



## SECTION 05 15 00

### WIRE ROPE ASSEMBLIES-STAINLESS STEEL

Show hidden Specifier Notes for best results

#### PART 1 GENERAL

##### 1.01 SUMMARY

A. Section Includes:

1. I-SYS Stainless Steel Wire Rope Assemblies
2. I-SYS Stainless Steel Fittings, End Terminals, 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 5 – Decorative Metal Railings
6. Section 5 – Rooftop Fall Protection
7. Section 32 – Site Improvements

##### 1.02 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.

##### 1.03 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.

#### 1.04 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: 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.

#### 1.05 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.

## 1.06 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 I-SYS® INOX STAINLESS STEEL WIRE ROPE ASSEMBLIES

- A. Manufactured and sold by: Carl Stahl DécorCable Innovations, Inc., 2401 International Pkwy., Ste. B, Woodridge, IL USA 60517. 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: I-SYS® INOX Brand Stainless Steel Wire Rope Assemblies.

#### 1. Material:

- a) Cable: Type 316 stainless steel 7x7 or 7x19 wire rope, or 1x19 strand.
- b) Fittings, Hardware, and Accessories: AISI 304, 316 or 316L stainless steel

#### 2. Rope Stock Number, Composition, Diameter, Min. Breaking Load (MBL) and MQ (mm<sup>2</sup>):

##### a) General Use 7x7 rope construction:

- 1) #820-0100- Ø 1mm (3/64"), 56 lbs. MBL, .43mm<sup>2</sup> MQ
- 2) #820-0200- Ø 2mm (5/64"), 501 lbs. MBL, 1.71mm<sup>2</sup> MQ
- 3) #820-0300- Ø 3mm (1/8"), 1120 lbs. MBL, 3.85mm<sup>2</sup> MQ
- 4) #820-0400- Ø 4mm (5/32"), 2000 lbs. MBL, 6.85mm<sup>2</sup> MQ
- 5) #820-0500- Ø 5mm (3/16"), 3135 lbs. MBL, 10.70mm<sup>2</sup> MQ
- 6) #820-0600- Ø 6mm (1/4"), 4500 lbs. MBL, 15.42mm<sup>2</sup> MQ
- 7) #820-0800- Ø 8mm (5/16"), 8020 lbs. MBL, 27.40mm<sup>2</sup> MQ

##### b) General Use, High Flexibility 7x19 rope construction:

- 1) #830-0200- Ø 2mm (5/64"), 636 lbs. MBL, 1.66mm<sup>2</sup> MQ
- 2) #830-0300- Ø 3mm (1/8"), 1050 lbs. MBL, 3.73mm<sup>2</sup> MQ
- 3) #830-0400- Ø 4mm (5/32"), 1868 lbs. MBL, 6.63mm<sup>2</sup> MQ
- 4) #830-0500- Ø 5mm (3/16"), 2912 lbs. MBL, 10.36mm<sup>2</sup> MQ
- 5) #830-0600- Ø 6mm (1/4"), 4210 lbs. MBL, 14.92mm<sup>2</sup> MQ
- 6) #830-0800- Ø 8mm (5/16"), 7480 lbs. MBL, 26.53mm<sup>2</sup> MQ
- 7) #830-1000- Ø 10mm (13/32"), 11670 lbs. MBL, 41.45mm<sup>2</sup> MQ

- 8) #830-1200-  $\varnothing$  12mm (15/32"), 16822 lbs. MBL, 59.69mm<sup>2</sup> MQ
- 9) #830-1400-  $\varnothing$  14mm (9/16"), 22848 lbs. MBL, 81.25mm<sup>2</sup> MQ
- 10) #830-1600-  $\varnothing$  16mm (5/8"), 29790 lbs. MBL, 106.12mm<sup>2</sup> MQ

c) General Use, Higher Stiffness and Strength 1x19 stranded construction:

- 1) #810-0200-  $\varnothing$  2mm (5/64"), 736 lbs. MBL, 2.39mm<sup>2</sup> MQ
- 2) #810-0300-  $\varnothing$  3mm (1/8"), 1662 lbs. MBL, 5.37mm<sup>2</sup> MQ
- 3) #810-0400-  $\varnothing$  4mm (5/32"), 2956 lbs. MBL, 9.55mm<sup>2</sup> MQ
- 4) #810-0500-  $\varnothing$  5mm (3/16"), 4614 lbs. MBL, 14.92mm<sup>2</sup> MQ
- 5) #810-0600-  $\varnothing$  6mm (1/4"), 6652 lbs. MBL, 21.49mm<sup>2</sup> MQ
- 6) #810-0800-  $\varnothing$  8mm (5/16"), 11065 lbs. MBL, 38.20mm<sup>2</sup> MQ
- 7) #810-1000-  $\varnothing$  10mm (13/32"), 17292 lbs. MBL, 59.69mm<sup>2</sup> MQ
- 8) #810-1200-  $\varnothing$  12mm (15/32"), 23296 lbs. MBL, 85.95mm<sup>2</sup> MQ
- 9) #810-1400-  $\varnothing$  14mm (9/16"), 29344 lbs. MBL, 116.99mm<sup>2</sup> MQ
- 10) #810-1600-  $\varnothing$  16mm (5/8"), 39424 lbs. MBL, 152.81mm<sup>2</sup> MQ
- 11) #810-1900-  $\varnothing$  19mm (3/4"), 52192 lbs. MBL, 215.48mm<sup>2</sup> MQ
- 12) #810-2200-  $\varnothing$  22mm (7/8"), 66976 lbs. MBL, 288.90mm<sup>2</sup> MQ
- 13) #810-2600-  $\varnothing$  26mm (1/32"), 93184 lbs. MBL, 403.51mm<sup>2</sup> MQ

d) Structural Use, Very High Stiffness/Strength 1x37 or 1x61 stranded construction. May require special hardware and end fittings. Consult catalog or Carl Stahl-DecorCable.

- 1) #610-1600-  $\varnothing$  16mm (5/8"), 1 x 37, 41350 lbs. MBL, 150.80mm<sup>2</sup> MQ
- 2) #610-1800-  $\varnothing$  18mm (23/32"), 1 x 37, 50960 lbs. MBL, 190.80mm<sup>2</sup> MQ
- 3) #610-2200-  $\varnothing$  22mm (7/8"), 1 x 61, 72128 lbs. MBL, 285.10mm<sup>2</sup> MQ
- 4) #610-2600-  $\varnothing$  26mm (1/32"), 1 x 61 99680 lbs. MBL, 398.20mm<sup>2</sup> MQ

3. Swaged and Field Installed End Fittings and Terminals:

- a) Easy Grip Internal Thread – Stock #760, LH #761
- b) Internal Thread Swageless Connection – Stock #831, LH #832
- c) Internal Thread Swivel Swaged – Stock #857
- d) Internal Thread Swaged – Stock #860, LH #861
- e) External Thread Swaged – Stock #850, LH #855
- f) External Thread Swivel Swaged – Stock #856
- g) External Thread F30 Hammered – Stock #948, LH # 949
- h) External Thread F50 Hammered – Stock #950, LH #951
- i) External Thread Roll Swaged – Stock #650, LH #655
- j) Fork Roll Swaged – Stock #681
- k) Turnbuckle With Fork Fitting – Stock #670
- l) Fork With Internal Thread Swaged – Stock #306, LH #307
- m) CS Fork With External Thread Hammered – Stock #346, LH #345
- n) Turnbuckle With Fork Fitting – Stock #670
- o) Fork Roll Swaged – Stock #681
- p) BW Fork Swageless Connection – Stock #754
- q) Fork With Internal Thread Swaged – Stock #812, LH #811
- r) Turnbuckle With Fork Hammered – Stock #870
- s) Turnbuckle With Fork Swaged – Stock #870
- t) Fork Swaged – Stock #881
- u) CS Fork Swaged – Stock #947
- v) Eye With Internal Thread Swaged – Stock #814, LH #813
- w) CS Eye With Internal Thread Swaged - Stock #816, LH #815
- x) Eye Swaged – Stock #880
- y) Turnbuckle With Eye Hammered – Stock #889
- z) Turnbuckle With Eye Swaged – Stock #889

- aa) CS Eye Swaged -Stock #980
- bb) Radius Head With External Thread Hammered – Stock #170
- cc) Countersunk Head With External Thread Hammered – Stock #180
- dd) Ball Head With External Thread Hammered – Stock #190
- ee) End Stop Swaged – Stock #865
- ff) End Stop Countersunk 90° Round Swaged – Stock #866
- gg) End Stop With Countersunk 90° Swaged – Stock #866
- hh) End Stop With radius Head Swaged – Stock #869
- ii) End Stop With Radius Head Round Swaged – Stock #869
- jj) Loop Swaged Without Thimble – Stock #803
- kk) Loop Swaged With Thimble – Stock #804

4. In-Line Tension Devices:

- a) Turnbuckle With Thread Hammered – Stock #110
- b) Turnbuckle With Thread Swaged – Stock #110
- c) Turnbuckle Cylindrical With Thread F30 Hammered – Stock #130
- d) Turnbuckle F50 Hammered – Stock #824
- e) Turnbuckle Swageless Short – Stock #825
- f) Turnbuckle Swageless – Stock #825
- g) Turnbuckle Threads F30 Hammered – Stock #828
- h) Turnbuckle Threads Swaged – Stock #829
- i) Turnbuckle Roll Swaged – Stock #625
- j) Turnbuckle – Stock #675
- k) Turnbuckle With Two Forks – Stock #8712

5. Fittings with External and Internal Threads

- a) External Thread Roll Swaged- Stock #650, LH Stock #655
- b) External Thread Swageless Connection – Stock #826, LH #827
- c) Fork With External Thread – Stock #671, LH #672
- d) Fork With Internal Thread – Stock #817, LH #818
- e) Turnbuckle With Fork Swageless – Stock #870
- f) Fork With External Thread – Stock #871, LH #872
- g) CS Fork With Internal Thread – Stock #917, LH #918
- h) CS Fork With External Thread – Stock #945, LH #946
- i) Eye With Internal Thread – Stock #806, LH #807
- j) Eye With External Thread Bended – Stock #885, LH #886
- k) Eye With External Thread – Stock #885, LH #886
- l) Eye Counterpiece – Stock #887
- m) Eye Bolt – Stock #888
- n) CS Eye With Internal Thread – Stock #906, LH #907
- o) CS Eye With External Thread – Stock #985, LH #986
- p) Countersunk Stop With Internal Thread – Stock #866
- q) Ball Head With Internal Thread – Stock #868
- r) Radius Head End Stop With Internal Thread – Stock #869

6. Clamps, Hardware, Accessories:

- a) Pivot Base For Ball Head Flat Profile – Stock #868
- b) Pivot Base For Ball Head Round Profile – Stock #868
- c) Wire Rope Grip, Heavy TYP – Stock #800
- d) Adjustable Screw On Cross Clamp – Stock #858
- e) Cross Clamp 90° - Stock #858
- f) Cross Clamp Adjustable – Stock #858
- g) Cross Clamp With Internal Thread Adjustable – Stock #858

- h) CS Cross Clamp Adjustable – Stock #858
- i) Cross Clamp With Connection – Stock #858
- j) Screw On Cross Clamp – Stock #858
- k) Cover Disk For Rope Clamp Cone – Stock #859
- l) Rope Clamp Cone – Stock #859
- m) Angle Stand Off Washer – Stock #859
- n) Light Clamp Ring With Adapter – Stock #869
- o) Light Clamp Ring – Stock #863
- p) Two Part Clamp Ring – 873
- q) Light Clamp Ring With Thimble – Stock #874
- r) Loop Clamp Ring With Thimble – Stock #874
- s) Rod/Rope Holder – Stock #921
- t) Rope Guiding Fork Head – Stock #921
- u) Rope Pulley Block – Stock #921
- v) Thimble – Stock #5970
- w) Rod With Both Sides Threaded, RH or LH – Stock #IS
- x) Rampa Screw For Wood – Stock #803
- y) Wall Anchor Z-IG-A4 – Stock #803
- z) Wall Anchor – Stock #803
- aa) Fork Bracket – Stock #834
- bb) Bow Shackle – Stock #835
- cc) Shackle D-Form – Stock #835
- dd) Cover Disk With Internal Thread or Through Hole – Stock #836
- ee) Eye Bolt – Stock #837
- ff) Eye Nut – Stock #838
- gg) Hexagon Head Screw – Stock #843
- hh) Socket Head Screw – Stock #844
- ii) Angle Stand Off Washer For External Thread Flat Profile – Stock #862
- jj) Angle Stand Off Washer For External Thread Round Profile – Stock #862
- kk) Angle Washer For Countersunk End Stop 90° Flat Profile – Stock #862
- ll) Angle Washer For Countersunk End Stop 90° Round Profile – Stock #862
- mm) Loose Sleeve – Stock #864
- nn) Turnbuckle Cylindrical, Left/Right – Stock #875
- oo) Turnbuckle Left/Right – Stock #875
- pp) Thread Sleeve \_ Stock #876
- qq) Dual Thread Screw – Stock #878, LH #877
- rr) Threaded Rod – Stock #882, LH #883
- ss) Headless Screw RH/LH – Stock #884
- tt) Pan Head Screw – Stock #890
- uu) Hexagon Nut – Stock #892, LH 893
- vv) Lock Nut With Nylon Insert – Stock #892
- ww) Dome Nut – Stock #894
- xx) Washer – Stock #896
- yy) Ball End With Internal Thread – Stock #898
- zz) Ball For Internal Thread Radius Head – Stock #899
- aaa) Wire Rope End Cap – Stock #904
- bbb) Washer For Wood – Stock #896
- ccc) Wall Anchor For External Thread – Stock #30803
- ddd) Wall Anchor With Internal Thread – Stock #30803

7. 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.

# 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 condition existing support system which has been previously installed under other sections, 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 rope assemblies 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.
- C. Anchor rope assemblies 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**