

SECTION 32 17 40 – Exterior Improvements - Walk, Road, and Parking Specialties

FlexPost – XL™ - Heavy Duty Flexible Bollard Post System

PART 1 GENERAL

1.01 WORK INCLUDED

Work under this item shall consist of furnishing and installing signpost base, post, and specified anchoring method in accordance with the locations, dimensions, lines, grades, and design specified in the contract documents, approved drawings, and this written specification. Signs, Mailboxes, Bollard covers, or other specialty mounted items may be included as well. Please refer to scope of work listed in bidder's instructions.

1.02 RELATED SECTIONS

Section 10 14 00	Signage
Section 10 55 00	Postal Specialties
Section 11 12 00	Parking Control Equipment
Section 12 93 00	Site Furnishings
Section 32 19 00	Traffic Signs and Signals
Section 32 30 00	Site Improvements
Section 32 41 00	Bollards
Section 34 41 16	Traffic Control Equipment

1.03 SYSTEM DESCRIPTION

Flexpost-XL™ Flexible Bollard Post Systems are designed to support bollard sleeve over applications for site safety and security needs, while providing extended usage as it can withstand repeated low velocity impacts from vehicles. The Flexpost-XL™ is a more robust system that has stronger resistance to vehicle impact. This system provides many installation methods to accommodate varying site conditions. Concrete, Asphalt, or ground installation can be selected to ensure a proper install for every site condition. Drill free options utilizing adhesives are available as well. A variety of brackets and sizes allow for varied options of bollard choices.

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1.04 QUALITY ASSURANCE

During assembly and packaging, each component is thoroughly inspected for specification compliance and consistent manufacture. Once on site, the product installers must have experience installing these products or similar products.

1.05 STANDARDS AND REFERENCES

ASTM A36 – Carbon Structural Steel

ASTM A229 - Standard Specification For Steel Wire, Quenched And Tempered For Mechanical Springs

ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process

ASTM D7803 – Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Powder Coating

ASTM A500 – Steel Structural Tubing in Rounds and Squares

1.06 SUBMITTALS

A. Shop Drawings

- a. Standard product drawings of a single unit post with specification including all dimensions, details, and finishes.
- b. Detailed installation instructions to accommodate any site condition.
- c. Site layouts and placement as per Architectural Site Plan or Parking Plan.

B. Samples (if required)

- a. Samples are not provided, but a single unit may be purchased for review prior to placement of complete order, if required.

1.07 PRODUCT HANDLING AND STORAGE

A. Handling

- a. Product to be handled with care to avoid breakage or damage.

B. Storage

- a. Proper storage includes ventilation, drainage, as well as protection from weather, vandalism, theft, corrosive elements (salt, glycol, solvents, etc.) and any other mitigating factors present.

C. Delivery and Acceptance

- a. Delivery to be done by typical freight and carrier options. Upon receipt of material, visual inspection to insure no damage or defects.

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1.08 WARRANTY

Includes 30-day full unconditional warranty. Extended 1-year product warranty with limitations as detailed in the manufacturer's warranty statement. Product registration is required.

PART 2 PRODUCT DETAILS and MATERIALS

2.01 MANUFACTURER

Basis of Design and Known Manufacturer(s)

Flex Post Inc.
Holland, MI
888-307-6610
Sales@flexpost.net

2.02 MATERIAL COMPONENTS

- A. Base Plate assembly is factory assembled composition of various parts.
 - a. Lower Base Plate is 8" x 8" x .188" stamped base plate with 4 each .65" holes placed .9" from radius corner.
 - b. Upper Support Cap is 5.58" Diameter x .188" stamped cap. Includes 2.81" O.D. (2.42" I.D.) x .188" x 4" round tube welded to center of cap. Also includes 2 set screws tapped through round tube for securing insert post.
 - c. Lower base plate and upper support cap material are galvanized after assembly independently to prevent corrosion.
 - d. ¼" ASTM A229 Spring Steel Torsion Spring x 20" long.
 - e. 2 each - 1.904" Diameter x .13" stamped custom tensioning washer.
 - f. 1 ¼" O.D. PVC insert.
 - g. ¼" x 60" (nom.) stainless steel wire rope with aluminum compression sleeve splices.
 - h. Entire assembly is factory assembled with torsion spring and cable prestressed and ready for easy installation.
- B. Standard interior bollard post
 - a. 2 3/8" round .055" wall galvanized posts x 48 ½" for bollard post only.
- C. Ground anchor options (Please specify or determine based on field conditions)
 - a. Concrete Anchors
 - i. Standard Option - ½" x 4" screw in style galvanized anchors
 - ii. Heavy Duty Option for ½" x 4" SS threaded rod with epoxy
 - iii. Lighter Duty Option for ½" x 4" Mechanical Anchor
 - b. Asphalt Anchors
 - i. Standard Option – ½" x 5" Zinc Coated Steel Bolts and Washers with plastic Receiver Plug. Designed to fasten to all typical asphalt surfaces.

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- ii. Heavy Duty Asphalt Option - Zinc coated heavy-duty 6" long 3/8" female thread, asphalt anchors with bolt/washer. Pull-tested to resist 1,500 lbs. of force in asphalt. Expanding concrete included (2 bags).
 - c. Ground Stake – 18" long black powder coated steel X style ground spike (Recommended to be placed into typical concrete poured foundation for optimum performance.)
- D. Bollard Options (Please Specify or see drawings)
 - a. PVC Bollard Sleeve
 - i. 32" or 52" x 7" Diameter HDPE Bollard with Reflective Tape
 - 1. Bollard sleeve is available in Red, Yellow, Blue, Black
 - 2. Tape Stripe is available in Red, Orange, Yellow, Blue, Black, White
 - 3. All bollards include foam insert for placement around interior support post
 - 4. All standalone bollards include a custom Anti-Rotational Cap with set screw and attachment screw.
 - b. Any other cylindrical material can be used provided it has a 5 3/4" minimum and 6 1/4" maximum inside diameter.

2.03 PERFORMANCE CRITERIA / QUALITY CONTROL

- A. Testing
 - a. All components produced and tested to the standards as purchased to the relative product standard at the point of manufacturer for each item.
- B. Inspection, Repair, and Rejection
 - a. The quality of materials, the process of assembly, and the finished units shall be subject to inspection by the Factory Foreman prior to shipment.
 - b. Any item found deficient in appearance or quality will be discarded. This includes -
 - i. Variations that substantially deviate from the approved model.
 - ii. Dimensions not conforming with tolerance of +/- 1/4" of any specified dimension.
 - iii. Any Defects, which would affect the structural integrity of the unit.
 - c. Small coating defects or minor handling marks to be touched up in factory prior to shipping.
- C. Handling, Storage, and Shipment
 - a. Care shall be taken during storage, transporting, and handling of all units to prevent damage.
- D. Field Performance
 - a. Deflection data
 - i. The following Degree of Deflection requires the subsequent force in Foot Pounds
 - 1. 10 degree – 60 ft/lbf
 - 2. 20 degree – 65 ft/lbf
 - 3. 25 degree – 69 ft/lbf
 - 4. 35 degree – 77 ft/lbf
 - 5. 40 degree – 81 ft/lbf
 - 6. 45 degree – 90 ft/lbf

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PART 3 EXECUTION

3.01 PREPARATION

- A. Site Grading and Preparation
 - a. Surface shall be clean and free of obstruction or debris.
- B. Determine ground anchor option – See material component descriptions
 - a. Concrete Anchors – Used when anchoring to concrete surface minimum 4” thick
 - b. Asphalt Anchors – Used when attaching to asphalt surface minimum 3” thick
 - c. Ground Stake – Used for anchoring to earth, gravel, or other natural surface, recommend inserted into a cylindrical foundation minimum 14” x 42”.

3.02 INSTALLATION AND SETUP

- A. Install desired anchor system, plates, assemble post and attach any above grade chosen options as per manufacturer’s standard installation instructions.
- B. Tolerances
 - a. +/- 1/8” to any prescribed dimensions

3.03 FIELD REPAIRS AND QUALITY CONTROL

- A. Cosmetic repairs can be made at the site using the following methods and materials
 - a. Clean surfaces
 - b. Use Matte Black touch up Paint Pen or galvanized pen where required for coating breaches
 - c. Use Matte Black Spray Paint or Galvanized Spray Paint only when necessary, being sure to protect adjacent assets and property from overspray.

3.04 CLEANING AND MAINTENANCE

Once installed, the Flexible Post System requires minimal maintenance. Make sure product is free from external debris to ensure an extended life span, this includes animal droppings, tree sap, and other environmental factors. Also making sure and vegetation is not growing underneath, immediately adjacent to, or upon the posts. Inspect semi annually for damage and performance. Pushing on the post with minimal force will demonstrate a working spring and properly attached post and signs. Inspect surfaces to identify potential unknown strikes and cosmetic or structural damage. Defective or damaged parts should be immediately replaced.

END OF SECTION