PART 1 GENERAL

1.1 Surface Preparation

.1 Surfaces to receive insulation shall be dry, clean and free from irregularities and loose or adhering materials, oil, grease, dirt or any substance which could affect the permanence or effectiveness of the insulation.

1.2 Product Handling

.1 Do not leave polystyrene type insulation exposed to sunlight over prolonged periods. Keep insulation covered with opaque polyethylene film or light coloured tarpaulins at all times.

.2 Sun degraded polystyrene insulation will not be accepted.

.3 Store insulation materials dry in original undamaged containers with manufacturer's labels and seals intact.

.4 Prevent damage to materials during handling and storage on job site.

.5 Wet or otherwise damaged insulation materials will not be accepted.

PART 2 PRODUCTS

2.1 Perimeter Foundation Insulation

.1 Rigid expanded polystyrene board: Styrofoam SM by Dow Chemical Canada Inc., or Consultant-approved equal, to CAN/CGSB-51.20-M87, to thickness shown on the Drawings.

2.2 Wall Insulation – Boards

.1 Rigid expanded polystyrene board, meeting CAN/CGSB-51.20-M87, Type 4, Styrofoam SM by Dow Chemical Canada Inc., or Consultant-approved equal, in 600 x 2400 mm size boards to thickness shown on the Drawings.

2.3 Adhesive

.1 For polystyrene insulation, other than in cavity walls: Flintstik 210-54 as manufactured by Flintkote of Canada Ltd., or Consultant-approved equal, to CGSB 71-GP-24M.

2.4 Batt Insulation

.1 Insulation in stud framing: friction fit stud insulation by Fiberglas Canada Inc., or Consultant-approved equal, fibreglass batts to CSA A101-M1983, Type 1, to minimum insulation value RSI 2.10, unless otherwise indicated on the Drawings.

PART 3 EXECUTION

3.1 General

.1 Apply insulation in thickness and number of layers indicated on the Drawings and as recommended by the manufacturer.

.2 In multiple layer work, stagger all joints in both directions, unless otherwise specified, and butt all edges tightly.

3.2 Perimeter Foundation Insulation

.1 Apply insulation vertically to face of perimeter foundation walls as indicated on Drawings, and secure with adhesive. Butt boards tightly together, leaving no gaps.

.2 Backfill to be placed against insulation to hold in position. Place backfill carefully to avoid displacing boards. Insulation to have direct contact with foundation wall.

.3 Under slab application: extend boards 600 mm in from perimeter foundation wall. Lay boards on level compacted fill, with joints butted in moderate contact.

3.3 Wall Insulation - Boards

.1 Insulation and adhesives shall be applied in strict accordance with the manufacturer's recommendations, and the following:

.1 Apply wall insulation to the surface of the exterior walls as detailed.

.2 Butt insulation boards square, tight and with dry joints, stagger end joints between each course.

.3 Seal joints with tape and fill gaps around penetrations for air tight envelope.

3.4 Vapour Barrier

.1 Install vapour barrier on warm side of insulation.

.2 Use sheets of largest practical size to minimize joints.

.3 Inspect sheets for continuity. Repair punctures and tears with sealing tape before work is completed.

.4 At exterior surface openings, cut vapour barrier to form openings and ensure material is lapped and sealed to frames.

.5 Lap joints 150 mm. Seal lap joints and perimeters by bedding vapour barrier on continuous sealant bead, by taping, or combination of both to provide integral barrier.

.6 Seal electrical switch and outlet device boxes as follows:

.1 Install moulded box vapour barrier, or wrap boxes with polyethyene film sheet providing minimum 300 mm perimeter lap flange.

.2 Apply sealant to seal edges of flange to main vapour barrier and seal wiring penetrations through box cover.

.7 At parapets and in exterior work wherever indicated or required to maintain continuity between differing membranes and barriers:

.1 Install foil type vapour barrier and tape seal all joints in strict accordance with the manufacturer's recommendations.

.2 Ensure that vapour barrier properly overlaps other membranes and barriers to provide full coverage to building envelope.

3.5 Completion

.1 Upon completion of the work of this Section, clean up and remove from the premises all rubbish, surplus materials, tools, plant and equipment associated with the work of this Trade.

.END OF SECTION

PART 1 GENERAL

1.1 References

.1 Design, fabricate and install metal roofing and soffit system in accordance with CSA Specification S136, the Nunavut Building Code, and the Canadian Sheet Steel Building Institute Standards (CSSBI).

1.2 Samples

.1 Submit material samples of manufacturer's complete range of standard colours for Consultant's selection.

1.3 Shop Drawings

.1 Submit Shop Drawings in accordance with Section 01340.

.2 Indicate dimensions, details, metal roofing and soffit profiles, attachment methods, roof plan, underlayment, fascias, trim, flashings, closure pieces, and related work.

1.4 Design Criteria

.1 Design complete roof and soffit system to safely withstand dead loads, snow load and build-up, and wind loads including uplift, calculated in accordance with the Nunavut Building Code.

.2 Design structural properties of steel component to CSA Specifications S136.

.3 Design system to allow for thermal movement of components caused by ambient temperature range expected in locality, without causing deterioration of system.

1.5 Protection

.1 Protect prefinished steel during fabrication, transportation, site storage and erection, in accordance with CSSBI Standards.

1.6 Job Conditions

.1 Report to the Consultant in writing, defective surfaces prepared by other trades which affect the work of this Section. Commencement of work shall imply acceptance of surfaces.

PART 2 PRODUCTS

2.1 Acceptable System

.1 System specified is based on products of VicWest Steel Inc.

.2 Comparable systems of following manufacturers conforming to the requirements of this Section are acceptable:

.1 Peerless Enterprises

.2 Robertson

.3 Consultant-approved equal.

2.2 **Materials**

.1 Preformed Roof Sheet:

.1 Vicwest "Marquis", minimum 0.61 mm base steel thickness, Z275 zinc coated, Grade "A" to ASTM A 446/A 446M-93, prepainted on exposed surface.

.2 Profile: Interlocking batten ribs at 450 mm centres.

.2 Roof Sheet Anchorage:

.1 Concealed fastener, purpose-made thermally responsive clip system, designed to allow full thermal expansion and contraction of roof sheet. Provide clip with minimum Z275 zinc coating.

.2 Fasteners to secure concealed clips: Corrosion resistant steel screws as recommended by manufacturer, in lengths not to exceed thickness of plywood substrates.

.3 Sealants: In accordance with roofing system manufacturer's recommendation.

.4 Flashings: Materia l, coating and finish to match roof sheet and soffit panels.

.5 Closures: As recommended by manufacturer.

2.3 **Finish**

.1 Roof sheet, soffits, all exposed metal flashings and trim members: Dofasco 8000 Series prepainted finish in colours selected by Consultant.

2.4 **Fabrication**

.1 Fabricate roof and soffit components to comply with dimensions, profiles, gauges and details in accordance with the reviewed Shop Drawings.

.2 Fabricate roof and soffit components factory-ready for field installation.

.3 Fabricate roof sheets for each run in single length without laps.

.4 Provide factory-applied sealant in female side of interlocking roof and soffit sheets.

PART 3 EXECUTION

3.1 **Co-operation**

.1 Co-operate with all trades to ensure rapid installation of this work as soon as preceding work is ready to receive same.

.2 Give timely instructions and information in writing of the requirements necessary for surfaces, materials or bases prepared and/or supplied by other trades which will affect the work of this Section.

.3 Pay for any cutting, patching or making good required as a result of failure to carry out the provisions of this Clause.

3.2 Underlayment

.1 Examine and ensure plywood substrates are clean, smooth and free of loose nails and protrusions.

.2 Apply membrane underlayment to entire surface of plywood substrates overlapping ends and edges minimum of 150 mm.

.3 Complete installation to provide a fully effective secondary waterproofing and water shedding system.

3.3 Roofing System

.1 System to be installed by manufacturer's erection forces, or an agent authorized by the manufacturer. submit manufacturer's written approval of agent to Consultant, prior to commencing work.

.2 Perform installation in accordance with the reference standards, reviewed Shop Drawings and the manufacturer's recommendations.

.3 Provide notched and formed closures where necessary to seal system against weather penetration.

.4 Install soffit and gable ventilators with perimeter flanges in full contact with mounted surfaces. Equally space soffit ventilators to provide for proper cross- ventilation of the attic space.

.5 Install all required flashings and trim to provide a weathertight installation.

.6 Ensure metal joints are water shedding and properly sealed.

.7 Provide for drainage continuously along lower end of membrane underlayment.

.8 Exposed fasteners where approved by Consultant are to be same colour as material fastened.

.9 Do not install damaged materials which will impair performance or appearance of finished system.

3.4 Cleaning

.1 Upon completion of the installation, clean down all preformed metal panels and flashings and leave all work installed under this Section clean.

END OF SECTION

PART 1 GENERAL

1.1 References

.1 Structural properties of steel panels shall be in accordance with CSA Specification S136, the Ontario Building Code, and the Canadian Sheet Steel Building Institute Standards.

1.2 Samples

.1 Submit material samples of manufacturer's complete range of standard colours for Consultant's selection.

1.3 Shop Drawings

.1 Submit Shop Drawings in accordance with Section 01340.

.2 Indicate dimensions, siding profiles, attachment methods, schedule of wall elevations, trim, closure pieces and related work.

1.4 Job Conditions

.1 Report to the Consultant in writing, defective surfaces prepared by other trades which affect the work of this Section. Commencement of work shall imply acceptance of surfaces.

PART 2 PRODUCTS

2.1 Acceptable Systems

.1 System specified is based on products of VicWest Steel Inc.

.2 Comparable systems of following manufacturers conforming to the requirements of this Section are acceptable:

.1 Peerless Enterprises

.2 Robertson

.3 Consultant-approved equal.

2.2 Materials

.1 Preformed metal siding shall consist of the following components:

.1 Preformed face sheets: VicWest Profile CC725, of zinc-coated steel, minimum core nominal thickness of 0.91 mm (22 GA) to ASTM Specification A446, latest revision, Grade "A", with zinc coating designation of Z275 each side and prepainted on exposed surfaces.

.2 Interior panels: VicWest Profile CL840, of zinc-coated steel, core nominal thickness of 0.91 mm (22 GA) to ASTM Specification A446, latest revision, Grade "A", with zinc coating designation of Z275 on each side and prepainted on exposed surfaces.

.3 Subgirts: "Z Bars", or channel profile fabricated from galvanized steel of gauge recommended by the manufacturer.

.4 Caulking compounds: of type recommended by siding manufacturer.

.5 Flashings and trim: same material, gauge and finish as sidin g panels.

.6 Coping flashings: Provide all necessary flat material, as required for exposed coping flashings, in same gauge, material and finish as siding panels, for fabrication and installation under Roofing Section.

.7 Fasteners: non-corrosive steel of type and size recommended by siding manufacturer. Exposed fasteners to colour match siding secured.

2.3 Design

.1 The metal panels shall be designed to support positive and negative wind loads in accordance with the National Building Code. Deflection shall not exceed 1/180th of the span unless noted otherwise on the drawings. Allowable stress shall not exceed 138 MPa for the steel exterior element and in any case shall not exceed the values permitted by CSA Specification CSA S136-94.

.2 Permeance rating through the panel shall not exceed one perm.

.3 Test data verifying the above structural, thermal and permeance characteristics shall be submitted to the Consultant upon request.

2.4 Finish

.1 Exterior siding panels, flashings, trim members, and liner panels, shall have a Dofasco 8000 series baked enamel prepainted finish in colours selected by the Consultant.

2.5 Fabrication

.1 The metal panels shall be assembled so as to provide a continuous protected dustproof sealed side joint. The female side of the liner sheet shall be factory pressure caulked to permit the liner sheet to perform as a vapour barrier.

.2 In all cases, the flashings on both the interior and exterior of the metal panels shall be of the same material, gauge and finish as the respective elements, unless otherwise noted on the Drawings.

.3 Metal closures shall be placed at the top and bottom of all vertical panel runs.

.4 The interior and exterior sheets of the metal panels shall be of roll-form manufacture. Press-breaking of these units is not acceptable.

PART 3 EXECUTION

3.1 Co-operation

.1 Co-operate with all trades to ensure rapid installation of metal panels and flashings as soon as preceding work is ready to receive same.

.2 Give timely instructions and information in writing of the requirements necessary for surfaces, materials or bases prepared and/or supplied by other trades which will affect the work of this Section.

.3 This Contractor shall bear the cost of any cutting, patching or making good required as a result of failure to carry out the provisions of this Clause.

3.2 Installation

.1 All metal panels shall be installed by the manufacturer's erection forces, or an agent authorized by the manufacturer. Submit manufacturer's written approval of agent to Consultant, prior to commending work.

.2 Install siding in accordance with the reference standards, reviewed Shop Drawings and the siding manufacturer's recommendations.

.3 A ribbon of joint sealing compound shall be laid on the face of the structural supports at the top and bottom of all wall panels to provide an adequate tight seal.

.4 Install insulation, align exterior panels and attach to subgirts with non-corrosive fasteners of colour to match siding.

.5 No laps will be permitted on any areas of preformed metal siding; siding shall be full wall height to the extent shown on the Drawings.

.6 Install all required flashings and trim to provide a weathertight installation. Coping flashings only will be fabricated and installed under Roofing Section from material supplied under this Section.

.7 Do not install damaged materials which will impair the performance or appearance of the finished wall system.

3.3 Cleaning

.1 Upon completion of the installation, clean down all preformed metal siding panels soffits and flashings and leave all work installed under this Section clean.

END OF SECTION

PART 1 GENERAL

1.1 References

.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 Divisions 15 and 16, respectively.

1.2 Samples

.1 Submit samples in accordance with Section 01340.

1.3 Shop Drawings

.1 Submit Shop Drawings and product data in accordance with Section 01340.

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

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

PART 2 PRODUCTS

2.1 Materials

.1 Fire stopping and smoke seal systems: in accordance with ULC-S115-M95.

.1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ULC-S115-M95 and not to exceed opening sizes for which they are intended.

.2 Firestop system rating: as indicated on Drawings.

.2 Service penetration assemblies: certified by ULC in accordance with ULC-S115-M95 and listed in ULC Guide No. 40 U19.

.3 Service penetration firestop components: certified by ULC in accordance with ULC-S115-M95 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 not less than the fire-resistance rating of surrounding floor and wall assembly.

.5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal; do not use cementitious or rigid seal at such locations.

.6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal; do not use a cementitious or rigid seal at such locations.

.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.

PART 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 interuption 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 Consultant when ready for inspection and prior to concealing or enclosing firestopping materials and service penetration assemblies.

3.4 Schedule

.1 Firestop and smoke seal at:

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

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

.3 Around mechanical and electrical assemblies penetrating fire separations.

.4 Rigid ducts: greater than 129 cm: 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

Contents

PART 1 GENERAL

1.1 References

.1 Canadian Steel Door and Frame Manufacturers' Association (CSDFMA), "Specifications for Commercial Steel Doors and Frames", latest edition.

1.2 Requirements of Regulatory Agencies

.1 Steel fire rated doors and frames: listed and labelled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104-M80(R1985) and CAN4-S105-M85(R1992) for ratings specified or indicated.

.2 Install labelled steel fire rated doors and frames to ANSI/NFPA 80-1998 except where specified otherwise.

1.3 Shop Drawings

.1 Submit Shop Drawings in accordance with Section 01340.

.2 Indicate each type of door and frame, material, steel core thickness, reinforcements, location of exposed fasteners, arrangement of hardware.

.3 Indicate details of construction and installation of all components of the work.

.4 Include schedule identifying each unit, with door marks and numbers relating to numbering on the Drawings.

1.4 Warranty

.1 Materials and workmanship shall be warranted by manufacturer in accordance with CSDFMA Standard Warranty for Steel Doors and Frames.

PART 2 PRODUCTS

2.1 Materials

.1 Acceptable materials: all and only steel frame products manufactured by CSDFMA members are eligible for use on this project.

.2 Steel: Commercial grade steel to ASTM A 568/A568M-98e1, Class 1, hot-dip galvanized to ASTM A 527/A 527M-90, coating designation to ASTM A 525-93, ZF75 (A25), known commercially as "Colourbond", "Satincoat" or "Galvanneal".

.3 Fire-rated doors and frames: Material and construction in accordance with listing requirements. Doors to be flush type with no face seams.

.4 Interior doors other than fire-rated:

.1 Door faces: 1.2 mm base thickness steel sheet, flush type, with no face seams.

.2 Door core: structural honeycomb type consisting of impregnated kraft paper having small cell size completely filling inside of door and laminated under pressure to face sheets.

.5 Exterior doors:

.1 Faces: 1.6 mm base thickness steel sheet, flush type, with no face seams.

.2 Core: Solid slab of polyurethane insulation completely filling inside of door and bonded under pressure to face sheets.

.6 In addition to exterior locations, use insulated doors where indicated in Door Schedule.

.7 Frames:

.1 Interior masonry door, borrowed light frames: 1.6 mm thick base steel.

.2 Drywall door, borrowed light frames: 1.2 mm thick base steel.

.3 Exterior door frames: 1.6 mm thick base steel, thermal break assembly.

.8 Anchors:

.1 Fire rated frames: thickness and design in accordance with labelling requirements.

.2 Non-rated frames: type, thickness and size as recommended by frame manufacturer.

.9 Accessories (doors and frames) and minimum base steel thickness:

.1 Lock/strike reinforcements: 1.6 mm

.2 Hinge reinforcements: 2.7 mm

.3 Flush bolt reinforcements: 1.6 mm

.4 Reinforcements for surface applied hardware: 1.2 mm

.5 Top or bottom channels: 1.2 mm

.6 Steel top caps: 0.9 mm

.7 Glass trim, screw fixed or snap-in types: 0.9 mm

.8 Mortar guard boxes: 0.8 mm

.9 Floor anchors: 1.6 mm

.10 Jamb spreaders: 0.9 mm .

.10 Glass and glazing materials: as specified under Section 08800.

2.2 Fabrication

.1 Fabricate doors and frames in accordance with reference standards, reviewed Shop Drawings and listing requirements.

.2 Fabricate doors with edges mechanically interlocked with visible seams.

.3 Bevel hinge and lock edges of doors, 3 mm in 50 mm.

.4 Provide welded frames for all interior doors, and borrowed light openings and for exterior door openings:

.1 Cut mitres and joints accurately and weld continuously on inside of frame profile.

.2 Grind welded corners and joints to flat plane, fill with metallic paste filler and sand to uniform smooth finish.

.5 Provide adjustable jamb anchors for fixing at floor to inside of each jamb profile.

.6 Provide one adjustable tension anchor and snap-in base anchor in each jamb for anchoring in drywall.

.7 Provide accurately fitted stops in glazed openings, butted at corners and fastened to frame sections with countersunk oval head sheet metal screws.

.8 Provide three "EMA" type steel anchors per jamb for anchoring to concrete. Secure jambs with flat head countersunk screws into expansion shields.

.9 Provide two welded channel or angle spreaders per frame at bottom of opening to ensure proper frame alignment, except for knock-down type frames.

.10 Protect strike and hinge reinforcements using guard boxes welded to frames.

.11 Fabricate thermally broken frames for exterior work with polyvinyl chloride thermal breaks separating interior and exterior portion of frame sections.

.12 Welding of thermally broken frames must not cause thermal transfers between exterior and interior surfaces of frame sections.

.13 Mortise, reinforce, drill and tap doors and frames and reinforcements to receive hardware using templates provided by finish hardware supplier.

.14 Provide three bumpers on strike jamb for each single door and two bumpers at head for pairs of doors for installation after finish painting.

.15 Make provisions for louvres and glazing as indicated, and provide necessary glazing stops.

.16 Touch up galvanized finish damaged during fabrication.

PART 3 EXECUTION

3.1 Installation General

.1 Install fire-rated doors and frames in accordance with National Fire Codes, Volume 4, produced by National Fire Protection Association (ANSI/NFPA 80-1998.

3.2 Frame Installation

.1 Set plumb, square, level and at correct elevation.

.2 Anchor to adjacent construction.

.3 Brace while building-in. Install temporary horizontal wood spreaders at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders and supports after frames are built-in.

.4 Make allowance for deflection to ensure structural loads are not transmitted to frames.

3.3 Door Installation

.1 Install doors and hardware in accordance with templates and manufacturer's instructions.

.2 Provide even margins between doors and jambs and doors and flooring and thresholds as follows:

.1 Hinge side: 1.0 mm.

.2 Latchside and head: 1.5 mm.

.3 Flooring and thresholds: 13 mm.

.3 Adjust operable parts for correct function.

.4 Install vinyl top caps in outswinging exterior doors for weather protection.

3.4 Glazing

.1 Glaze doors with type of glass indicated.

.2 Glass and glazing work is specified under Section 08800.

END OF SECTION

PART 1 GENERAL

1.1 Design

.1 Design aluminum windows to:

.1 Accommodate expansion and contraction within service temperature range expected in locality.

.2 Limit deflection to maximum 1/175th of the span, under design loads in accordance with requirements of Nunavut Building Code.

1.2 Performance

.1 Design aluminum windows to meet or exceed air and water infiltration performance criteria of the applicable CGSB Specifications.

.2 Submit test reports on request of the Consultant.

1.3 Samples

.1 Submit samples in accordance with Section 01340.

.2 Include 150 mm long samples of head, jamb, sill and mullions to indicate profile.

1.4 Shop Drawings

.1 Submit Shop Drawings in accordance with Section 01340.

.2 Indicate materials and details in scale full size for head, jamb and sill, profiles of components, elevations of unit, anchorage details, location of isolation coating, description of related components, exposed finishes, fasteners, and caulking.

1.5 Maintenance Data

.1 Provide maintenance data for windows for incorporation into manual specified in Section 01730.

1.6 Product Handling

.1 Deliver, store and handle units by methods approved by the window system manufacturer.

.2 Store units at site on wood platforms raised above grade in enclosures protected from the elements and corrosive materials.

.3 Store units in manner to prevent racking.

.4 Do not remove crates or protective coverings until units are ready for installation.

1.7 **Protection**

.1 Protect work of this Section during erection against disfiguration, damage or contamination from harmful materials.

.2 Protect work of other trades from damage resulting from work of this Section. Make good such damage to satisfaction of Consultant.

PART 2 PRODUCTS

2.1 **Acceptable Sources**

.1 This Section of Specifications is based on the following products of Kawneer Company:

.1 Series 516 x 108 mm deep thermally broken fixed aluminum windows.

.2 Comparable products of Commercial Aluminum, Lorlea Architectural Systems, or Consultant-approved equal, conforming to the requirements of this Section are acceptable.

2.2 **Materials**

.1 Aluminum extrusions: alloy 6063 T5 with clean sharply defined profiles, free from defects impairing strength and performance.

.2 Thermal break: extruded polyvinyl chloride separator.

.3 Window sills: extruded aluminum, minimum 3 mm wall thickness to profiles indicated, complete with splice plates, jamb drip deflectors and concealed anchoring devices.

.4 Formed aluminum sheet: as recommended by window manufacturer.

.5 Fasteners in contact with aluminum: stainless steel, of sufficient strength to perform functions for which they are intended.

.6 Glazing method: extruded aluminum lock-in stops, exterior shim tape, interior EPDM gasket.

.7 Isolation coating: bituminous paint, best grade asphalt utility enamel, alkali resistant.

.8 Glass and glazing materials: as specified under Section 08800.

.9 Sealants for aluminum window components: as recommended by window manufacturer.

.10 Sealant for caulking aluminum window system to other building components: as specified under Section 07900.

2.3 Air Barrier and Vapour Retarder

.1 Equip window frames with site installed air barrier vapour retarder material for sealing to building air barrier and vapour retarder as follows:

.1 Material: identical to, or compatible with, building air barrier and vapour retarder materials to provide required airtightness and vapour diffusion control throughout exterior envelope assembly.

.2 Material width: adequate to provide required air- tightness and vapour diffusion control to building air barrier and vapour retarder from interior.

2.4 Fabrication

.1 Jointing and intersections shall be accurately made with square or mitred cuts tightly fitted, sealed and made in true planes, with adequate fastenings.

.2 Work shall be made and erected square, plumb, straight and true, accurately fitted, and with tight joints and intersections. Work shall be adequately anchored in place.

.3 Exposed work shall be finished smooth with even close joints and neat connections.

.4 Intermediate members within units shall be of either solid or tubular design to suit wind loading and weight-carrying requirements.

.5 Construct units with clean, sharply defined profiles. Joints to be accurately machined, fitted, assembled and sealed to provide neat weathertight joinery.

.6 Draw joints together and secure by means of screws driven through the walls and into the integrally extruded screw channels of abutting extrusions.

.7 Glass stops to be screwless, lock-in type.

.8 Provide for 25 mm thick insulating glass units in fixed and operable window openings.

.9 Provide shielded drainage and pressure equalizing vents where required in window systems.

.10 Factory fit, assemble and adjust operable window units.

2.5 Finishes

.1 Exposed aluminum components including sills, flashing and trim: anodized to Aluminum Association Specification, AA-M12C 22A42 clear anodized.

.2 Clips and anchors: stainless steel, or steel with Z275 designation zinc coating.

PART 3 EXECUTION

3.1 Window Installation

.1 The work of this Section shall be installed by experienced workers in accordance with manufacturer's written instructions and reviewed Shop Drawings.

.2 All items in this Section shall be set in their correct locations and shall be level, square, plumb and at proper elevations and alignment with other work to the Consultant's approval.

.3 Clean down all material furnished under this Section as it is installed, leaving it free of dirt and surface blemishes.

.4 Aluminum to be placed in contact with concrete or dissimilar metals shall be given a heavy coat of alkali resistant bituminous paint on contacting surfaces.

.5 Interface aluminum window system with the building components using fixing devices in accordance with the window manufacturer's recommendations, and reviewed Shop Drawings.

.6 Adjust operable window components to ensure smooth opening, weathertight draft-free closing, and easy removal of insect screens, without binding or racking.

3.2 Sill Installation

.1 Install metal sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Use maximum practical lengths in continuous runs, with minimum number of joints.

.2 Secure sills in place with concealed anchoring devices located at ends joints in continuous sills, and evenly spaced at maximum 600 mm oc in between.

3.3 Caulking

.1 Seal joints between windows and window sills with sealant. Bed sill expansion joint cover plates and drip deflectors in bedding compound. Caulk between sill upstand and window frame. Caulk butt joints in continuous sills.

.2 Apply sealant in accordance with Section 07900. Conceal sealant within window units except where exposed use is permitted by Consultant.

3.4 Glazing

.1 Glaze aluminum windows with insulating glass units in accordance with Section 08800.

END OF SECTION