

Part 1 General

1.1 REFERENCES

- .1 Aluminum Association (AA).
 - .1 DAF 45-03, Designation System for Aluminum Finishes.
- .2 American National Standards Institute (ANSI).
 - .1 ANSI A208.2-2002, Medium Density Fiberboard for Interior Use.
- .3 Porcelain Enamel Institute (PEI).
 - .1 PEI 501 Porcelain Enamel.

1.2 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's:
 - .1 For caulking materials during application.
 - .2 For adhesives.
- .2 Shop Drawings:
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate location, type, size, panel arrangement, backing, hardware, anchor or mounting details, frame or trim and accessories.
- .3 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.
- .4 Closeout Submittals:
 - .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
 - .2 Affix maintenance instruction labels to whiteboards.

1.3 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Dispose of corrugated cardboard, polystyrene, plastic packaging material in appropriate on-site for recycling in accordance with site waste management program.

Part 2 Products

2.1 MATERIALS

- .1 Laminating adhesive: to manufacturer's standard.
- .2 Joint reinforcement: concealed mechanical jointing system to provide straight, rigid, continuously supported, tight butt, flush joints at surface.
- .3 Anchor clips, brackets and fasteners: concealed type recommended by whiteboard manufacturer.
- .4 Facings:
 - .1 Steel sheet: 0.61 mm thickness, commercial quality to ASTM A526, pre-cleaned and treated to ensure maximum adhesion of an acid resistant type A (for Whiteboard) porcelain enamel.
- .5 Core:
 - .1 Medium Density Fibreboard (MDF): to ANSI A208.2, 11 mm thick.
- .6 Backing:
 - .1 28 gauge steel sheet.

2.2 COMPONENTS

- .1 Extruded aluminum: Aluminum Association alloy AA6063-T5. Minimum 1.5 mm thick.
- .2 Trim: perimeter trim or frame, bottom rail with integral marker trough and end closures, of manufacturer's standard sections appropriate for installation conditions.

2.3 FABRICATION

- .1 Fabricate whiteboard panels to sizes indicated.
- .2 Factory laminate whiteboards, consisting of facing sheet, with core and backing sheet. Adhesive in accordance with manufacturer's recommendations.
- .3 Make finished panels flat and rigid and fit with joint reinforcement.
- .4 Fit joints between abutting whiteboard panels with joint reinforcement except where covering trim is required.
- .5 Install trim on panels in factory. 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.
- .6 Overlap trim 6 mm onto panels.
- .7 Factory fit assemblies too large for shipment to site in one piece, disassemble for delivery and site assembly.

2.4 FINISHES

- .1 Writing surfaces:
 - .1 Porcelain enamel: to Porcelain Enamel Institute Standards PEI 501 regards durability, smoothness of texture, colour continuity. Gloss factor of 6-8 as measured by 45 degree glossmeter:
 - .1 Surface finish for erasable markers and suitable for use as a projection screen: white colour.
 - .2 Aluminum trim finishes:
 - .1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.
 - .1 Clear anodic finish.
 - .2 Appearance and properties of anodized finishes designated by the Aluminum Association as Architectural Class 1, Architectural Class 2, and Protective and Decorative.

Part 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 Install whiteboards in accordance with manufacturer's instructions, parallel to floor with uniform vertical surface, plumb and level, to provide rigid, secure writing surface.
- .2 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.

3.3 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Clean surfaces after installation using manufacturer's recommended cleaning procedures.
- .3 Clean aluminum with damp rag and approved non-abrasive cleaner.
- .4 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Aluminum Association (AA)
 - .1 DAF 45-03, Designation System for Aluminum Finishes.
- .2 American National Standards Institute (ANSI)
 - .1 ANSI A208.2-2009, Medium Density Fiberboard for Interior Use.
- .3 CSA International
 - .1 CAN/CSA-Z809-08, Sustainable Forest Management.
- .4 Forest Stewardship Council (FSC)
 - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship.
- .5 Sustainable Forestry Initiative (SFI)
 - .1 SFI-2010-2014 Standard.

1.2 ACTION AND INFORMATIONAL 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 and 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 300 x 300 mm sample of each type of tackboard and 300 each type of trim.

1.3 QUALITY ASSURANCE

- .1 Regulatory Requirements:
 - .1 Surface burning characteristics of materials: listed and labelled by an organization accredited by Standards Council of Canada.
- .2 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 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.
- .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 indoors 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.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

- .1 Laminating adhesive: to manufacturer's standard.
- .2 Anchor clips, brackets and fasteners: concealed type recommended by manufacturer for fixed vertical adjustment mounting.
- .3 Facings:
 - .1 Natural cork tackboards: single layer natural cork fine grain sheet, 6 mm thick, natural colour, listed and labelled.
- .4 Core:
 - .1 Medium Density Fibreboard (MDF): to ANSI A208.2, 11 mm thickness.
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 Urea-formaldehyde free.

2.2 COMPONENTS

- .1 Extruded aluminum: aluminum Association alloy AA6063-T5. Minimum 1.5 mm wall thickness.
- .2 Tackboard trim and framing: perimeter trim or frame, of manufacturer's standard sections appropriate for installation conditions.

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.
- .2 No exposed fasteners permitted.
- .5 Overlap trim 6 mm onto panels.
- .6 Factory fit assemblies too large for shipment to site in one piece, disassemble for delivery and site assembly.

2.4 FINISHES

- .1 Aluminum trim finishes:
 - .1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.
 - .1 Clear anodic finish: designation AA-A21.
 - .2 Appearance and properties of anodized finishes designated by the Aluminum Association as Architectural Class 1, 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 tackboard 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 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.

3.3 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 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: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .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 tackboard installation.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM A167-99(2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM B456-03, Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
 - .3 ASTM A653/A653M-09, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.5-M86, Mirrors, Silvered.
- .3 CSA International
 - .1 CAN/CSA-G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan.
 - .2 Indicate size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in-frame, building-in details of anchors for grab bars.

1.3 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for toilet and bath accessories for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- .1 Tools:
 - .1 Provide special tools required for assembly, disassembly or removal for toilet and bath accessories in accordance with requirements specified in Section 01 78 00 - Closeout Submittals.
 - .2 Deliver special tools to Departmental Representative.

1.5 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 indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.]
 - .2 Store and protect toilet and bathroom accessories 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 in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

- .1 Sheet steel: to ASTM A653/A653M with ZF001 designation zinc coating.
- .1 Stainless steel sheet metal: to ASTM A167, Type 302 or 304, with No. 4 finish unless noted otherwise.
- .2 Sustainability Characteristics:
 - .1 Laminate Adhesives:
 - .1 Urea Formaldehyde Free.
- .3 Stainless steel tubing: Type 304, commercial grade, seamless welded, 1.2 mm wall thickness.
- .4 Fasteners: concealed screws and bolts hot dip galvanized, exposed fasteners to match face of unit. Expansion shields fibre, lead or rubber as recommended by accessory manufacturer for component and its intended use.

2.2 COMPONENTS

- .1 Toilet tissue dispenser: double roll type, surface mounted, chrome plated steel frame, capacity of 500 double ply roll, roll under spring tension for controlled delivery.
- .2 Paper towel dispenser: for double roll paper towels, ABS Polystyrene cabinet, hinged front panel, refill indicator slot, lock and key, surface mounted.
- .3 Waste receptacle: Type floor-standing, size 465 mm diameter x 815 mm high, stainless steel.
- .4 Surface-mounted automatic soap dispenser: capacity 800 ml of usable foaming soap, equipped with hinged cover and completely concealed mounting plate, vandal resistant filler hole cover and sight gauge, corrosion-resistant foam soap valve, sight gauge indicates refill time, overall dimensions: 118 mm W x 269 mm H x 107 mm D.

- .5 Feminine napkin disposal bin: stainless steel, surface unit, continuous hinged door, self closing, embossed with universally accepted symbol, removable stainless steel receptacles fitted with spring clip for deodorizer block.
- .6 Hand dryer: listed under re-examination service of ULC and CSA approved.
 - .1 Mounting surface.
 - .2 Cover: stainless steel.
 - .3 Motor: universal type, 74.6 kW, 7500 RPM, resilient mounting, sealed, lubricated bearings, fuse protected, 110-120 V, 12.5 Amp.
 - .4 Fan: double inlet centrifugal type, dynamically balanced, directly mounted on motor shaft, 97 meters/s.
 - .5 Heating element: protected by an automatic, resetting circuit breaker, isolated from nozzle.
 - .6 Electronic dryer: power controlled by infrared admitting, receiving electronic control device positioned to dryer on when hands are placed under nozzle. Operation to continue for no more than 80 seconds of continued use.
 - .7 Nozzle: stainless steel, fixed.
- .7 Grab bars: 38 mm dia x 1.6 mm wall tubing of stainless steel, 76 mm diameter wall flanges, concealed screw attachment, flanges welded to tubular bar, provided with steel back plates and all accessories. Knurl bar at area of hand grips. Grab bar material and anchorage to withstand downward pull of 2.2 kN. Installation as indicated. Sizes: 300 mm, 600 mm and 900 mm long.
- .8 Coat hook: stainless steel with 75 mm projection.
- .9 Mirror: to CAN/CGSB 12.5-M, Type 1A, wall mounted unit, fixed framed mirror 6 mm, stainless steel frame. Complete with concealed stainless steel mounting clips and butyl tape. Maximum tolerance permitted from edge of wall is 13 mm on each side. Size: 600 wide x 900 high. Install bottom edge at 1000mm above finished floor. Provide 1 mirror at each washroom sink.

2.3 FABRICATION

- .1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.
- .2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.
- .3 Brake form sheet metal work with 1.5 mm radius bends.
- .4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- .5 Back paint components where contact is made with building finishes to prevent electrolysis.
- .6 Hot dip galvanize concealed ferrous metal anchors and fastening devices to CAN/CSA-G164.
- .7 Shop assemble components and package complete with anchors and fittings.
- .8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates, details and instructions for building in anchors and inserts.

- .9 Provide steel anchor plates and components for installation on studding and building framing.

2.4 FINISHES

- .1 Chrome and nickel plating: to ASTM B456, satin finish.
- .2 Manufacturer's or brand names on face of units not acceptable.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrates and surfaces to receive toilet and bathroom accessories previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's instructions prior to toilet and bathroom accessories installation.
- .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 from Departmental Representative.

3.2 INSTALLATION

- .1 Install and secure accessories rigidly in place as follows:
 - .1 Stud walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
 - .2 Hollow masonry units, existing plaster or drywall: use toggle bolts drilled into cell or wall cavity.
 - .3 Solid masonry, marble, stone or concrete: use bolt with lead expansion sleeve set into drilled hole.
 - .4 Toilet and shower compartments: use male to female through bolts.
- .2 Install grab bars on built-in anchors provided by bar manufacturer.
- .3 Use tamper proof screws/bolts for fasteners.
- .4 Fill units with necessary supplies shortly before final acceptance of building.
- .5 Install mirrors in accordance to manufacturer's instructions.

3.3 ADJUSTING

- .1 Adjust toilet and bathroom accessories components and systems for correct function and operation in accordance with manufacturer's written instructions.
- .2 Lubricate moving parts to operate smoothly and fit accurately.

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: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .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 toilet and bathroom accessories installation.

3.6 SCHEDULE

- .1 Locate accessories where indicated. Exact locations determined by Departmental Representative.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-44.40-01, Steel Clothing Locker.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature and data sheets for metal lockers and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Indicate type and class of locker, thicknesses of metal, fabricating and assembly methods, assembled banks of lockers, tops, rods, hooks, shelves, bases, trim, numbering, filler panels, end/back panels, doors, handles, locking method, ventilation method and finishes.
- .4 Samples:
 - .1 Submit duplicate 50 x 50 mm samples of colour and finish on actual base metal.
 - .2 Samples will be returned for inclusion into work.

1.3 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:
 - .1 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 and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect metal lockers 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 in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MANUFACTURED UNITS

- .1 Lockers: to CAN/CGSB-44.40, Type 1-Single full-height locker, Class 2 - A bank of two or more lockers, freestanding.
 - .1 Special requirements: police double-door type.
 - .2 Size: 610 mm wide x 457 mm deep x 1829 mm high, steel thickness No. 20 MSG.
 - .3 Assembly: pop-riveted.
 - .4 Top: sloped.
 - .5 Double Doors:
 - .1 One-piece double-wall envelope construction, outer panel steel thickness No.20 MSG, inner panel steel thickness No.24 MSG.
 - .2 Full length astragal welded to active door (right hand).
 - .6 Door handle: stainless steel handle box & pull.
 - .7 Ventilation: vent slots in top and bottom of door or equivalent measures to provide free flow ventilation.

2.2 ACCESSORIES

- .1 Locking system: padlocks supplied by locker manufacturer.
- .2 Options:
 - .1 To CAN/CGSB-44.40.
 - .2 Vertical divider & drawer: No. 20 MSG.
 - .3 Boot shelf: No. 20 MSG.
 - .4 Hanger rod: 19 mm diameter.
 - .5 Coat hooks: zinc-plated steel.
 - .6 Drawer slide: full extension
 - .7 Drawer lock: keyed cylinder camlock.
 - .8 Other: steel base, steel trim including fillers, number plates manufacturer's standards.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates and surfaces to receive metal lockers previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's instructions prior to metal locker installation.
- .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 from Departmental Representative.

3.2 INSTALLATION

- .1 Assemble and install lockers in accordance with manufacturer's written instructions.
- .2 Securely fasten lockers to grounds and nailing strips.
- .3 Install wall trim around recessed locker banks.
- .4 Install filler panels (false fronts) where indicated and where obstructions occur.
- .5 Install finished end panels to exposed ends of locker banks.
- .6 Install locker numbers and locks.

3.3 ADJUSTING

- .1 Adjust metal lockers for correct function and operation in accordance with manufacturer's written instructions.
- .2 Lubricate moving parts to operate smoothly and fit accurately.

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: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .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 metal locker installation.

END OF SECTION

Part 1 General

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM A490M-12, Standard Specification for High-Strength Steel Bolts, Classes 10.9 and 10.9.3, for Structural Steel Joints Metric.
 - .2 ASTM A653/A653M-13, Standard Specification for Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.81-M90(R1990), Air Drying and Baking Alkyd Primer for Vehicles and Equipment.
 - .2 CAN/CGSB-1.88-92, Gloss Alkyd Enamel, Air Drying and Baking.
 - .3 CGSB 31-GP-107Ma-90, Non-inhibited Phosphoric Acid Base Metal Conditioner and Rust Remover.
- .3 CSA Group
 - .1 CSA G40.20/G40.21-13, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA W59-13, Welded Steel Construction (Metal Arc Welding).

1.2 ACTION AND INFORMATIONAL 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 metal shelving and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
 - .2 Indicate shelving layouts, number of bays, number of shelves, number and size of drawers, bins, number of dividers, system of bracing and anchoring devices.
- .4 Samples:
 - .1 Submit representative sample bay of specified shelving showing finish colour and including accessories.

1.3 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 indoors, off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect specified materials 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 crates, padding, packaging materials and pallets as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 DESIGN REQUIREMENTS

- .1 Design shelving to accommodate vertical adjustment of shelves in 50 mm increments and to permit easy assembly, expansion, dismantling and re-use of shelving component parts.

2.2 MATERIALS

- .1 Galvanized steel sheet: commercial grade to ASTM A653/A653M with Z275 zinc coating.
- .2 Steel sections and plates: to CAN/CSA G40.20/G40.21, Type 400 W.
- .3 Steel bolts, nuts and washers: to ASTM A490M.
- .4 Welding materials: to CSA W59.
- .5 Shelving:
 - .1 Storage shelving:
 - .1 Size: as indicated.
 - .2 Profile: as required.

2.3 COMPONENTS

- .1 Uprights: roll formed steel angles or tees with perforations to accommodate shelves and other components. Size and thickness of angles or tees shall support specified total load.
- .2 Shelves: brake formed sheet metal, reinforced to carry specified loads. Punch holes in shelves to accommodate dividers and other components.
- .3 Braces: provide sway braces for open type shelving. Use side sway braces on two exposed sides of each rack and at alternate bays. Use back sway braces on two end sections of each bank and on alternate bays.
- .4 Base plates: metal or plastic plates to take uprights and to protect floor surfaces.

2.4 FINISH

- .1 Finish shelving system painted in colour selected by Departmental Representative.
- .2 Condition metal by applying one coat of metal conditioner to CGSB 31-GP-107Ma.

- .3 Apply one coat type 2 primer to CAN/CGSB-1.81 and bake.
- .4 Apply two coats of type 2 enamel to CAB/CGSB-1.88 and bake to hard durable finish.
- .5 Manufacturers or brand names acceptable if not prominently displayed.

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 metal shelving 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 Do metal storage shelving work except where specified otherwise.
- .2 Install metal storage shelving in accordance with reviewed layout.
- .3 Brace, secure and anchor shelving units in place.
- .4 Make good baked enamel surfaces damaged during shipment or installation.

3.3 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: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION