doors: Constructed of the same materials as panels. Complete with all necessary mounting and locking hardware to install and operate.
				1. Hinges: Three 3 inches (76 mm) by 3 inches (76 mm) butt hinges, attached to adjacent post and door frame.

\*\* NOTE TO SPECIFIER \*\* Delete lock type not required.

* + - * 1. Padlock Arrangement: 1-1/2 inches (38 mm) lug; secured to adjacent lock side post and protrudes through slotted hole in door frame.
				2. Cylinder Lock: Mortise type with keyed different cylinder operated by key outside and recessed knob inside.
			1. Slide Doors: Constructed of the same materials as panels. Complete with all necessary mounting and locking hardware to install and operate.
				1. Hardware: Two 2-wheel trolleys rolling in an enclosed track, 45 inches (1143 mm) bottom door guide, and heavy-duty 30 inches (762 mm) lock receiver.
				2. Padlock Arrangement: 4 inches (102 mm) by 6 inches (152 mm) cover plate with 1-1/2 inches (38 mm) lug securing into lock opening.
				3. Cylinder Lock: Mortise type with keyed different cylinder operated by key outside and recessed knob inside.
			2. Service Window (slide-up type): 24 inches (610 mm) wide by 21-1/2 inches (546 mm) high opening with 22 inches (559 mm) wide by 18 inches (457 mm) deep, #6 W&M Gauge .192 inch (4.9 mm) shelf centered in opening. Secured to base with four 1-1/4 inches (32 mm) by 12 inches (305 mm) long brackets secured by 1/4 inch (6 mm) by 1/2 inch (13 mm) hex head bolts and nuts. Window panel constructed of the same materials as standard panels and has spring bolt latches welded at bottom corners for securing in the open position.
			3. Service Window (fold-down type): 24 inches (610 mm) wide by 15 inches (381 mm) high opening with a 23-1/2 inches (597 mm) by 15-3/4 inches (400 mm) by #6 gauge .192 inch (4.9 mm), deep shelf. The sheet metal shelf is hinged at the bottom with a padlock hasp and can be folded up for padlock security when not in use.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Wire Mesh Ceilings:
			1. Ceiling Panels: Fabricated from same mesh, framing and reinforcement bars as panels above.
			2. Perimeter Angle: 1-1/2 inches (38 mm) by 1-1/2 inches (38 mm) by 14 gauge .0747 inch (1.897 mm) galvanized angle; punched for bolting to top of wire mesh wall panels and to sides of wire mesh ceiling panels.
			3. Wall Supports: 1-1/2 inches (38 mm) by 1-1/2 inches (38 mm) by 14 gauge .0747 inch (1.897 mm) galvanized angle, punched for securing to existing walls and supporting wire ceiling panels.
			4. Intermediate Beam Support: 2 inches (51 mm) by 4 inches (102 mm) by 14 gauge .0747 inch (1.897 mm) rectangular tube for use in spans exceeding 10 feet (3048 mm) in any two directions.
			5. Intermediate Beam Support Post: 2 inches (51 mm) by 2 inches (51 mm) by 14 gauge .0747 inch (1.897 mm) square tube with 4 inches (102 mm) by 7 inches (178 mm) (178 mm) by 3/16 inch (5 mm) base plate (will accept 3/8 inch (9.5 mm) diameter anchors) 4 inches (102 mm) by 7 inches (178 mm) plate at top for support of beams.

2.3 CAGE AND PARTITION FINISHES

\*\* NOTE TO SPECIFIER \*\* Delete one paragraph and choose color if required.

* + 1. Color Coated Finish shall be Securex two stage Phosphate wash with a standard 2 mil (.05mm) Polyester Powder coat finish.
			1. Securex Gray
			2. Securex Black
			3. Securex Green
			4. Securex Blue
			5. Securex Yellow
			6. Securex Red
			7. Securex custom color
		2. Galvanized Finish:
			1. Material shall be Hot Dip Galvanized per ASTM A123.

PART 3 EXECUTION

3.1 EXAMINATION

* + 1. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
	1. INSTALLATION
		1. Install in accordance with manufacturer’s instructions.
		2. Install partitions and gates plumb and level, accurately fitted, properly aligned, securely fastened and free from distortion or defects.
		3. Adjust doors and service windows for smooth and easy operation.
		4. Install field bracing as necessary (not furnished by mesh partition manufacturer) to provide rigid, secure installation.
	2. TOLERANCES
		1. Maximum variation from Plumb or Level: 1/4 inch (6mm) in total partition height.
	3. PROTECTION
		1. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION