

PART 1 - GENERAL

1.1 REFERENCES

- .1 Aluminum Association (AA)
 - .1 AA DAF 45-03(R2009), Designation System for Aluminum Finishes.
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 609/610-15, Cleaning and Maintenance Guide for Architecturally Finished Aluminum.
- .3 ASTM International
 - .1 ASTM A 653/A 653M-15e1, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .4 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.
- .5 Electrical and Electronic Manufacturers' Association of Canada (EEMAC)
- .6 Green Seal Environmental Standards (GS)
 - .1 GS-11-11, Paints and Coatings.
 - .2 GS-36-11, Commercial Adhesives.
- .7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1113-A2011, Architectural Coatings.
 - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.2 ADMINISTRATIVE
REQUIREMENTS

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section and on-site installation, with Contractor's Representative and Departmental Representative
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- 1.2 ADMINISTRATIVE .1 (Cont'd)
REQUIREMENTS .1 (Cont'd)
(Cont'd) in accordance with Section 01 31 19 - Project Meetings to:
- .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other construction subtrades.
 - .4 Review manufacturer's written installation instructions and warranty requirements.
- 1.3 ACTION AND .1 Submit in accordance with Section 01 33 00 -
INFORMATIONAL Submittal Procedures.
SUBMITTALS
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door components and include product characteristics, performance criteria, physical size, finish and limitations.
 - .3 Shop Drawings:
 - .1 Indicate each type of door, arrangement of hardware, required clearances, resistance to wind load conditions electrical characteristics including voltage, size of motors, auxiliary controls and wiring diagrams.
 - .2 Indicate assembly details and dimensions of fabrication, required clearances and electrical connections.
 - .4 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate 300 mm long pieces of and each selected insert sections.
 - .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
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1.3 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .6 Manufacturers Reports:
 - .1 Manufacturer's Field Reports: submit manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.
- .7 Sustainable Design Submittals:
 - .1 LEED Canada submittals: in accordance with Section 01 35 21 - LEED Requirements.

1.4 CLOSEOUT
SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for overhead coiling doors, and hardware for incorporation into manual.

1.5 QUALITY
ASSURANCE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.6 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.
 - .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.
 - .2 Store and protect overhead coiling doors from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
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| 1.6 DELIVERY,
STORAGE AND
HANDLING
(Cont'd) | .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 DESIGN CRITERIA | .1 | Design rolling door curtain and assembly to withstand wind load noted in National Building Code of Canada (current edition) Climatic Data within door opening area. |
| | .2 | Design for normal use of up 20 cycles per day. |
| | .3 | Design for thermal performance of RSI 1.41 (R8). |

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| 2.2 ACCEPTABLE
MANUFACTURERS | .1 | Manufacturers: |
| | .1 | Cornell/Cookson. |
| | .2 | Wayne Dalton. |
| | .3 | Clopay. |
| | .4 | McKeon. |
| | .5 | Overhead Door. |

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| 2.3 MATERIALS | .1 | Rolling doors. |
| | .2 | Galvanized steel sheet: commercial quality with Coating Designation Z120 minimum, with baked on base coat and baked on polyester finish powder coat. VOC limit to Green Seal Standard. |
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2.3 MATERIALS
(Cont'd)

- .3 Adhesives and Sealants: VOC limit 250 g/L maximum to SCAQMD Rule 1168.

2.4 DOOR
FABRICATION

- .1 Coiling door curtain interlocking slat sections:
.1 Roll formed steel, 0.85 mm (22 gauge) minimum base metal thickness x approximately 75 mm wide.
.2 Insulated slats, RSI value of 1.41 (R8). Total slat thickness 24 mm thick.
- .2 Rivet wind locks to slat ends as required to resist wind load.
- .3 Form guides of steel angles of sections of 4.8 mm minimum thickness for face of wall installation. Windlock bar as required to meet wind load. Equip guides with flexible vinyl weatherstrip. Finish guides with base coat and finish coat of baked on polyester to match slats.
- .4 Construct counterbalance assembly of heat treated torsion spring with 25% overload factor.
.1 Enclose spring in steel pipe to support door curtain and counterbalance mechanism with maximum deflection of 1/360th of opening width.
.2 Include ball bearings at rotating points and spring tension adjusting wheel, accessible for setting.
- .5 Support counterbalance assembly on 5 mm minimum thickness steel plate brackets, forming end enclosures.
- .6 Enclose counterbalance and operator assembly with galvanized steel sheet formed hood, equipped with weatherstripping. Powder coat finish system and colour to match slats.
- .7 Equip door for locking from inside with slide bolt and padlocking. Complete with interlock switch to stop motorized operation with slide bolt is in locked position.
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- 2.5 OPERATION .1 Equip door for operation by:
.1 Electric motor operator with manual chain hoist emergency back-up.
- 2.6 ELECTRICAL OPERATOR .1 Electrical motors, controller units, remote pushbutton stations, relays and other electrical components: to CSA and ULC approval.
- .2 Operator and controls to be from same manufacturer as door.
- .3 Power supply: 3/4 hp, 208 volt, single phase.
- .4 Motor: high starting torque, instant reversing, capacity to operate door at 200 mm per second, removable without affecting emergency chain device or setting of limit switches. Equip motor with overload protection, centrifugal clutch and electric brake. Industrial duty unit.
- .5 Motor size matching gear reducer with gears running in oil bath.
- .6 Controller units with integral motor reversing starter, 3 heater elements for overload protection, including pushbuttons and control relays as applicable.
- .7 Operation:
.1 Remote push button stations: surface mounted with OPEN-STOP-CLOSE push buttons with keyed lock out. Coordinate with Departmental Representative.
- .8 Design brake to stop and hold doors in any position.
- .9 Include hand chain interlocked auxiliary operator to disconnect motor mechanically and electrically when engaged and allow manual operation of door.
- .10 Safety switch: electro mechanical or electro pneumatic device full length of bottom rail of bottom section of door, to reverse door to open position when coming in contact with
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- 2.6 ELECTRICAL OPERATOR (Cont'd)
- .10 Safety switch: (Cont'd)
object on closing cycle. Provide photo eye sensors consisting of transmitter and receiver mounted within 150 mm of floor, projecting infrared across entire width of door. Interruption of beam shall cause door to stop downward travel and reverse to open position.
 - .11 Door speed: 200 mm/s.
 - .12 Mounting brackets: powder coated galvanized steel, size and thickness to suit conditions. Powder coat finish system and colour to match door.
 - .13 Control circuit: 24 VAC.
 - .14 Provide integral motor mounted interlock to prevent damage to door and operator when mechanical door locking devices are engaged.

PART 3 - EXECUTION

- 3.1 EXAMINATION
- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for overhead coiling doors 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 INSTALLATION
- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
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3.2 INSTALLATION
(Cont'd)

- .2 Install doors in accordance with manufacturer's printed instructions.
- .3 Install electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for door operation.
- .4 Install electric wiring from power supply located near door.
- .5 Coordinate electrical work with Division 26 requirements.
- .6 Adjust door operating components to ensure smooth opening and closing of doors.

3.3 FIELD QUALITY
CONTROL

- .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation, protection and cleaning of its products, and submit written reports in acceptable format to verify compliance of Work with Contract.
 - .2 Manufacturer's Field Services:
 - .1 Obtain written reports from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product.
 - .3 Submit manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.
 - .4 Ensure manufacturer's representative is present before and during testing.
 - .5 Schedule site visits to review Work at stages listed:
 - .1 Upon completion of Work, after cleaning is carried out.
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- 3.4 CLEANING
- .1 Perform cleaning of aluminum components in accordance with: AAMA 609.
 - .2 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 Clean aluminum with damp rag and approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .2 Remove traces of primer, caulking; clean doors and frames.
 - .3 Clean glass and glazing materials with approved non-abrasive cleaner.
 - .4 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 Requirements.
 - .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 overhead coiling door installation.