

**Part 1 General**

**1.1 SUBMITTALS**

- .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 tackboards; include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Installation Drawings:
  - .1 Submit installation drawings.
  - .2 Indicate location, type, size, panel arrangement, backing, hardware, anchor or mounting details, frame or trim and accessories.
- .4 Samples:
  - .1 Submit duplicate 150 x 150 mm samples of tackboard and 150 mm samples of trim.

**DELIVERY, STORAGE AND HANDLING**

- .5 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .6 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .7 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 tackboards from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Extruded aluminum to ASTM B221.
- .2 Laminating adhesive: To manufacturer's standard.
- .3 Mounting adhesive: To manufacturer's standard.
- .4 Anchor clips, brackets and fasteners: Concealed type selected by Departmental Representative for fixed mounting.
- .5 Facings:
  - .1 Linoleum: single layer sheet composite of linseed oil, ground cork and rosin, 6 mm thick, colour selected by Departmental Representative.

- .6 Core: Fibreboard, urea formaldehyde free.

## **2.2 COMPONENTS**

- .1 Extruded aluminum: Minimum 1.5 mm wall thickness.
- .2 Tackboard trim and framing: perimeter trim or frame.

## **2.3 FABRICATION**

- .1 Fabricate tackboard panels to sizes indicated.
- .2 Wrap around edges and fasten to back face.
- .3 Make finished panels flat and rigid.
- .4 Install trim on panels in factory.
  - .1 Make mitres and joints to hair-line fit, free of rough edges with concealed brackets to reinforce and hold joints tight and flush.
- .5 Factory fit assemblies too large for shipment to site in one piece, disassemble for delivery and site assembly.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verify that conditions of substrate are acceptable for tackboard installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Inform Departmental Representative of unacceptable conditions.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

### **3.2 MANUFACTURER'S INSTRUCTIONS**

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

### **3.3 INSTALLATION**

- .1 Install tackboards in accordance with manufacturer's instructions, parallel to floor with uniform vertical surface, plumb and level, to provide rigid, secure surface.
- .2 Install trim and framing around tackboard panels. Make mitres and joints to hair-line fit, free of rough edges. Use concealed brackets to reinforce and hold joints tight and flush. No exposed fasteners permitted. Overlap trim 6 mm onto panels.
- .3 Mechanical attachment:
  - .1 To concrete or solid masonry use lag screw and expansion bolts or screws and fibre plugs as appropriate for stresses involved.
  - .2 To hollow masonry use toggle bolts or equivalent.

- .3 To wood or sheet metal use screws. Secure into framing members in stud walls.

### **3.4 CLEANING**

- .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: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **3.5 PROTECTION**

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

**END OF SECTION**

**Part 1            General**

**1.1                REFERENCES**

- .1        AAMA 611-98 - Voluntary Standards for Anodized Architectural Aluminum.
- .2        ANSI/BIFMA X5.6-2003 - American National Standard for Office Furnishings.
- .3        ASCE 7-05 - Minimum Design Loads for Buildings and Other Structures.
- .4        ASTM E72-04- Method for Conducting Strength Tests of Panels for Building Construction.
- .5        ASTM E90-97- Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .6        ASTM E413-87- Classification for Rating Sound Insulation.
- .7        CAN/CGSB 12.1-M90, Tempered or Laminated Safety Glass.
- .8        CSA B651-12, Accessible Design for the Built Environment.
- .9        CAN/CSA C22.1-15, Canadian Electrical Code, Part I, 23<sup>rd</sup> edition.
- .10      CAN/CSA C22.2 No. 203-M91 (R2005 - Modular Wiring Systems for Office Furniture.
- .11      UL 1286-2008 – Office Furnishings.

**1.2                PERFORMANCE REQUIREMENTS**

- .1        Structural Performance: Provide demountable partitions capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  - .1        Transverse-Load Capacity of Wall System: Lateral deflection of not more than 1/120 (solid wall) and 1/175 (glass wall) of the overall span when tested under a uniformly distributed load of 0.24 kN/m<sup>2</sup> (5 psf) in accordance with ASTM E72 or calculated by registered engineer.

**1.3                SUBMITTALS**

- .1        Product Data: Provide product information for each type of product indicated in this specification.
- .2        Shop Drawings: Provide Shop Drawings for demountable partitions.
  - .1        Include plans, elevations, sections, connection details, and attachment details to other work.

- .2 Include critical field measurements for modular installation, including finished width and height of partitions.
- .3 Provide structural analysis data for installed products indicated to comply with design loads, signed and sealed by professional engineer, licensed in the Northwest Territories.
- .3 Coordination Drawings:
  - .1 Provide engineered drawings relevant to material inclusions within, or connections to the moveable wall product.
  - .2 Provide architectural plans locating movable wall products, including wall finishes and construction of surfaces interfacing or connecting with the moveable wall system.
  - .3 Provide reflected ceiling plans, drawn to scale, on which penetrations and ceiling mounted items are shown and coordinated with demountable partitions.
  - .4 Electrical Drawings: Coordinate electrical provisions to be included in moveable partitions with final circuited electrical engineering drawings and schedules.
- .4 Samples: Provide samples for verification of each type of exposed finish required, in sample size indicated below.
  - .1 Panel Finish Face and Extrusion Components: Manufacturer's standard size unit, but not less than 75 mm (3 inches) square.
  - .2 Linear Trim: 300 mm (12 inches) long.
  - .3 Door Face Finish: Manufacturer's standard sized unit, but not less than 75 mm (3 inches) square.
  - .4 Glazing: Manufacturer's standard sized unit, but not less than 75 mm (3 inches) square.
- .5 Maintenance Data: Provide maintenance data for demountable partitions for incorporation into operation and maintenance manuals.

#### **1.4 QUALITY ASSURANCE**

- .1 Sound Transmission Characteristics:
  - .1 Where STC ratings are indicated, provide partitions with STC rating determined by testing an identical system to ASTM E90 and classified in accordance with ASTM E413.
  - .2 Testing to be performed by a qualified independent testing agency.
- .2 Electrical Components, Devices, and Accessories: Listed and labelled in accordance with CSA 22.1, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- .3 Mechanical Strength of Demountable Partitions: Provide demountable partitions capable of withstanding static loads in accordance with ANSI/BIFMA X5.6.
- .4 Mock-Up:

- .1 Prior to installation of demountable partitions, construct mock-up to verify selections made under sample submittals.
- .2 Mock-up will demonstrate aesthetic effects and set quality standards for materials and execution.
- .3 Locate where directed by Departmental Representative.
- .4 Accepted mock-up may remain as part of the completed Work if undisturbed at time of Substantial Completion.

## **1.5 REGULATORY REQUIREMENTS**

- .1 Conform to CSA B651 for accessibility requirements.

## **1.6 PROJECT CONDITIONS**

- .1 Environmental Limitations: Do not deliver or install demountable partition components until building is enclosed and finishing operations are complete, including ceiling and floor-covering installation and painting.

## **Part 2 Products**

### **2.1 DEMOUNTABLE UNITIZED PANEL PARTITIONS**

- .1 Solid Panels:
  - .1 Aluminum Framing: Aluminum extrusions, 6063-T5 or 6061-T6 aluminum alloy, to AAMA 611.
  - .2 Face Mounted Tile Attachment: Provide unitized frame assembly to accept face mounted tiles with orientation and module increments as specified.
  - .3 Frame Accessibility: Provide up to 75 mm (3 inches) clear wall cavity for distribution of utilities accessible from either side of wall by removable face panels.
  - .4 Face Panels:
    - .1 Thicknesses: 13 mm (1/2 inch).
    - .2 Width and Height: As indicated.
  - .5 Electrical, Communications, and Security System Requirements: Install electrical, communications, and security system items with readily removable and replaceable wiring.
    - .1 Conduit: Provide option for metal conduit in cavity of demountable partitions, from outlet and device boxes to top or bottom of demountable partitions to permit wiring installation and connections.
    - .2 Boxes: Provide outlet and device boxes in cavity of demountable partitions for all outlets and devices indicated. Provide metal junction and pull boxes where indicated or required.
    - .3 Electrical, Communications, and Security System Components: Provide all cut-outs and reinforcements required for demountable

partitions to accept electrical, communications, and security system components.

- .2 Glass Panels:
  - .1 Aluminum Glazing Framing: Aluminum extrusions, 6063-T5 or 6061-T6 alloy.
    - .1 Frame Finish: Clear anodized aluminum, to AAMA 611.
  - .2 Glazing: Dual panes with PVB interlayer.
    - .1 Panes: 6 mm each, tempered, to CAN/CGSB 12.1.
  - .3 Frame Bases:
    - .1 Provide frame bases with provisions for height adjustment to accommodate floor slab variances.
    - .2 Provide a leveling mechanism for making fine adjustment in height over adjustment range of the product.
  - .4 Connections and Supports: Manufacturer's standard connections and supports that connect and release from floor and ceiling without damage using carpet grippers and ceiling track clips, with exception of the following conditions: bulkhead (drywall ceiling), seismic conditions, electrical or service feeds, physical connections to base building (where required).
  - .5 Panel Joint Closure: Manufacturer's standard, capable of closing up to a 25 mm (1 inch) gap between demountable partitions and base building elements.
  - .6 STC rating: 45.
  - .7 Trim: Continuous and modular, factory-finished, snap-on type; adjustable for variations in floor and ceiling levels.
    - .1 Base Trim Profiles: Recessed; removable to access leveling mechanisms.
    - .2 Ceiling Trim Profile: Recessed; adjustable to accommodate up to a 12 mm (1/2 inch) gap between demountable partitions and base building elements.
    - .3 Wall Trim Profile: Recessed; adjustable to accommodate up to a 12 mm (1/2 inch) up to 25 mm (1 inch) gap between demountable partitions and base building elements.
    - .4 Panel to Panel Profile: As detailed.
    - .5 Colours: As selected by Departmental Representative from manufacturer's full range.

## **2.2 DOORS**

- .1 Glazed Aluminum Doors: Manufacturer's standard stiles and rail door, butt hinge operation, glazed aluminum doors.
  - .1 Door Thickness: 43 mm (1-11/16 inches) thick.
  - .2 Door Finishes: Clear anodized aluminum, to AAMA 611.
  - .3 Door Height: Adjustable base to move in conjunction with wall system.

- .4 Glazing: Dual panes with PVB interlayer.
  - .1 Glass: 6 mm each, tempered, to CAN/CGSB 12.1.
- .5 Hardware Reinforcement: Factory milled to suit hardware.
- .6 Security System Components: Coordinated door hardware requirements and prep work for security system components.

## **2.3 DOOR FRAMES**

- .1 Butt Hinge Frames: Manufacturer's standard aluminum frame, factory milled to receive hardware, for 43 mm (1-11/16 inch) +/- 1.5 mm (1/16 inch) doors. Door frames capable of reconfiguration without part replacement or damage to wall components.
  - .1 Frame Finishes: Clear-anodized aluminum, to AAMA 611.
  - .2 Door Module Size: As scheduled.
  - .3 Configuration: Header, jambs and pivot hardware. Single door frame width not to exceed 1219 mm (48 inch) wide module.
  - .4 Hardware Reinforcement: milled, reinforce, drill and tap frames at factory to receive specified hardware in accordance with the contract hardware schedule and templates.
  - .5 Frame Height: Jambs over length 50 mm (2 inches), for field cutting to suit opening height for proper alignment with adjacent frames.
  - .6 Frame Preparation: Factory milled frame with hinge locations and sizes as determined and set by manufacturer; including factory installed steel backer plates for four hinges (2 pair):
    - .1 Hinges: 4 1/2 x 4 inches, fastened with 10-24 flat head machine screws.
  - .7 Factory notched and drilled jambs for ceiling track and manufacturer's standard header attachment.
  - .8 Extrusion Profile: Rectilinear profile to match adjacent unitized glass frames.
  - .9 Seals: Manufacturer's standard.
- .2 Hardware: As specified in Section 08 71 00 – Door Hardware.

## **2.4 ACCESSORIES**

- .1 Accessories and Brackets:
  - .1 Manufacturer's brackets, supports and accessories for complete installation of system's furniture components, architectural millwork, audio visual equipment, and paper accessories.

## **2.5 FABRICATION**

- .1 Demountable Unitized Panels:
  - .1 Factory-Assembled frames with 25 mm (1 inch) insulation, base track and levellers; face mounted tiles installed to frames on site.



- .2 Fabricate panels for installation with concealed fastening devices and pressure-fit components that will not damage ceiling or floor covering exceptions.
- .3 Fabricate panels with continuous light-and-sound seals at floor, ceiling, and other locations where panels abut fixed construction.
- .4 Factory glaze panels to the greatest extent possible.
- .2 Components:
  - .1 Fabricate components for installation with concealed fastening devices and pressure-fit members that will not damage ceiling or floor coverings. Exceptions: Drywall ceiling, seismic applications and doors against base building require screw holes in base building for proper fastening.
  - .2 Fabricate for installation with continuous seals at floor and other locations where partition assemblies abut fixed construction and for installation of sound attenuation insulation in partition cavities.
  - .3 Electrical, Communications, and Security System Components: Fabricate demountable partitions to accept electrical, communications, and security systems components.

## **2.6 FINISHES**

- .1 Protect finishes on exposed surfaces from damage during shipping.
- .2 Appearance of Finished Work:
  - .1 Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved samples.
  - .2 Noticeable variations in the same piece are not acceptable.
  - .3 Variations in appearance of other components are acceptable if they are within the range of accepted samples and are assembled or installed to minimize contrast.

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install demountable partition systems to manufacturer's written instructions.
- .2 Install system rigid, level, plumb, and aligned.
- .3 Apply finished face mounted tiles to framing.
- .4 Install continuous insulation in base trim cavity.
- .5 Install seals to prevent light and sound transmission at connections to floors, ceilings, fixed walls, and abutting surfaces.
- .6 Install doors and frames, glazing, and glazing frame assemblies securely anchored to partitions and with doors aligned and fitted.

- .7 Install and adjust door hardware for proper operation.

**3.2 DEMONSTRATION**

- .1 Engage a factory-authorized service representative to demonstrate and train designated maintenance personnel to adjust, operate, and maintain demountable partitions.
- .2 Refer to Section 01 79 00 – Demonstration and Training.

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 ASTM International
  - .1 ASTM E90-04, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
  - .2 ASTM E336-05, Standard Test Method for Measurement of Airborne Sound Insulation in Buildings.
  - .3 ASTM E557-12, Standard Guide for Architectural Design and Installation Practices for Sound Isolation between Spaces Separated by Operable Partitions.
- .2 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S102-03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

**1.2 DESIGN REQUIREMENTS**

- .1 Design and fabricate folding partitions with minimum STC of 52 as tested to ASTM E90.

**1.3 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 35 29 – Health and Safety Requirements.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Manitoba.
    - .1 Indicate installation requirements including dimensions, head and jamb conditions, track layout, stacking arrangement, switching, hardware, finish and colour, operating mechanism, electrical requirements and location.
- .4 Samples:
  - .1 Submit duplicate 300 x 300 mm samples of partition finish for each colour selected.
- .5 Quality assurance/control submittals: Submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Test reports: Submit certified test reports for folding panel partitions from approved independent testing laboratories, indicating compliance with

- specifications for specified performance characteristics and physical properties.
- .2 Submit test data indicating compliance with design requirements regarding sound transmission and fire hazard classification.
- .3 Submit acoustical test data to ASTM E90 and ensure construction details and weight are provided.
- .4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- .5 Manufacturer's Instructions: submit manufacturer's installation instructions. Indicate special handling criteria, installation sequence, cleaning procedures.
- .6 Manufacturer's Field Reports: manufacturer's field reports specified.
- .6 Closeout Submittals:
  - .1 Provide operation and maintenance data for folding panel partitions for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

#### **1.4 QUALITY ASSURANCE**

- .1 Site Meetings: As part of Manufacturer's Services described in PART 3 - FIELD QUALITY CONTROL, schedule site visits, to review Work, at stages listed.
  - .1 After delivery and storage of products, and when preparatory Work 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.

#### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### **Part 2 Products**

#### **2.1 OPERATION**

- .1 Series of individual flat panels, manually operated, top supported with operable floor seals and automatic top seals.

#### **2.2 PANEL CONSTRUCTION**

- .1 Nominal 108 mm thick panels in manufacturer's standard widths. All panel horizontal and vertical framing members fabricated from minimum 16 gauge formed steel with overlapped and welded corners for rigidity. Top channel reinforced to support suspension system components. Frame designed with full vertical edges of formed steel panels and concealed protection of panel skin edges.

- .2 Panel skin: Roll-formed steel wrapping around panel edge. Panel skins lock formed and welded directly to frame for unitized construction.
  - .1 Acoustic rating: Minimum STC 52.
- .3 Panel Trim: No vertical or horizontal trim required or permitted on edges of panels; minimal groove appearance at all panel joints.
- .4 Panel finish: Upholstery fabric with stain resistance treatment.
- .5 Vertical interlocking sound seals between panels: Roll-formed steel astragals, with tongue and groove configuration in each panel edge. Rigid plastic or aluminum astragals are not acceptable.
- .6 Top seals: Continuous contact extruded vinyl bulb shape with pairs of non-contacting vinyl fingers to prevent distortion without the need for mechanically operated parts.
- .7 Bottom seals: Automatic, providing nominal 51 mm operating clearance with an operating range of +13 mm to -38 mm that automatically drop as panels are positioned, without the need for tools or cranks. Extended seal to exert nominal 120 kg (265 lbs) downward force to the floor throughout operating range.

## **2.3 SUSPENSION SYSTEM**

- .1 Suspension Tracks: Minimum 7-gauge, 4.57 mm roll formed steel. Static loading of track with brackets at 1220 mm centers to show no failure of track or brackets at 2550 kg point loading at mid-span. Track to be supported by adjustable steel hanger brackets connected to structural support pairs of 13 mm diameter threaded rods. Brackets to support load bearing surface of track.
  - .1 Exposed track soffit: Steel, removable for service and maintenance, attached to track bracket without exposed fasteners, and pre-painted off-white.
- .2 Carriers: All-steel trolley with four or eight steel-tired ball-bearing wheels. Non-steel tires are not acceptable.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

### **3.2 INSTALLATION**

- .1 Comply with ASTM E557, operable partition manufacturer's installation instructions, drawings, and shop drawings.
- .2 Secure and level track.
- .3 Touch up damaged finishes, repair damage to partitions to match original finish.
- .4 Clean folding partition system and protect from damage.

- .5 Adjust and leave partitions in smooth operating condition.

### **3.3 FIELD QUALITY CONTROL**

- .1 Manufacturer's Field Services:
  - .1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - SUBMITTALS.
  - .2 Provide 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, as directed in PART 1 - QUALITY ASSURANCE.

### **3.4 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools, and equipment.

**END OF SECTION**

**Part 1        General**

**1.1        REFERENCES**

- .1    ASTM International
  - .1    ASTM A240/A240M-10, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

**1.2        SUBMITTALS**

- .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 wall and corner guards and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2    Submit WHMIS MSDS in accordance with Section 01 35 29 - Health and Safety Requirements. Indicate VOC's for material as follows:
    - .1    Adhesives.
- .3    Installation Drawings:
  - .1    Indicate large scale details, materials, finishes, dimensions, and assembly.

**1.3        QUALITY ASSURANCE**

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

**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    Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3    Storage and Handling Requirements:
  - .1    Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2    Store and protect wall and corner guards from nicks, scratches, and blemishes.
  - .3    Replace defective or damaged materials with new.

**Part 2 Products**

**2.1 CORNER GUARDS**

- .1 Surface mount stainless steel corner guards, 38 mm legs, 3 mm (1/8 inch) radius, edge burrs removed.
  - .1 Material: Minimum 1.6 mm (16 gauge), stainless steel, type 304.
  - .2 Finish: Satin finish, grain oriented parallel with length.
  - .3 Height: 1220 mm (48 inches).

**2.2 ACCESSORIES**

- .1 Adhesive: Low VOC polyurethane-based construction adhesive.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Verify that conditions of substrate are acceptable for corner guard installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate.
  - .2 Inform Departmental Representative of unacceptable conditions.
  - .3 Proceed with installation only after unacceptable conditions have been remedied.

**3.2 MANUFACTURER'S INSTRUCTIONS**

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

**3.3 INSTALLATION**

- .1 Clean substrate to remove dust and debris.
- .2 Install units on solid backing and erect with materials and components straight, tight and in alignment.
- .3 Adhere corner guards to manufacturer's directions in locations as indicated.

**3.4 CLEANING**

- .1 Progress Cleaning: Clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .3 Clean surfaces after installation using manufacturer's written recommended cleaning procedures.



- .4 Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment in accordance with Section 01 74 11 - Cleaning.
- .5 Waste Management: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**3.5 PROTECTION**

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

**END OF SECTION**

**Part 1 General**

**1.1 REFERENCES**

- .1 National Fire Protection Association (NFPA)
  - .1 NFPA 10 - Portable Fire Extinguishers, 2013 Edition.
- .2 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC S503-05 (R2010) – Standard for Carbon Dioxide Fire Extinguishers.
  - .2 CAN/ULC S508-02 (R2013) - Rating and Fire Testing of Fire Extinguishers.

**1.2 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature and datasheets; include product characteristics, performance criteria, physical size, finish, and limitations.
- .3 Shop Drawings: Indicate cabinet physical dimensions, rough-in measurements for recessed cabinets, and location.
- .4 Manufacturer's Instructions: Submit manufacturer's installation instructions and special handling criteria, installation sequence, and cleaning procedures.
- .5 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- .6 Closeout Submittals:
  - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

**1.3 REGULATORY REQUIREMENTS**

- .1 Conform to National Building Code and NFPA 10 for requirements for extinguishers.

**1.4 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, store, and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

**Part 2 Products**

**2.1 MULTI-PURPOSE DRY CHEMICAL EXTINGUISHERS**

- .1 Stored pressure type with large loop pull pin and shut-off nozzle, ULC labelled, and all metal valve assemblies.
  - .1 Size: 2.25 kg.
  - .2 Valve assemblies: All metal, with On/Off squeeze grip handles.
  - .3 Finish: High gloss polyester powder paint or baked enamel.
    - .1 Colour: Red.
  - .4 To CAN/ULC S503, CO<sub>2</sub> type.
    - .1 Carbon dioxide charged.
    - .2 Aluminum tank.

**2.2 CABINETS**

- .1 Semi-recessed type as indicated, formed sheet steel, minimum 1.6 mm thick with flat trim, 180 degrees opening door of 2.5 mm thick steel with latching device.
- .2 Cabinets to maintain fire resistive rating of construction in which they occur.
- .3 Door Glazing: Glass, clear, 3 mm thick, tempered.
- .4 Cabinet Exterior Trim and Door Finish: Primed for field paint finish.

**2.3 IDENTIFICATION**

- .1 Identify extinguishers in accordance with recommendations of NFPA 10 and CAN/ULC S508.
- .2 Attach tag or label to extinguishers, indicating month and year of installation. Provide space for service dates.

**Part 3 Execution**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

**3.2 EXAMINATION**

- .1 Verify existing conditions before starting work.
- .2 Verify rough openings for cabinet are correctly sized and located.

**3.3 INSTALLATION**

- .1 Install or mount extinguishers in cabinets as indicated, in accordance with NFPA 10 and manufacturer's instructions.
- .2 Install cabinets plumb and level in wall openings, location as shown on drawings.

- .3 Secure rigidly in place to walls.
- .4 Position cabinet signage at locations acceptable to authority having jurisdiction.

**END OF SECTION**

**Part 1 General**

**1.1 DESIGN REQUIREMENTS**

- .1 Track/Rail system:
  - .1 Design track to carry minimum 1488 kg per linear metre (1000 lbs per linear foot) of carriage.
- .2 Carriage:
  - .1 Design carriage of steel to support minimum 1488 kg per linear metre (1000 lbs per linear foot).
  - .2 Gear reduction to allow carriage to move with 0.45 kg of effort at turn handle.
- .3 Wheels:
  - .1 Dynamic load capacity: 1815 kg (4000 lbs) per wheel.
- .4 Shelving:
  - .1 Four post, wedge-locking design, consisting of uprights, shelves and shelf supports, assembled without nuts, bolts, studs, clips, sway braces or gussets.
  - .2 No holes on exposed surfaces of assembled shelving: not allowed.
  - .3 Shelves and backs: flush with outside post.
  - .4 Provide sheet metal gables and back between each bay of shelves to prevent tampering.
  - .5 Design individual shelves to support uniform load of 128 kg per m of span.
  - .6 Adjustment: provide with vertical adjustment of shelves in [38] mm increments.

**1.2 SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheets; include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit WHMIS MSDS - Material Safety Data Sheets.
- .3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the Northwest Territories, Canada, for track type, track installation detail, track assembly, stationary tie down detail, rubber bumpers, drive upright detail, handle detail, crank, carriage detail including splice, and accessories.

- .2 Indicate dimensions, layout, number of bays, number of shelves, number and size of drawers and bins, number of dividers, system of bracing against tipping and anchoring devices.
- .4 Samples:
  - .1 Submit representative sample bay of specified shelving showing finish colour and accessories.
  - .2 Samples to be returned to Contractor for inclusion in Work.
- .5 Quality Assurance Submittals: Submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Design Data:
    - .1 Submit floor loading calculations including floor loading diagram.
    - .2 Provide installation details.
  - .2 Certificates: Submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .3 Manufacturer's Instructions: Submit manufacturer's installation instructions and special handling criteria, installation sequence, and cleaning procedures.
- .6 Closeout Submittals:
  - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

### **1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Store shipped materials on site only after arrival of installation crew.
- .2 Installation personnel to arrange delivery of components on site as required to avoid storing components on site.
- .3 Waste Management and Disposal: Remove waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## **Part 2 Products**

### **2.1 FABRICATION**

- .1 Track: Extruded aluminum, 6063-T5 alloy, low profile, surface mounted; clear anodized finish.
  - .1 Size: 16 mm (5/8 inch) height x 57 mm (2-1/4 inch) width.
  - .2 Track rail: 4140 annealed steel bar, 12 x 12 mm (1/2 x 1/2 inch), press-fit to track.
  - .3 Attachment: Pin bolts, 6 mm (1/4 inch) diameter.
- .2 Carriages: Rectangular structural steel tube, welded; complete with corner pockets and side plates to retain shelving.
  - .1 Steel thickness: 2.78 mm (12 gauge).

- .2 Size: 75 x 38 mm (3 x 1-1/2 inches).
- .3 Cross members: 75 x 63 mm (3 x 2-1/2 inch) U-channel.
- .4 Bumpers: Rubber, 19 mm (3/4 inch) diameter x 16 mm (5/8 inch) thickness.
- .5 Finish: Powder coat paint.
- .3 Wheels: Machined, heat-treated, stress-relieved 4140 steel; complete with guide flanges.
  - .1 Size: 113 mm (3-3/4 inch) diameter x 25 mm (1 inch) width.
  - .2 Ball bearings: Two per wheel, radial, self-aligning, double sealed.
  - .3 Shafts and axles: 1018 cold rolled steel, minimum 19 mm (3/4 inch) diameter.
- .4 Mechanical assist: Chain drive, exterior mounted with retractable handle.
  - .1 Sprockets: Hardened, black oxide coated.
  - .2 Provide integral chain tensioning device to mechanical assist mechanism.
  - .3 Wheels on one side of each carriage to be driven.
  - .4 Include push/pull aisle control mechanism on all mobile units.
- .5 End panels: Cold rolled steel, minimum 24 gauge, matched to existing mobile storage shelving.
- .6 Shelving: Standard shelves formed of cold rolled steel with flanges on four sides.
- .7 System configuration: As indicated.

## **2.2 FINISH**

- .1 Finish metal shelving in colour selected by Departmental Representative from manufacturer's standard range.

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

### **3.2 INSTALLATION**

- .1 Install metal storage shelving in accordance with reviewed layout, installation and start-up instructions.
- .2 Install rail to tolerances of maximum 2.4 mm from true level within module, maximum 1.6 mm between adjacent rails and maximum 0.8 mm in 3048 mm rail length.
- .3 Level track anchor and grout between track and floor.
- .4 Install components in place, plumb, straight and level.

- .5 Brace, secure, and anchor components in place.
- .6 Install shelving at uniform, equal height spacing, unless instructed otherwise.
- .7 Make good finished surfaces damaged during shipment or installation.

### **3.3 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 On completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

**END OF SECTION**