DIVISION 6
WOODS AND PLASTICS

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DIVISION 6 – WOODS AND PLASTICS

ROUGH CARPENTRY

1. GENERAL

1.1 Work Included

.1 Wood framing.

.2 Plywood sheathing.

.3 Engineered Joists.

.4 Blocking, furring and strapping.

.5 Blocking.

.6 Miscellaneous steel sections bolted to timber including tension bolts for removable panel.

1.2 Related Work

.1 Concrete formwork — Section 03100

1.3 Quality Assurance

.1 Lumber shall bear the grading stamp of an agency certified by the Canadian Lumber Standards Administration Board.

.2 Plywood shall be identified by grade mark in accordance with the applicable CSA Standards.

2. PRODUCTS

2.1 Lumber Material

.1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:

.1 CAN/CSA 0141-Latest.

.2 NLGA Standard Grading Rules for Canadian Lumber, Latest edition.

.2 Machine stress-rated lumber is acceptable for all purposes.

.3 Framing and board lumber: in accordance with NBC Latest Subsection 9.3.2.

.4 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:

.1 Board sizes: .2 or as is or better grade.

.2 Dimension sizes: light framing or better grade.

.3 Post and timbers sizes: "Standard" or better grade.

2.2 Panel Standards

.1 Panel standards: type, grade and thickness in accordance with following standards.

.1 Douglas fir plywood (DFP): to CSA O121-Latest standard construction.

.2 Canadian softwood plywood (CSP): to CSA O151-Latest, standard construction.

.3 Interior mat-formed wood particleboard: to CAN3-O188.1-Latest.

.4 Waferboard: to CAN3-O188.2-Latest.

.5 Hardboard: to CAN/CGSB-11.3-Latest.

.6 Insulating fiberboard sheathing: to CAN/CSA-A247-Latest.

.7 Poly-isocyanurate sheathing: to CGSB 51-GP-21M.

.8 Expanded polystyrene sheathing: to CAN/CGSB-51.20-Latest.

2.3 Panel Material End Uses

.1 Roof sheathing:

.1 Plywood, DFP or CSP sheathing grade or PP standard sheathing grade, 16 mm thick as specified on the drawings, precoated to receive torch-on vapour barrier.

.2 Exterior wall sheathing:

.1 Plywood, DFP or CSP sheathing grade or PP standard sheathing grade, 12.7 mm.

.2 Suspended subflooring sheating.

.1 Preserved wood plywood of thickness show on drawings.

2.4 Roof Joists

.1 Joists shall be engineered type TJI by Trus Joist MacMillan Ltd. or JSI by Jager Industries Inc. (or equivalent) to depths/sizes/types shown on drawings. Webs shall consist of structural grade sheathing and flanges shall consist of proprietary sized and rated lumber. Glues shall be waterproof.

.2 Bridging, blocking (additional to blocking indicated on drawings and required for proprietary members) and any required accessories including hangers, shoes, tie-downs, etc. shall be by the same manufacturer as the joist supplier.

2.5 Dampproof Membrane

.1 Polyethylene film: to CAN/CGSB-51.33-M80, 0.25 mm thick.

2.6 Adhesives

.1 Subflooring adhesive: to CGSB 71-GP-26M, cartridge loaded.

2.7 Fasteners

.1 Nails, spikes and staples: to CSA B111-1974.

.2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.

.3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

.4 Wall anchors: Simpson Type HSDA hold down or approved alternate.

.5 Galvanizing: to CAN/CSA G164-M92, use galvanized fasteners for exterior work, interior highly humid areas, pressure-preservative and fire-retardant treated lumber.

.6 Joist hangers: minimum 1 mm thick sheet steel, galvanized ZF001 coating designation designed for intended use, capacity to equal or exceed rated capacity of supported member in shear.

.7 Nailing discs: flat caps, minimum 25 mm diameter, minimum 0.4 mm thick, sheet metal, formed to prevent dishing. Bell or cup shapes not acceptable.

.8 Roof sheathing H-Clips: formed "H" shape, thickness to suit panel material, type approved by Engineer.

2.8 Wood Preservative

.1 Surface-applied wood preservative: clear or copper napthenate or 5% pentachlorophenol solution, water repellant preservative.

.2 Pentachlorophenol use is restricted to building components that are in ground contact and subject to decay or insect attack only. Where used, pentachlorophenol-treated wood must be covered with two coats of an appropriate sealer.

.3 The use of Wood Preservative is for all wall bottom plates and all timber associated with the suspended subfloor.

3. EXECUTION

3.1 Construction

.1 Comply with requirements of NBC 1995 Part 9 supplemented by following paragraphs.

3.2 Erection of Framing Members

.1 Install members true to line, levels and elevations.

.2 Construct continuous members from pieces of longest practical length.

.3 Install spanning members with "crown-edge" up.

3.3 Joists

.1 Erect joists in strict accordance with the manufacturer's recommendations complete with erection and permanent bracings. Install straight and plumb. Do not field modify members.

.2 Removal of erection bracing shall be done in stages as decking installation is in progress. Maintain erection bracing in place where decking installation is not hindered. Complete stability is not achieved until permanent bracing and complete decking are installed, and bracing of the beams and joists during erection remains the responsibility of the contractor.

.3 Temporary construction loads which cause stresses beyond the design limits are not permitted.

3.4 Wall Sheathing

.1 Install wall sheathing in accordance with manufacturer's printed instructions.

3.5 Furring and Blocking

.1 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding and other work as required.

.2 Install furring to support siding applied vertically where sheathing is not suitable for direct nailing.

.3 Align and plumb faces of furring and blocking to tolerance of 1:600.

3.6 Nailing Strips, Grounds and Rough Bucks

.1 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

3.7 Fascia Backing

.1 Install fascia backing, nailers, and other wood supports as required and secure using galvanized fasteners.

3.8 Steel hardware

.1 All steel is permanent contact with timber to be galvanized.

.2 Steel angles at removable panel to be lag bolted to timber with 5 mm ø galvanized screws at not more than 400 mm 0c and not more than 150 m from any free end.

.3 Tensier bolts at removable panel to be galvanized and ship loose to install per details.

3.9 Particle Board

.1 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

3.10 Fasteners

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

.3 Use nailing disks for soft sheathing as recommended by sheathing manufacturer.

3.11 Surface Applied Wood Preservative

.1 Treat surfaces of material with wood preservative, before installation.

.2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface for minimum 3 minute soak on lumber and one minute soak on plywood.

.3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

.4 Treat all material as indicated: wood cants, fascia backing, curbs, nailers, sleepers on roof deck.

.5 All treated components founded on the top of the concrete foundation walls/reservoir tank walls or otherwise exposed or adjacent to the water containing reservoirs shall be tightly wrapped over the entire length of the member in 6 mil poly sheeting prior to being fastened to the concrete support.

3.12 Electrical Equipment Backboard

.1 Provide backboards for mounting electrical equipment as indicated. Use 19 mm thick plywood on 19 x 38 mm furring around perimeter and at maximum 300 mm intermediate spacing.

END OF SECTION

PLASTIC LAMINATES

1. GENERAL

1.1 Related Sections

.1 Section 13865 - Laboratory Equipment and Supplies.

1.2 References

.1 CAN3-A172-M79 High Pressure, Paper Base, Decorative Laminates.
.2 CSA O112.5-M1977 Urea Resin Adhesives for Wood (Room- and High-Temperature Curing).
.3 CSA O121-M1978 Douglas Fir Plywood.

1.3 Samples

.1 Submit shop drawings in accordance with section 01300 - Submittals.

1.4 Closeout Submittal Instructions

.1 Provide maintenance data for laminate work for incorporation into manual specified in Section 01730 - Operations and maintenance Manuals.

1.5 Storage and Protection

.1 Maintain relative humidity between 25 and 60% at 22°C during storage and installation.

2. PRODUCTS

2.1 Materials

.1 Laminated plastic for post forming countertop work: to CAN3-A172, Grade PF, Type LD, 1.14 mm thick. Colour selected by Engineer from manufacturer's standard range with matte finish.
.2 Laminated plastic backing sheet: supplied by same manufacturer as facing sheet; same colour and thickness as face laminate.
.3 Plywood core: to CSA O121, solid two sides, 19 mm thick.
.4 Laminated plastic adhesive: urea resin adhesive to CSA O112.5.
.5 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
.6 Sealants: as per Section 07900 - Joint Sealers.
.7 Draw bolts and splines: as recommended by fabricator.

2.2 Fabrication

.1 Comply with CAN3-A172, Appendix 'A'.
.2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.

.3 Ensure adjacent parts of continuous laminate work match in colour and pattern.
.4 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 2400 mm. Keep joints minimum 600 mm from cutouts.
.5 Form shaped profiles and bends as indicated, using post forming grade laminate to laminate manufacturer's instructions.
.6 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
.7 Apply laminate backing sheet to reverse side of core of plastic laminate work.

3. EXECUTION

3.1 Installation

.1 Install work plumb, true and square, neatly scribed to adjoining surfaces.
.2 Make allowances around perimeter where fixed objects pass through or project into laminated plastic work to permit normal movement without restriction.
.3 Use draw bolts and splines in countertop joints. Maximum spacing 450 mm oc, 75 mm from edge. Make flush hairline joints.
.4 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
.5 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant.

3.2 Protection

.1 Cover finished laminated plastic surfaces with heavy kraft paper during shipment. Protect installed laminated surfaces by approved means. Do not remove until immediately before final cleaning.

END OF SECTION

DIVISION 7
THERMAL & MOISTURE PROTECTION

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DIVISION 7 – THERMAL AND MOISTURE PROTECTION

PREFORMED METAL CLADDING/SIDING

1. GENERAL

1.1 Related Sections

.1 Section 07900 - Joint Sealers.

1.2 References

.1 American National Standards Institute (ANSI)

.1 ANSI B18.6.4-[1981], Screws, Tapping and Metallic Drive, Inch Series, Thread Forming and Cutting.

.2 American Society for Testing and Materials (ASTM)

.1 ASTM D 2369-[98], Standard Test Method for Volatile Content of Coatings.

.2 ASTM D 2832-[92(R1994)], Standard Guide for Determining Volatile and Nonvolatile Content of Paint and Related Coatings.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-93.2-[M91], Prefinished Aluminum Siding, Soffits and Fascia, for Residential Use.

.2 CGSB 93.5-[92], Installation of Metal Residential Siding, Soffits and Fascia.

.4 Canadian Standards Association (CSA)

.1 CSA B111-[1974], Wire Nails, Spikes and Staples.

.5 Environmental Choice Program ECP

.1 ECP-45-[92], Sealants and Caulking Compounds.

.2 ECP-69-[94], Polyethylene Plastic Film Products.

1.3 Samples

.1 Submit samples in accordance with Section 01300 - Submittals.

.2 Submit duplicate 600 x 600 mm samples of siding material, of colour and profile specified.

1.4 Shop Drawings

.1 Submit shop drawings in accordance with Section 01300 - Submittals.

.2 Indicate dimensions, profiles, attachment methods, schedule of wall elevations, trim and closure pieces, soffits, fascia, metal furring, and related work.

1.5 Waste

.1 Separate used metal cut-offs from landfill and dispose in accordance with City Disposal requirements.

.2 Divert unused caulking, sealants, and adhesive materials from landfill in accordance with City requirements.

.3 Place materials defined as hazardous or toxic waste in designated containers.

.4 Ensure emptied containers are sealed and stored safely for disposal away from children.

2. PRODUCTS

2.1 Steel Cladding

.1 Strip siding: to CGSB 93.4, Type [A] [B]and Components vertical, Class plain.

.1 Finish coating: Class F1S.

.2 Colour and Gloss: to match existing.

.3 Gloss: medium.

.4 Thickness: 0.61 mm base metal thickness.

.5 Profile: Vicwest CL435.

.6 Colour: selected by Engineer from manufacturers standard range.

2.2 Interior Steel Cladding

.1 Interior metal liner cladding: Profile: Colonial Siding, prepainted, 28 ga. Colour" QC 317 Bone White.

2.3 Accessories

.1 Exposed trim: inside corners, outside corners, cap strip, drip cap, undersill trim, starter strip and window/door trim of same material, colour and gloss as cladding, with fastener holes pre-punched.

2.4 Fasteners

.1 Screws to ANSI B18.6.4. Purpose made aluminum alloy.

2.5 Caulking

.1 Sealants: as per Section 07900.

.1 Test for acceptable VOC emissions in accordance with ASTM D 2369 and ASTM D

2832.

.2 Acceptable materials: Environmental Choice Certification Program ECP-45.

3. EXECUTION

3.1 Installation Instructions

.1 Install cladding in accordance with CGSB 93.5, and manufacturer's written instructions

.2 Install continuous starter strips, inside [and outside] corners, edgings, soffit, drip, cap, sill and window/door opening flashings as indicated.

.3 Install outside corners, fillers and closure strips with carefully formed and profiled work.

.4 Install fascia cladding as indicated.

.5 Maintain joints in exterior cladding, true to line, tight fitting, hairline joints.

.6 Attach components in manner not restricting thermal movement.

.7 Caulk junctions with adjoining work with sealant. Do work in accordance with Section 07900 - Joint Sealers.

END OF SECTION

1. GENERAL

1.1 Related Work

.1 Sheet Metal Roofing: Section 07610

.2 Metal Flashings and Trim: Section 07620

.3 Joint Sealers: Section 07900

1.2 Product Handling and Storage

.1 Deliver and store materials until incorporation into work in original wrappings, bearing manufacturer and product names and relevant standards.

.2 Protect polystyrene insulation from direct sunlight after each day's operation.

1.3 Job Conditions

.1 Protection:

.1 Protect work of other Sections from damage.

.2 Protect completed portions of work from damage due to traffic and materials handling until completion of work.

.3 At the end of each days work, seal and make watertight exposed edges of roofing and insulation.

2. PRODUCTS

2.1 Materials

.1 Polyethelene sheet vapour barrier: to CAN/CGSB-51.34, 0.025 mm thickness, under slab.

.2 Air/Vapour barrier:

.1 Sopralene Flam 180 as manufactured by Soprema.

.2 Weather Barrier: spun bound plefin manufactured from vary fine continuous filaments of high density polyethylene (HDPE) bonded together by heat and pressure.

.3 Thermal Insulation:

.1 Expanded polystyrene: to CAN/CGSB-51.20-M87 Type 1 and 2 for roof, type 2 for walls, Type 4 under slab. Roof insulation two layers for total thickness of 200 mm, RSI 7.0 total. Wall insulation, two layers, 75 mm thickness for total thickness of 150 mm. Slab insulation, 2 layers 75 mm thickness for total thickness of 150 mm.

.2 Square edged and shiplapped as indicated.

.4 Roof Sheathing:

.1 Douglas Fir plywood 15.9 mm thick tongue and groove to CSA O121-M1978 (R1998),

unsanded sheathing grade, pre-primed.

.5 Wall Sheathing:

.1 Douglas Fir CSA 0121-M1978 unsanded grade sheathing, 12.7 mm thickness, prep rimed at joints.

.6 Fastening system:

.1 Spacer bars: Z-shaped, minimum 1.3 mm thick height to suit insulation thickness, formed galvanized sheet steel to ASTM A 446/A 446M-93 grade A, zinc coating designation Z275 bottom flange 50 mm wide and top flange 64 mm wide.

.2 Perimeter framing: L or C shaped, to match Z girts as required.

.7 Spray foam insulation:

.1 Frothpack foam FRD by Instafoam Products or acceptable alternate to fill voids.

.8 Girt Fasteners: epoxy coated 4 mm diameter steel screws, 140 mm long.

.9 Sheathing Fasteners: 4 mm diameter galvanized flat head self tapping screw.

.10 Insulation Base Layer Fasteners: galvanized flat head screws, 125 long, with 75 mm square or round galvanized steel insulation plate.

3. EXECUTION

3.1 Preparation

.1 Examine materials over which work of this Section is applied and ensure that substrates are free of loose or adhering materials which would impair this work.

.2 Substrate shall be clean, dry and suitable for membrane application.

.3 Start of work of this section shall indicate acceptance of substrate conditions.

3.2 Roof Vapour Barrier

.1 Ensure all roof penetrations are in place before air/vapour barrier is applied.

.2 Touch up pre-primed sheathing in accordance with manufacturer's directions to solid black in colour.

.3 Over primed plywood deck install torch on air/vapour barrier membrane.

.4 Installed air/vapour barrier shall be torched on to form a complete and continuous membrane over the roof and wall connection, sealed at all joints and penetrations. Seal all roof penetrations with double layer of membrane. On wall install 150 mm width strips over all joints providing a continuous air/vapour barrier.

.5 Sequence wall and roof air/vapour as indicated to ensure positive air seal at junctions.

.6 Apply air/vapour material parallel to roof slopes. Make laps so that flow of water is over them and never against. Reinforce peaks and valleys in roof to membrane manufacturer's recommendations.

3.3 Roof Insulation

.1 Install insulation in two layers.

.2 Install first level of insulation ship lapped edged, running with roof slope and adhere with insulation base layer fasteners and/or SBS modified mastic sufficient to secure until subsequent layers of insulation and Z-girts are installed. Fill all voids with spray foam insulation.

.3 Install Z-girts screw fastened at 600 mm o.c. through to wood deck, perpendicular to roof slope.

.4 Remove any fasteners which penetrate exposed wood deck.

.5 Install second layer of butt edged insulation butting boards tight to Z-girts and to each other so that no gaps or voids exist. Fill all voids with spray foam insulation.

3.4 Roof Sheathing

.1 Over roof insulation, install 'weather barrier'. Lap and seal joints with tape recommended by weather barrier manufacturer.

.2 Over weather barrier, install prefinished metal roofing, secured to Z girts with screw fasteners c/w with neoprene washers.

3.5 Membrane Flashing

.1 Provide membrane flashings at the intersection of roof membrane flashings and walls, curbs and wherever vertical members pass through the roof made from base and cap material described above.

.2 Ensure that substrates are dry, smooth, even and primed.

.3 Ensure that provision is made for top nailing the membrane flashing.

.4 Lap all joints in membrane flashing a minimum of 300 mm. Roll Lightly.

3.6 Overall Appearance

.1 Contractor to check all lap joints, as work progresses, for water tightness, integrity and continuity. Any necessary repair work is to be done on the same working day that the lap joints are made, ie., perform cut tests, check laps from bleed out, etc.

.2 Avoid entrapped air and or moisture under membrane.

.3 Buckling not acceptable.

.4 Side laps to be in straight lines.

.5 Maintain specified side laps and end laps and staggering of laps between membranes.

.6 Avoid excessive (over 12.7 mm) overflow and torch/flame damage at joints (a slight

overflow is desirable to indicate proper seal).

.7 Use only tradesmen who are experienced in this work.

END OF SECTION

SHEET METAL ROOFING

1. GENERAL

1.1 References

.1 Aluminum Association (AA)
  .1 Aluminum Association Designation System for Aluminum Finishes-1980.
  .2 Aluminum Association Aluminum Sheet Metal Work in Building Construction-1971.

.2 Canadian General Standards Board (CGSB)
  .1 CAN/CGSB-93.1- M85, Sheet, Aluminum Alloy, Prefinished, Residential.

1.2 Product Data

.1 Submit product data in accordance with Section 01300 - Submittals.
.2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Division 1 requirements.

1.3 Shop Drawings

.1 Submit shop drawings in accordance with Section 01300 - Submittals.
.2 Indicate arrangements of sheets and joints, types and locations of fasteners and special shapes and relationship of panels to structural frame.

1.4 Samples

.1 Submit samples in accordance with Section 01330 - Submittals.
.2 Submit duplicate 600 x 600 mm samples of each sheet metal material.

1.5 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with City requirements.
.2 Use the least toxic sealants, and adhesives necessary to comply with requirements of this section.
.3 Close and seal, tightly, all partly used sealant and adhesive containers and store protected in well ventilated, fire-safe area at moderate temperature.

2. PRODUCTS

2.1 Prefinished Sheet Steel

.1 VOC content for surface coatings and touch up coatings for prefinished metal sheet maximum 250 g/L.
.2 Surface coatings and touch up coatings manufactured or formulated without aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavelant chromium and their compounds will be acceptable for use on this project.
.3 Prefinished steel with factory applied polyvinylidene fluoride.
  .1 Class F1S.

.2 Thickness: 0.61 mm base thickness.
.3 Profile: Vicwest CL435.
.4 Colour selected by Engineer from manufacturer's standard range to match existing roof.
.5 Coating thickness: not less than 25 micrometres.
.6 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822 as follows:
.1 Outdoor exposure period 1000 hours.
.2 Humidity resistance exposure period 1000 hours.

.4 Sealant: EcoLogo certified, not containing a total of volatile organic compounds in excess of 5 % by weight, asbestos-free sealant, compatible with systems materials, recommended by system manufacturer.
.5 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
.6 Touch-up paint: as recommended by sheet metal roofing manufacturer.

2.2 Fabrication

.1 Form individual pieces in 2400 mm maximum lengths. Make allowances for expansion at joints.
.2 Hem exposed edges on underside 12 mm, miter and seal.
.3 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
.4 Apply minimum 0.2 mm dry film thickness coat of plastic cement to both faces of dissimilar metals in contact.
.5 Protect metals against oxidization by back painting with isolation coating where indicated.
.6 Tin edges of copper sheets to be soldered for width of 40 mm both sides with solder.

3. EXECUTION

3.1 Installation

.1 Use concealed fastenings except where approved by Engineer before installation.
.2 Install sheet metal roof panels using screw fasteners spaced as per manufacturers printed instructions.
.3 Stagger transverse seams in adjacent panels.
.4 Flash roof penetrations with material matching roof panels, and make watertight.
.5 Form seams in direction of water-flow and make watertight.

END OF SECTION

SHEET METAL FLASHING and TRIM

1. GENERAL

1.1 Related Sections

.1 Section 07610 - Sheet Metal Roofing.

.2 Section 09911 - Interior Painting.

1.2 References

.1 Canadian Roofing Contractors Association (CRCA).

.1 Roofing Specifications Manual.

.2 Canadian Standards Association (CSA)

.1 CSA B111-1974, Wire Nails, Spikes and Staples.

.3 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-93.1-M85, Sheet, Aluminum Alloy, Prefinished, Residential

1.3 Samples Procedures

.1 Submit shop drawings in accordance with Section 01330 - Submittals.

.2 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, colour and finish.

1.4 Waste Management and Disposal

.1 Separate waste materials in accordance with City requirements.

2. PRODUCTS

2.1 Prefinished Sheet Steel

.1 Prefinished steel with factory applied polyvinylidene fluoride.

.1 Class F1S F2S.

.2 Colour selected by Engineer from manufacturer's standard range.

.3 Specular gloss: 30 units +/- in accordance with ASTM D 523.

.4 Coating thickness: not less than 22micrometres.

.5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate less than 20 % to ASTM D 822 as follows:

.1 Outdoor exposure period 2500 hours.

.2 Humidity resistance exposure period 5000hours.

2.2 Accessories

.1 Isolation coating: alkali resistant bituminous paint.

.2 Plastic cement: to CAN/CGSB 37.5-M89.

.3 Sealants: As per section 07900-Joint Sealers.

.4 Cleats: of same material and temper as sheet metal, minimum 50 mm wide.

.5 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.

.6 Washers: of same material as sheet metal, 1 mm thick with rubber packings.

.7 Touch-up paint: as recommended by prefinished material manufacturer.

2.3 Fabrication

.1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details.

.2 Fabricate aluminum flashings and other sheet aluminum work in accordance with Aluminum Association Aluminum Sheet Metal Work in Building Construction.

.3 Form pieces in 2400 mm maximum lengths. Make allowance for expansion at joints.

.4 Hem exposed edges on underside 12 mm. Miter and seal corners with sealant.

.5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

3. EXECUTION

3.1 Installation

.1 Install sheet metal work in accordance with CRCA FL series details.

.2 Use concealed fastenings except where approved before installation.

.3 Lock end joints and caulk with sealant.

END OF SECTION

FIRE PROOFING

1. GENERAL

1.1 Related Work

.1 Fire stopping and smoke seals within mechanical assemblies (i.e inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Division 15 and 16 respectively.

1.2 References

.1 Underwriter's Laboratories of Canada (ULC)
  .1 ULC-S115-1995(R2001), Fire Tests of Fire stop Systems.

1.3 Samples

.1 Submit samples in accordance with Section 01300 - Submittals.

.2 Submit duplicate 300 x 300 mm samples showing actual fire stop material proposed for project.

1.4 Shop Drawings

.1 Submit shop drawings in accordance with Section 01300 - Submittals.

.2 Submit shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details should accurately reflect actual job conditions.

1.5 Product Data

.1 Submit product data in accordance with Section 01300 - Submittals.

.2 Submit manufacturer's product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site. Include manufacturer's printed instructions for installation.

2. PRODUCTS

2.1 Materials

.1 Fire stopping and smoke seal systems: in accordance with ULC-S115-1995(R2001).

  .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ULC-S115-1995(R2001) and not to exceed opening sizes for which they are intended.

.2 Service penetration assemblies: certified by ULC in accordance with ULC-S115-1995(R2001) and listed in ULC Guide No.40 U19.

.3 Service penetration fire stop components: certified by ULC in accordance with ULC-S115-1995(R2001) and listed in ULC Guide No.40 U19.13 and ULC Guide No.40 U19.15 under the Label Service of ULC.

.4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.

.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.

.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.

.7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.

.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.

.9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

.10 Sealants for vertical joints: non-sagging.

3. EXECUTION

3.1 Preparation

.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.

.2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.

.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 Installation

.1 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.

.2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to a neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

3.3 Inspection

.1 Notify Engineer when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

3.4 Schedule

.1 Fire stop and smoke seal at:

.1 Penetrations through fire-resistance rated gypsum board partitions and walls.

.2 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.

.3 Openings and sleeves installed for future use through fire separations.

.4 Around mechanical and electrical assemblies penetrating fire separations.

.5 Rigid ducts: greater than 129 cm^2: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

3.5 Clean Up

.1 Remove excess materials and debris and clean adjacent surfaces immediately after application.

.2 Remove temporary dams after initial set of fire stopping and smoke seal materials.

END OF SECTION