SECTION 12 48 23 – entrance floor grids

1. General
   1. SUMMARY
      1. Furnish labour, materials, and other services to complete the fabrication and installation of the following:
         1. Recessed entrance floor grilles, including all materials and fitments required for the operation of any unit furnished, in the manner, direction and performance shown on the shop drawings and specified herein.
      2. Products Furnished but not Installed Under this Section:
         1. Supply foot grille frames to Cast-In-Place Subtrade, as indicated in Structural Specification, for casting into concrete.
      3. Related Requirements:
         1. Section 03 35 00 – Concrete Finishing.
         2. Section 09 30 00 – Tiling.
   2. REFERENCe standards
      1. Canadian Standards Association (CSA):
         1. CSA W59.2-M1991(R2008), Welded Aluminum Construction.
      2. Canadian General Standards Board (CGSB):
         1. CAN/CGSB-1.108-89, Bituminous Solvent Type Paint.
      3. American Society for Testing and Materials (ASTM):
         1. ASTM B221-12, Standard Specification for Aluminum Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
   3. SUBMITTALS
      1. Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
      2. Submit product data for floor grid and frame to be supplied, including manufacturer’s specifications and installation instructions, details of construction relative to materials, dimensions of individual components, profiles, anchors, and accessories.
      3. Shop Drawings:
         1. Submit shop drawings showing and describing in detail, materials, finishes, dimensions, details of connections and fastenings, plans, sections, metal gauges, hardware, and any other pertinent information.
         2. Make thorough examination of drawings and details, determine the intent, extent, materials, conditions of interfacing with other work and be fully cognizant of requirements.
      4. Submit 305mm x 305mm (12" x 12") samples of foot grilles, 305mm (12") long samples of foot grille frames showing corner condition for review of Consultant.
   4. QUALITY ASSURANCE
      1. The Contractor executing work of this Section shall have a minimum five (5) years continuous Canadian experience in successful manufacture and installation of work of type and quality shown and specified. Submit proof of experience upon Consultant's request.
      2. Slip resistance in accordance with ASTM D-2047-96, Coefficient of Friction, minimum 0.60 for accessible routes.
      3. Standard rolling load performance is 500 lb./wheel with larger loading requirements as specified (load applied to a solid 5” x 2” wide polyurethane wheel, 1000 passes without damage).
      4. Single Source Responsibility: Obtain floor grids and frames from one source of a single manufacturer.
   5. DELIVERY, STORAGE AND HANDLING
      1. Co-ordinate deliveries to comply with construction schedule and arrange ahead for off the ground, under cover storage location. Do not load any area beyond the design limits.
      2. Materials shall be carefully checked, unloaded, stored, and handled to prevent damage. Protect materials with suitable non-staining waterproof coverings.
      3. Store materials in original, undamaged containers or wrappings with manufacturer's seals and labels intact.
      4. Unsatisfactory materials shall be removed from the site.
      5. Adequately protect the structure and work of other Sections during delivery, storage, handling and execution of the work of this Section.
      6. Provide tools, plant and other equipment required for the proper execution of the work of this Section.
   6. Project conditions
      1. Field measurements: Check actual openings for grids by accurate field measurements before fabrication.
      2. Record actual measurements on final shop drawings.
      3. Coordinate fabrication schedule with construction progress to avoid delay of work.
      4. Recessed Conditions: Coordination with Division 03 35 00 – Concrete Finishing, as required for proper installation, the concrete recess must be flat and smooth throughout.
      5. The final recess depth will match the specified product and must be field verified. For proper frame installation, the side walls of the concrete recess must also be straight and smooth.
      6. Inconsistencies with the recess and side walls must be remediated prior to product installation.
   7. WARRANTY
      1. Warrant work of this Section against defects in materials and workmanship in accordance with the General Requirements for a period of five (5) years and agree to promptly make good defects which become evident during warranty period without cost to the Owner.
2. Products
   1. MANUFACTURERS
      1. Basis-of-Design products are named in this Section; form the basis-of-design materials for the project; additional manufacturers offering similar products may be incorporated into the work of this Section provided they meet the performance requirements established by the named products and provided they submit requests a minimum of five (5) days in advance of Bid Closing.
      2. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
         1. Construction Specialties Inc.
         2. Bolar Systems, Distributed by TenPlus Architectural Products Ltd.
         3. McGill Architectural Products.
   2. MATERIALS
      1. Stainless steel - Type 304 stainless steel for surface wires and support bars.
      2. Screws, Bolts, Nuts, Washers, Rivets, and other Fastening Devices: Stainless steel with not less than 12% chromium content to prevent galvanic action, and of sufficient strength for the purpose.
      3. Bituminous Paint: Conforms to CAN/CGSB-1.108, Type 2.
   3. ASSEMBLY
      1. Model and Description:
         1. Type 304 stainless steel in 16mm (5/8"), depth. Wires to be 2.28mm (0.09”) x 3.8mm (0.150") electronically welded and spaced 3.68mm (0.145”) apart.
         2. Unit must withstand 500 lb./ wheel loads.
         3. Basis of Design Materials: G6 GridLine by Construction Specialties Inc.
      2. Grid Frames:
         1. Type 304 stainless steel with 1/8" (3.2mm) exposed surface.
            1. Basis of Design Materials: Stainless Steel Angle Frame (SSA) by Construction Specialties Inc.
      3. Lock Down Mechanism:
         1. Hidden device to secure the GridLine to the concrete surface, made from Type 304 stainless steel.
            1. Basis of Design Materials: Hidden Lock Down (HL) by Construction Specialties Inc.
   4. FABRICATION
      1. Verify site dimensions prior to fabrication. Fabricate work of this Section square, true, straight, level, and free of distortion with joints closely fitted and properly secured. Provide adequate reinforcing and anchorage.
      2. Fabricate foot grilles and frames in largest practical sized units to fit floor recesses.
      3. Where floor recess size exceeds manufacturer's recommended maximum foot grille size, abut adjacent foot grille sections symmetrically, space joints away from normal traffic lines.
      4. Fit and assemble work of this Section in shop.
      5. Joints and intersecting members shall be accurately fitted, made in true planes with adequate fastening. Wherever possible, fastenings shall be concealed.
      6. Isolate where necessary to prevent electrolysis between metal to metal or metal to masonry or concrete contact. Apply two (2) coats of bituminous paint to frame surfaces in contact with concrete.
      7. Drilling shall be reamed and exposed edges left clean and smooth.
      8. Include anchors and fastenings necessary to anchor work.
3. Execution
   1. EXAMINATION
      1. Inspect surfaces over which the work of this Section is dependent for any irregularities detrimental to the application and performance of the work of this Section.
      2. Notify Consultant in writing of all conditions which are at variance with those in the contract documents and/or detrimental to the proper and timely installation of the work of this Section.
      3. The decision regarding corrective measures shall be obtained from the Consultant prior to proceeding with the affected work.
      4. Commencement of work implies acceptance of surfaces and conditions.
   2. PREPARATION
      1. Co-ordinate the work of this Section with the work of other Sections to provide the necessary recesses, edge conditions for the accessories as required.
      2. Set frame above floor slab to suit the adjacent floor finish height, ensuring a level transition from floor finish to foot grille and back to floor finish.
      3. Upon completion of installation of entrance mat frames, provide temporary plywood filler protection in entrance mat recesses and cover frames with plywood protective flooring. Maintain protection until construction traffic has ended.
   3. INSTALLATION
      1. Install floor grilles when no further wheeled construction traffic will occur and all "wet" trades including painting and decorating have been completed.
      2. Vacuum clean floor recesses prior to installing floor grilles.
      3. Install floor grilles flush and level with frames with concealed type fasteners, providing required under door clearances, in strict accordance with the manufacturer's written instructions, with the floor grilles aligned perpendicular to traffic flow.

END OF SECTION