SECTION  – mirrors

1. General
   1. summary
      1. Section includes wall mounted, float glass mirrors.
   2. RELATED REQUIREMENTS
      1. Section 05 50 00 – Metal Fabrications.
      2. Section 06 10 00 – Rough Carpentry.
      3. Section 07 92 00 – Joint Sealants.
      4. Section 09 22 16 – Non-Structural Metal Framing.
      5. Section 09 29 00 – Gypsum Board.
      6. Section 10 21 26 – Metal Toilet Compartments.
      7. Section 10 28 13 – Washroom Accessories.
   3. Reference standards
      1. American Society for Testing and Materials (ASTM):
         1. ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.
         2. ASTM C1503-08, Standard Specification for Silvered Flat Glass Mirror.
      2. Canadian General Standards Board (CGSB):
         1. CAN/CGSB-12.3-M91, Flat, Clear Float Glass.
   4. SUBMITTALS
      1. Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
      2. Action Submittals:
         1. Product Data: Submit product data for each product indicated, including description of materials and process used to produce mirrored glass, source of glass, glass coating components, edge sealer, and quality control provisions.
         2. Shop Drawings: Submit shop drawings showing plans, elevations, sections, details, and attachments to other Work.
         3. Samples: Submit samples, 305mm (12") square in size, of each type of mirror glass specified including edge treatment on two (2) adjoining edges of samples.
      3. Informational Submittals:
         1. Product Certificates: Submit product certificates signed by manufacturers of mirror glass certifying that their products and edge sealers comply with specified requirements.
         2. Preconstruction Test Report: Submit mirror mastic glass coating compatibility test reports from organic protective coating manufacturer indicating that mirror mastic has been tested for compatibility and adhesion with organic protective coating. Include organic coating manufacturers' interpretation of test results relative to performance and recommendations for use of mastics with organic protective coating.
   5. QUALITY ASSURANCE
      1. Installer Qualifications: Engage an experienced installer who has completed work similar in material, design, and extent to that indicated; whose work has resulted in installations with a record of not less than five (5) years of successful in-service performance.
      2. Glazing Publications: Comply with the applicable recommendations of the following. Where recommendations conflict the more stringent shall apply:
         1. Glass Association of North America (GANA): "Glazing Manual" and the Mirror Division's "Mirrors, Handle with Extreme Care: Tips for the Professional on the Care and Handling of Mirrors."
         2. National Glass Association (NGA): "Custom Mirrors, Fabrication and Installation."
   6. DELIVERY, STORAGE, AND HANDLING
      1. Comply with mirrored glass manufacturer's written instructions for shipping, storing, and handling mirrored glass as needed to prevent deterioration of silvering, damage to edges, and abrasion of glass surfaces and applied coatings.
      2. Store indoors, protected from moisture including condensation.
   7. WARRANTY
      1. Special Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrored glass units that deteriorate, within five years from date of Substantial Completion.
         1. Deterioration of Silvered Mirrored Glass:
            1. Defects developed from normal use not caused by maintaining and cleaning mirrored glass contrary to manufacturer's written instructions.
            2. Defects include discoloration, black spots, and clouding of the silver film.
2. Products
   1. SILVERED FLAT GLASS MIRROR MATERIALS
      1. Glass Mirrors:
         1. 6mm (1/4") thick, clear, and complying with ASTM C 1503, Mirror Select Quality for use in visually demanding applications requiring minimal distortions and blemishes.
         2. Provide two-layer silvering process.
   2. FABRICATION
      1. Cutouts:
         1. Fabricate cutouts for notches and holes in mirrored glass without marring visible surfaces.
         2. Locate and size cutouts so they fit closely around penetrations in mirrored glass.
      2. Mirror Edge Treatment:
         1. Cutting and Polishing:
            1. Flat edges where the clean cut "square" edge of the glass is flat and surface edges are slightly raised.
            2. After grinding the raises, edges shall be polished to a high gloss surface where the surface reflectivity is similar in appearance to the major surface of the glass.
         2. Edge Sealing:
            1. Immediately after cutting to final sizes, and applying edge treatment, factory seal edges of mirrors with edge sealer to prevent chemical or atmospheric penetration of glass coating.
   3. MISCELLANEOUS MATERIALS
      1. Setting Blocks: Non-rubber or non-neoprene based elastomeric material manufactured for setting silvered flat glass mirrors, compatible with adhesive used for placement, with a Type A Shore durometer hardness of 85, plus or minus 5.
         1. 3mm (1/8") wide by 6mm (1/4") high by 100mm (4") long.
      2. Edge Sealer: Coating compatible with glass coating and approved by mirrored glass manufacturer for use in protecting against silver deterioration at mirrored glass edges.
      3. Mirror Mastic: An adhesive setting compound, asbestos-free, produced specifically for setting mirrors and certified by both mirror and mastic manufacturer as compatible with glass coating and substrates on which mirrors will be installed.
      4. Substrate Primer and Sealer: High quality primer and sealer of type as recommended by the mirror mastic manufacturer.
      5. Top and Bottom Aluminum J Channels:
         1. Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate 6mm (1/4") thick mirrors and heavy bodied mirror mastic specified and in lengths required to cover bottom and top edges of each mirror in a single piece.
         2. The ends of the back lips of all channels shall be factory snipped and filed so that they will not be seen after installation.
         3. The bottom channel shall be drilled with a minimum of 57mm (2-1/4") diameter weep holes located between the setting blocks.
            1. Bottom Trim: J-channels formed with front leg and back leg not less than 10mm (3/8") and 22mm (7/8") in height, respectively.
            2. Top Trim: J-channels formed with front leg and back leg not less than 16mm (5/8") and 32mm (1-1/4”) in height, respectively.
      6. Fasteners:
         1. Steel Stud Framing:
            1. For fastening J-channels to drywall stud and backer sheet framing provide #8 gage diameter, Phillips type pan head drywall screws in quantity as required for support and fastening of continuous j-moldsto drywall stud framing.
         2. Plywood Fasteners:
            1. Provide #8 gage diameter, Phillips flat countersunk head, sharp pointed, coarse threaded, zinc coated, steel wood screw fasteners in quantity as required for support and fastening of continuous j-molds to plywood substrates.
3. Execution
   1. PREPARATION
      1. Comply with mastic manufacturer's written installation instructions for preparation of substrates.
         1. Mirror and substrate shall be free of dust, be clean, and dry prior to application of mirror mastic and drywall and plywood primer and sealer.
         2. If substrate surfaces have been painted prior to application of the specified primer and sealer, the existing paint shall be sanded through to the original surface and the substrate cleaned prior to the application of substrate primer and sealer.
   2. installation - general
      1. Install mirrors with mirror glazing channels to comply with written instructions of mirror and mirror glazing channel manufacturers, with referenced GANA and NGA publications, and as specified.
      2. Mount mirrors plumb, in line, and in a manner that avoids distorting reflected images.
      3. Comply with mastic manufacturer's printed directions for preparation and sealing of mounting surfaces by priming and sealing of substrates scheduled to receive mirror mastic.
         1. Allow primer and sealer to dry before applying mirror mastic.
   3. Mirror Channel Installation:
      1. To Plywood:
         1. Drill do not dimple, back lip of channel to receive fasteners with holes properly sized and spaced to receive fasteners. Attach mirror channels by screw attaching mirror channel through the back lip of the channel to plywood substrate in accordance with the fastener manufacturer's written instructions.
         2. Install the web of the top channel 6mm (1/4") higher than the height of the mirror to allow the raising of the mirror into the top channel and its subsequent lowering onto the bottom channel.
         3. After installing fasteners place masking tape over the entire length of the back lip of the channel completely covering the fastener heads to protect the mirror from being chipped in setting.
         4. Adhere setting blocks at quarter points for bottom mirror channels using only two setting blocks per mirror panel.
      2. To Drywall:
         1. Drill and countersink do not dimple, back lip of channels to receive stud fasteners with holes properly sized and spaced to receive stud fasteners.
         2. Attach mirror channels by screw attaching mirror channel through the back lip of the channel through drywall, stud framing, and sheet metal backer plate substrates in accordance with the fastener manufacturer's written instructions.
         3. Install the web of the top channel 6mm (1/4") higher than the height of the mirror to allow the raising of the mirror into the top channel and its subsequent lowering onto the web of the bottom channel.
         4. After installing fasteners place masking tape over the entire length of the back lip of the channel completely covering the fastener heads to protect the mirror from being chipped in setting.
            1. Adhere setting blocks to the web of the bottom mirror channels, located at quarter points, using two setting blocks per mirror panel.
   4. Mirror glazing Installation:
      1. Apply mastic in vertical beads or mounds to the wall, not to the mirror back to avoid potential damage caused by mastic applicator tools, in compliance with mastic manufacturer's written instructions to allow air circulation between back of mirrors and face of mounting surface.
      2. Each vertical bead shall be approximately 13mm (1/2") in width with a minimum of one (1) bead for every square foot of mirror.
      3. Each mound shall be approximately 38mm (1-1/2”) in width with a minimum of one (1) bead for every square foot of mirror.
      4. Do not apply mastic within 150mm (6") of the mirror edges to prevent squeeze out. Place beads or mounds so space will be left between them when the mirror is installed.
      5. After mastic is applied, align mirrors, and press into place. Each vertical bead shall spread to approximately 50mm (2") in width and each mound shall spread to a pat approximately 89mm (3-1/2") in diameter after pressing mirror into place.
   5. cleaming and PROTECTION
      1. Protect mirrored glass from breakage and contaminating substances resulting from construction operations.
      2. Using clean warm water, clean mirrors by methods recommended in referenced glazing standards.

END OF SECTION