



## SECTION 32 94 00

### STAINLESS STEEL CABLE PLANT SUPPORT SYSTEM

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#### PART 1 GENERAL

##### 1.01 SUMMARY

A. Section Includes:

1. Stainless Steel Wire Rope Assemblies
2. Stainless Steel Fittings, Anchors, Hardware, and Accessories

B. Related Sections:

1. Section 4 - Masonry Anchoring and Reinforcing
2. Section 5 - Metal Stairs
3. Section 5 - Metal Railings
4. Section 5 – Stainless Steel Wire Rope Assemblies
5. Section 6 – Wood Stairs and Railings
6. Section 32 – Site Improvements
7. Section 32 – Planting Accessories

##### 1.02 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Society for Testing and Material (ASTM International)

1. ASTM A380 - Practice for Cleaning and Descaling Stainless Steel Parts, Equipment and Systems.
2. ASTM A492 - Specification for Stainless Steel Rope Wire.

3. ASTM A554 – Welded Stainless Steel Mechanical Tubing.
  4. ASTM A554 – Specification for Welded Stainless Steel Mechanical Tubing
  5. ASTM A555 - Stainless Steel Wire.
  6. ASTM E985 – Standard Specification for Permanent Metal Railing Systems and Stairs for Buildings
  7. ASTM F1145 - Specification for Turnbuckles, Swaged, Welded, Forged.
- C. Military Specification (MIL)
1. MIL-C-5688 - Pre-Stretching and Proof-Testing of Wire Rope Assemblies.
  2. MIL-W-83420 - Wire Rope, Flexible for Aircraft Control.
  3. MIL-W-87161 – Wire Stranded, Non Flexible for Aircraft Control. Oil Free Condition.

### 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide Stainless Steel Cable Railing System and mounting hardware which have been manufactured and installed to meet or exceed manufacturer's and project performance criteria.

### 1.04 SUBMITTALS

- A. Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit Manufacturer's product data sheet for specified products.
- C. Shop Drawings: Show layout, sizes, dimensions, details, and installation of railing frame components. Include Details of rope attachment, tensioning methods, hardware, and tensioning and mounting methodology.
- D. Samples: Submit samples of rope and/or hardware, as required by specifier.
- E. Quality Assurance/Control Submittals:
1. Test reports: Submit any test report demonstrating compliance with intended use and code requirements.
  2. Certificates: Submit manufacturer's certificate that product meets or exceeds specified requirements
- F. Closeout Submittals: Submit the Following:
1. Warranty: Submit manufacturer's standard warranty documents
  2. Maintenance Data: Include manufacturer's standard cleaning and maintenance instructions to avoid detrimental actions to finishes and performance.

## 1.05 QUALITY ASSURANCE

### A. Qualifications:

1. Installer Qualifications: Installer should be experienced in performing work of this section and should have specialized in installation of work similar to that required for this project.

### B. Regulatory Requirements and Approvals:

1. [Code Agency Name]
  - a) [Report or Approval Description]

### C. Mock-Ups: Mock-Ups: Install at project site or appropriate location a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's approval of product, application, and workmanship standards. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

1. Mock-Up Size: [Specify mock-up size and fixation requirements].
2. Maintenance and Disposal: Maintain mock-up during construction for workmanship comparison.
  - a) Removal: Remove and legally dispose of mock-up when no longer required.
  - b) Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

### D. Pre-Installation Meetings: Conduct with [Contractor, Architect, Fabricator, Installer and any other subcontractors] whose work involves cable railing system to verify project requirements, framing and support conditions, mounting surfaces, manufacturer's installation instructions, and warranty requirements. Comply with Division 1 requirements.

## 1.06 DELIVERY, STORAGE, AND HANDLING

### A. General: Comply with Division 1 Product Requirements Sections Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

### B. Delivery: Deliver in manufacturer's original, unopened, undamaged containers, identification labels intact.

### C. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer. Store cartons and panels in a secure location in a dry place at the project site.

## 1.07 WARRANTY

### A. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official.

## PART 2 PRODUCTS

## 2.01 FACADESCAPE™ STAINLESS STEEL CABLE PLANT SUPPORT SYSTEM

- A. Manufactured and sold by: Carl Stahl DécorCable Innovations, Inc., 8080 South Madison Street, Burr Ridge, IL USA 60527. Tel: 312-474-1100, Fax: 312-474-1789, E: [sales@decorable.com](mailto:sales@decorable.com), Web: [www.decorable.com](http://www.decorable.com).
- B. Proprietary Products/Systems: FacadeScape™ Brand Stainless Steel Cable Plant Support System.
1. Material:
    - a) Cable: ASTM A492 Type 316 4mm Ø 4mm stainless steel 7x7 wire rope.
    - b) Fittings, Anchors, Hardware, and Accessories: AISI 304, 316 or 316L stainless steel.
  2. Rope End Fittings, Terminals, and Tensioners:
    - a) External Thread-Swaged RH Stock #850, LH Stock #855.
    - b) External Thread F30 Hammer Swaged-RH Stock #950, LH Stock#951
    - c) External Thread F50 Hammer Swaged-RH Stock #948, LH Stock#949
    - d) External Thread-Field Installed RH Stock #850, LH Stock #850.
    - e) Internal Thread-Swaged RH Stock #860, LH Stock #861.
    - f) Internal Thread-Field Installed RH Stock #860, LH Stock #860.
    - g) Swaged Fork (Clevis) -Stock #881
    - h) Fork with Internal Thread-Swaged RH Stock #812, LH Stock #811.
    - i) Fork and Swage w/Turnbuckle -Stock #870
    - j) Swaged Eye-Stock #880
    - k) Eye with Internal Thread-Swaged RH Stock #814, LH Stock #813.
    - l) Eye and Swage w/Turnbuckle -Stock #889
    - m) Compressed Loop w/o Thimble-Stock #801/803
    - n) Compressed Loop w/ Thimble-Stock #802/804
    - o) Loop Clamp w/ Thimble-Stock #874
    - p) Turnbuckle with Swaged External Thread ends Stock #829
    - q) Turnbuckle with F30 Hammer Swaged External Thread ends Stock #829
  3. Support Components:
    - a) Spacer Bar w/M8 Internal Thread-Specify Length-Stock #919.
    - b) Cross Clamp-Specify Length-Stock #919.
    - c) Spacer Bar-Unthreaded 8mm Internal Bore-Specify Length-Stock #919.
    - d) Spacer Bar Support Link-Stock #834
    - e) Clamp Screw for M8 Spacer Bars-Specify Size-Stock #923
    - f) Ground Plate- Unthreaded-Stock #836
    - g) Cover Disk with Internal M8 Threads -Stock #836
    - h) Eye Bolt-Stock #837
    - i) Eye Nut-Stock #838
    - j) Fork Bracket-Stock #834
    - k) SS Adjustable Support to for EIFS facades-Stock #897
    - r) Plastic Pipe Support for EIFS facades-Stock #897-0690
    - s) Sealing Disk for Pipe Support-Stock #897-9
    - t) Sealing Ring for Pipe Support-Stock #897-8
  4. Clamps and Plant Supports:
    - a) 90° Cross Clamp-Stainless Steel-Stock #858
    - b) Adjustable Cross Clamp-Stainless Steel-Stock #858
    - c) Adjustable Cross Clamp w/Internal Threads-Stainless Steel-Stock #858
    - d) Cross Clamp-UV Resistant Plastic-Stock #920

- e) CS Cross Clamp for Large Ropes-Stock #858
- f) Radial Disk with M6 Internal Threads-Stock #897
- g) Climber Stud-UV Resistant Plastic-Stock #924
- h) Rod/Rope Interface with M6 Internal Thread for 8mm Rod-Stock #921-0600-12
- i) Stainless Steel Rod-Ø 4mm-Stock #922-0400
- j) Stainless Steel Rod-Ø 8mm-Stock #922-0800

5. Anchors and Hardware:

- a) Washer-Specify Type-Stock #896
- b) Hex Nut-Specify Type-RH Stock #892, LH Stock #893
- c) Dome Nut-RH -Stock #894
- d) Hex Head Bolt-Stock #843
- e) Socket Head Bolt-Stock #844
- f) Pan Head Screw-Stock #890
- g) Dual Thread Screw-RH Stock #878, LH Stock #877
- h) Rampa Nut for Wood, Stock #803
- i) Threaded Rod (Headless Screw)-RH Stock #882, LH Stock #883
- j) Wall Anchor for Masonry with Internal Thread RH Stock #803
- k) Wall Anchor for Masonry with External Thread RH Stock #803

6. Length:

- a) Provide optimum adjustment in both directions by calculating final tendon lengths with allowance for tensioning fittings with 2/3 open and with 1/3 of thread length engaged.
- b) Measure tendon length from center of pin to center of pin, or center of eye to center of eye.

2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

2.03 FITTINGS AND ACCESSORIES

- A. Accessories: Provide grommet, bushings, nuts, washers, turnbuckles, fittings and other components as required for system installation

2.04 FABRICATION

- A. Stainless Steel Cables and Fittings shall be dimensioned and fabricated to specified size and labeled according to shop drawings and installer's specifications.
- B. Preassemble items in shop to greatest extent practicable to minimize assembly at project site. Disassemble units only to extent necessary for shipping and handling limitations. Mark units for reassembly.

2.05 FINISHES

- A. Clean and/or descale cables and fittings in accordance with ASTM A380.
- B. Passivate in accord with ASTM B912, to provide the following finish: Exterior and Interior: 330 grain satin finish (equiv. to #4 satin finish).

**PART 3 EXECUTION**

### 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

### 3.02 EXAMINATION

- A. Site Verification of Conditions: Verify mounting condition of previously installed surfaces to ensure it is acceptable for product installation in accordance with manufacturer's instructions. Do not begin installation until backup surfaces are in satisfactory condition.

### 3.03 PREPARATION

- A. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate sections.
- B. Take field measurements after permanent end terminations are in place and prior to preparation of shop drawings and fabrication, to ensure fitting of work.

### 3.04 INSTALLATION

- A. Install cable plant support system in accordance with manufacturer's instructions and the approved shop drawings.
- B. Provide anchorage devices and fittings to secure to in-place construction; including threaded fittings for concrete inserts, toggle bolts and through-bolts. Install all rope assemblies plumb, level, square, and taut.
- C. Anchor system to mounting surfaces as indicated on the drawings.
- D. Separate dissimilar materials with bushings, grommets or washers to prevent electrolytic corrosion.
- E. Use manufacturer's supplied mounting hardware.
- F. Terminate and tension cable system in accordance with manufacturer's instructions.
- G. Ensure ropes are clean, and without kinks or sags.
- H. After final adjustment provide tamper resistant locktight materials on all fittings.

### 3.05 CLEANING

- A. Remove temporary coverings and protection of adjacent work areas.
- B. Clean installed products in accordance with manufacturer's instructions before owner's acceptance. Do not use chlorine-based or abrasive cleaners.
- C. Remove from project site and legally dispose of construction debris associated with this work.

### 3.06 PROTECTION

- A. Protection: Protect installed product from damage during subsequent construction activities.

**END OF SECTION**