
Partie 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 04 22 00 – Concrete Unit Masonry.
- .2 Section 05 50 00 – Metal Fabrications.
- .3 Section 09 91 23 – Interior Painting.
- .4 Division 26 – Electricity, for power supply.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM A653/A653M-10, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Electrical Equipment Manufacturers Association of Canada (EEMAC).
- .3 National Fire Protection Association (NFPA).
 - .1 ANSI/NFPA 80-2010, Standard for Fire Doors and Fire Windows.
- .4 Underwriter Laboratories of Canada (ULC).
 - .1 CAN4-S104-80(C1985), Standard Method for Fire Tests of Door Assemblies.
 - .2 CAN4-S105-85, Standard Specification for Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Product Data:
 - .1 Submit product literature and data sheets in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Shop Drawings:
 - .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate hardware layout, required clearances materials, hardware and electrical connections including voltage, motor size, auxiliary components and wiring diagrams.
 - .3 Indicate assembly and instruction details, dimensions of fabrication, required clearances materials, hardware and electrical connections.
- .3 Manufacturers Reports:
 - .1 Submit manufacturer's installation instructions.
- .4 Submit manufacturer's field inspection reports.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.

1.5 QUALITY ASSURANCE

- .1 Regulatory requirements:
 - .1 Metal rolling metal fire doors certified and labelled by organization recognized by Standards Council of Canada with fire-rating to CAN4-S104M and CAN4-S105M and indications.
 - .2 Doors with fire-rating manufactured and installed to NFPA 80, according to required fire rating.
 - .3 Required door is oversized; apply corresponding label.
- .2 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 Certificates: Submit manufacturer's written documents certifying products and materials meet performance criteria and physical size, finish and limitations.
- .4 Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty 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 side coiling counter grilles from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.7 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

Partie 2 Products

2.1 MATERIALS

- .1 Galvanized steel sheet: commercial quality to ASTM A653M, Z275 minimum zinc coating; use galvanized elements for: curtain, hood, bottom bar and guides.

2.2 DOOR

- .1 Metal rolling metal fire doors to ANSI/NFPA 80 with fire-rating equivalent to wall in which door is installed, designed for wide openings and “UltraBig” bearing label from certification organization.
- .2 Curtain blades:
 - .1 Laminated steel sheet, minimum 20 gauge.
 - .2 Curved.
- .3 Rivet ends to blades.
- .4 Ensure bottom bar of double equal weight and equip guides with weatherstrip in accordance with manufacturer’s standards and requirements of certification organizations.
- .5 Form guides of metal angles of sections of 5 mm minimum thickness, bolted to form guide channel and mounting surface, in accordance with requirements of certification organizations.
- .6 Head plate, hood and barrels 6 mm steel plates. Head plate with precision sealed ball bearings supporting drive side assembly.
- .7 Barrel: steel pipe barrel, 114 mm minimum diameter, designed to limit maximum deflection under load to 0.7 mm per 300 mm. Threaded rings or lugs welded to barrel assembly for curtain attachment.

Springs: counterbalanced torsion springs, grease-packed and mounted on steel torsion shaft with toggle bolts. Springs to provide a minimum of 20,000 operating cycles.
- .8 Enclose counterbalance assembly with galvanized steel sheet formed hood.
- .9 Attach to hood sheet metal flame and smoke baffle to drop in place automatically when activated by temperature rise to 74°C and melting of fusible link.
- .10 Finish: finish curtain blades and hood in baked epoxy primer and polyester finish.

2.3 OPERATION

- .1 Install automatic closing device activated by building fire alarm to close door at controlled even speed in case of fire.
- .2 Equip doors with the following accessories to reopen doors electrically.

2.4 ELECTRICAL OPERATOR

- .1 Electrical motors, controller units, remote pushbutton stations, relays and other electrical components: to CSA and ULC approval in CEMRA type 1 housing.
- .2 Motor: high starting torque, instant reversing, removable without affecting emergency chain device or setting of limit switches. Equip motor with overload protection, centrifugal clutch and electric brake.
- .3 Motor size matching gear reducer with gears running in oil bath.
- .4 Controller units with integral motor reversing starter, 3 heater elements for overload protection, including pushbuttons and control relays as applicable.
- .5 Operation:
 - .1 Remote push button stations: surface mounted, in 2 locations, with OPEN-STOP-CLOSE push buttons.
- .6 Design brake to stop and hold doors in any position.
- .7 Mounting brackets: galvanized steel, size and thickness to suit conditions.
- .8 Control circuit: 24 VAC.

Partie 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 INSTALLATION

- .1 Erect doors in accordance with manufacturers' printed instructions.
- .2 Install electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for operation.
- .3 Installation includes electric wiring from power supply located near door opening.
- .4 Install masterkeyed cylinder specified in Section 08 71 00 - Door Hardware.
- .5 Close doors to verify operation in the presence of the Departmental Representative.

3.3 FIELD QUALITY CONTROL

- .1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its product[s], and submit written reports in acceptable format to verify compliance of Work with Contract.

- .2 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.
- .3 Schedule site visits to review Work at stages listed:
 - .1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
 - .2 Twice during progress of Work at 25% and 60% complete.
 - .3 Upon completion of Work, after cleaning is carried out.
- .4 Obtain inspection reports within three (3) days following site visit and submit for approval.

3.4 CLEANING

- .1 Upon completion remove construction dirt and accumulated debris.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and security barriers.

END OF SECTION