

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | The Aluminum Association (AA)
.1 AA DAF-45-R2009, Designation System for Aluminum Finishes - 9th Edition. |
| | .2 | ASTM International
.1 ASTM A 53/A 53M-12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
.2 ASTM A 123/A 123M-15, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
.3 ASTM A 480/A 480M-16b, Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
.4 ASTM B 241/B 241M-16, Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube. |
| | .3 | Canada Green Building Council (CaGBC)
.1 LEED Canada 2009 for Design and Construction-2010, LEED Canada 2009 for Design and Construction Leadership in Energy and Environmental Design Green Building Rating System Reference Guide. |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Submit in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Product Data:
.1 Submit manufacturer's instructions, printed product literature and data sheets for and include product characteristics, performance criteria, physical size, finish and limitations. |
| | .3 | Shop Drawings:
.1 Indicate dimensions, finishes, base jointing, anchoring and support systems, cleats, halyard boxes, trucks, finials and base collar for flagpoles.
.2 Submit electronic copies of drawings of flagploe and bases, showing general layout, |

1.2 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .3 Shop Drawings: (Cont'd)
 - .2 (Cont'd)
jointing and complete anchoring and supporting systems.
- .4 Samples:
 - .1 Submit finish samples 300 mm x 300 mm.
- .5 Manufacturer's Instructions: submit manufacturer's installation instructions for each type of flagpole.
- .6 Sustainable Design Submittals:
 - .1 LEED Canada - Submittals: in accordance with Section 01 35 21 - LEED Requirements.

1.3 QUALITY
ASSURANCE

- .1 Provide each flagpole as complete unit produced by single manufacturer, including fittings, accessories, bases and anchorage devices.

1.4 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
 - .1 Spiral wrap each flagpole with heavy kraft paper, wood strip and steel band, or polyethylene wrap and pack in tubing for shipment.
 - .2 Ship flagpole to installation site in one piece.
 - .1 When more than one piece is required, provide precision joints with self aligning internal splicing sleeve arrangement.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground, indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

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| 1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd) | .3 | Storage and Handling Requirements: (Cont'd)
.2 Store and protect from nicks, scratches,
and blemishes.
.3 Replace defective or damaged materials
with new. |
| | .4 | Develop Construction Waste Management Plan
related to Work of this Section and in
accordance with Section 01 35 21 - LEED
Requirements. |
| | .5 | Packaging Waste Management: remove for reuse
or return of pallets, crates, padding,
banding, and packaging materials as specified
in Construction Waste Management Plan in
accordance with Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal and Section 01 35 21 - LEED
Requirements. |

PART 2 - PRODUCTS

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| 2.1 MATERIALS | .1 | Galvanized steel: hot dipped galvanizing with
minimum zinc coating 610 g/m ² to
ASTM A 123/A 123M. |
| | .2 | Stainless steel: seamless stainless steel
tubing, AISI type 304. |
| | .3 | Aluminum:
.1 Aluminum Association alloy AA 6063-T6
seamless extruded aluminum tubing.
.2 Fabricated from seamless extruded tubing
in accordance with ASTM B 241, alloy 6063 T6,
having minimum tensile strength not less than
20 MPa and a yield point of 17 MPa. Heat
treated and age hardened after fabrication. |
| | .4 | Fibreglass: polyester and fibreglass woven
cloth, resistant to acids, petroleum and salt
water; flame retardant; colour as selected by
Departmental Representative. |
| | .5 | Isolation coating: alkali-resistant
bituminous paint or epoxy resin solution. |

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- 2.2 DESIGN CRITERIA .1 Flagpole, bases and anchorage devices to resist minimum wind velocity unflagged and flagged to suit the climatic data for wind speed in the National Building Code of Canada.
- .2 Description:
.1 Exposed Height: 7620 mm (25 ft).
.2 Flag Size: 2440 mm x 1220 mm.
- 2.3 FABRICATION .1 Fabricate flagpole as complete unit including base anchorage and fittings.
- .2 Cone tapered flagpole:
.1 Seamless, uniform, straight line tapered section above cylindrical butt section.
.2 Provide internal splicing, self-aligning sleeve of same material as flagpole for snug fitting, watertight field joints.
- .3 Weld in accordance to appropriate CSA Standard, by welders certified by Canadian Welding Bureau. Finish exposed welds flush and smooth.
- 2.4 ACCESSORIES .1 Beaded retainer ring. 25 mm diameter nylon balls strung on 3 mm stainless steel cable. Complete with stainless steel quick links.
- .2 Truck assembly: cast aluminum stainless steel ballbearing, nonfouling, revolving double truck assembly, finish to match flagpole.
- .3 Vinyl covered counter weight to suit installation. Color to match retainer ring beads.
- .4 Halyard: internal, two continuous halyards per flagpole; stainless steel.
- .5 Swivel snaps: two per halyard; stainless steel.
- .6 Winch: gearless and self-locking. Complete with locking cover and removable winch handle. Installation to attach without welding and shall not require maintenance lubrication.
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2.4 ACCESSORIES .7 Flag Arrangements: 3 mm stainless steel
(Cont'd) cable. Complete with stainless steel quick
links.

2.5 FINISHES .1 Aluminum:
.1 Finish exposed surfaces of aluminum
components in accordance with AA DAF-45.
.1 Clear anodic finish: designation
AA-A31.
.2 Appearance and properties of anodized
finishes designated by the Aluminum
Association as, Architectural Class 2, and
Protective and Decorative.

PART 3 - EXECUTION

3.1 EXAMINATION .1 Verification of Conditions: verify that
conditions of substrate previously installed
under other Sections or Contracts are
acceptable for flagpole installation in
accordance with manufacturer's written
instructions.
.1 Visually inspect substrate in presence
of Departmental Representative.
.2 Inform Departmental Representative of
unacceptable conditions immediately upon
discovery.
.3 Proceed with installation only after
unacceptable conditions have been remedied and
after receipt of written approval to proceed
from Departmental Representative.

3.2 PREPARATION .1 Temporary Erosion and Sedimentation Control:
.1 Provide temporary erosion and
sedimentation control measures to prevent soil
erosion and discharge of soil-bearing water
runoff or airborne dust to adjacent properties
and walkways, according to sediment and
erosion control plan, specific to site, that
complies with EPA 832/R-92-005 or requirements
of authorities having jurisdiction.
.2 Inspect, repair, and maintain erosion
and sedimentation control measures during

- .1 (Cont'd)
.2 (Cont'd)
construction until permanent vegetation has
been established.
.3 Remove erosion and sedimentation
controls and restore and stabilize areas
disturbed during removal.

- .1 Shop apply isolation coating to metal surfaces of flagpole and base that will be encased in concrete.
- .2 Install flagpoles, base assemblies and fittings to shop drawings and manufacturer's instructions.
- .3 Provide ground stakes as per Division 26, for positive lightning ground for each ground set flagpole installation.
- .4 Check and adjust installed fittings for smooth operation of halyards.

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirement].
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

- 3.5 PROTECTION .1 Protect installed products and components
from damage during construction.
- .2 Repair damage to adjacent materials caused by
flagpole installation.