

PART 1 GENERAL

1.1 ARCHITECT, CONSULTANT OR ENGINEER

- .1 Wherever the word Architect, Consultant or Engineer is used in the construction specifications, it shall be replaced with Contract Administrator as defined in C1.1(o) and C5 of General Conditions for Construction Contracts and D1 of Supplemental Conditions.

1.2 CODES AND STANDARDS

- .1 Execute Work in accordance with the latest editions and supplements of the applicable regulations and standards listed below and as stated in the specifications:
 - .1 Manitoba Building Code
 - .2 Manitoba Fire Code
 - .3 Federal, Provincial and Municipal government laws, rules, ordinances and codes, where applicable.
 - .4 Refer to General Conditions for Construction Contracts.
- .2 Where specified standards are not dated, conform to the latest issue of specified standard, amended and revised as of the date for receipt of bids.
- .3 Work shall meet or exceed requirements of specified standards, codes and referenced documents. Even if permitted by preceding regulations and standards, grade of Work shall in no case be lower than specified in project specifications.
- .4 Electrical components and equipment, which are not CSA approved, shall be approved by the Manitoba Department of Labour and Manpower prior to connection to the electrical service. Pay for all costs associated with obtaining the necessary approval.
- .5 Unless specified otherwise, the Contractor shall, at his own expense, obtain all required permits and certificated of inspection and approval from proper authorities.

1.3 BUILDING ENVELOPE

- .1 Comply with the National Building Code (NBC), 2005, Section 5 "Wind, Water and Vapour Protection". Building Envelope shall resist air leakage, vapour diffusion, rain penetration, moisture and groundwater infiltration, and flame spread.
- .2 Avoid penetrating through building envelope air barrier. Where penetrations are necessary, maintain integrity of air barrier by patching and making good to the approval of the Contract Administrator with approved material and methods.
- .3 Patch and make good building envelope at all locations where envelope has been penetrated as a result of removal and/or relocation of existing equipment, piping, ductwork, conduit, cable, wiring, etc. Use only approved materials and methods.

1.4 CONSTRUCTION SAFETY

- .1 Observe and enforce all construction safety measures required by the Manitoba Building Code, Worker's Compensation Board, Municipal Statute or By-Laws.
- .2 In the event of conflict between any provisions of above authorities, the most restrictive provision shall apply.
- .3 During winter construction, when combustion type space heaters are employed, provide adequate ventilation for safety of workers.
- .4 The Contractor shall be registered with the Workers Compensation Board of Manitoba and shall provide and maintain workers compensation coverage throughout the term of the Contract, and shall provide the Contract Administrator with evidence thereof upon request.

1.5 LAYOUT OF THE WORK

- .1 Provide all devices required and assume full responsibility for and execute complete layout of the Work to main lines and levels in relation to designated reference points and benchmarks. Protect all markings, benchmarks, and monuments from movement or destruction.
- .2 Supply such devices as straight edges and templates required to facilitate Contract Administrator's review of Work.

1.6 DEFINITION OF TRADES

- .1 For convenience of reference only, the specifications are separated into the internationally recognized titled/trade sections. (See table of contents). Sections are identified by title and six-digit number system.
- .2 The Contractor shall decide who supplies and installs required materials or equipment and extras will not be considered on the grounds of differences in interpretation of the Project Documents as to who performs what Work.
- .3 The Contractor is totally responsible as to who provides required materials or articles and Work.
- .4 The Contractors are to allow for continued access throughout the construction period and ensuring the facility's entering and exiting is maintained to the approval of the Local Authorities having Jurisdiction, local by-laws, and Work Place Safety and Health Policies. This will also be applicable for parking lot accesses and other such requirements to assist the City in maintaining normal operations.
- .5 Generally, construction activities shall be restricted to the Work areas as defined. Where Work must proceed outside of designated Work areas, all scheduling shall be arranged with the Contract Administrator prior to commencement of such Work. The Contractor is to submit a Safety Access Plan as well as a Detailed Site Co-ordination Plan.
- .6 The Contractor shall, in his construction schedule, allow a period of time from completion of one sequence to commencement of Work on the next sequence to allow for testing and commissioning of equipment, thus allowing time for the City employees to vacate the next Work area.
- .7 The Contractor shall provide a Construction Schedule for each individual sequence of Work indicating commencement and completion dates for each sequence. The Contractor shall be aware that Substantial Performance under the Lien Act applies to the Total Contract and not to the completion and occupancy of the individual Sequence of the Work.
- .8 The Contractor shall submit as-built drawings and maintenance manuals for each sequence of Work at completion of each sequence.

1.7 USE OF SITE AND PREMISES

- .1 The Contractor's use of premises, Site access and construction activities are limited to those areas as defined on drawings.
- .2 Construction personnel must use only designated entrances for access to Work areas, delivery of materials and/or equipment and removal of construction debris.
- .3 Restrict equipment, Work and workers to designated areas and established routes to and from Work areas.
- .4 Storage of construction materials, tools, equipment, etc. in areas outside designated Work areas is not permitted.
- .5 If required, obtain and pay for use of off-site storage or Work areas needed for operations or for delivered equipment or materials not required immediately on the premises.

- .6 Keep all fire lanes, egress, and access routes clear at all times.
- .7 Parking restrictions may be applied and on Site parking will be allowed at the City's discretion.
- 1.8 OCCUPANCY OF WORK AREAS BY THE CITY
 - .1 The City reserves the right to enter and occupy Work areas in whole or in part before completion of the Contract, provided that, in the opinion of the Contract Administrator, such entry and occupancy does not prevent or interfere with the Contractor in completion of the Contract.
 - .2 Such entry and occupation by the City is not to be considered as acceptance of the Work and will not relieve the Contractor from responsibility to complete the Contract.
- 1.9 GLASS BREAKAGE
 - .1 Contractors shall be responsible for all glass that is broken, scratched or cracked during the execution of the Work and shall replace such glass at their own expense.
- 1.10 CLEANUP AND FINAL CLEANING OF THE WORK
 - .1 The Contractor shall maintain the Site and the Work in a tidy condition and free from the accumulation of waste products and debris. Upon attaining Substantial Performance of the Work, the Contractor shall remove any products, tools, construction machinery and equipment not required for the performance of the remaining Work. He shall also remove waste products and debris, and clean for suitable occupancy, unless otherwise specified.
 - .2 Total Performance of the Work shall not be attained until the Contractor has cleaned up the Site and has removed all plant and surplus products, tools, construction materials and equipment. The Contractor shall also have removed waste products and debris.
- 1.11 MOCK-UPS
 - .1 The Contractor shall erect mock-ups for inspection of materials and workmanship to allow the Contract Administrator to made adjustments to fixture or equipment location and/or arterial installation process, as may be necessary. There will be a requirement for a mock-up of window installation to ascertain tie in details of vapour and air barriers as well as rough opening treatment, flashing installations, etc.
 - .2 The mock-up shall not be limited to the window installations alone and all mock-ups shall be a part of the finished work as designated by the Contract Administrator and where specified throughout the contract documents. They shall be as complete as possible with all materials, finishes, fixtures and equipment indicated for installation.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 Shop drawings and product data.
- .2 Samples

1.2 RELATED SECTIONS

- .1 Quality Control Section 01 45 00
- .2 Closeout Submittals Section 01 78 10

1.3 ADMINISTRATIVE

- .1 Submit to Contract Administrator submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Contract Administrator. This review represents that necessary requirements have been determined and verified or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.
- .6 Notify Contract Administrator, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are coordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Contract Administrator's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Contract Administrator review.
- .10 Keep one reviewed copy of each submission on site.

1.4 SHOP DRAWINGS AND PRODUCT DATA

- .1 Refer to CCDC-2-1994.
- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 7 days for Contract Administrator's review of each submission.

- .5 Adjustments made on shop drawings by Contract Administrator are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Contract Administrator prior to proceeding with Work.
- .6 Make changes in shop drawings as Contract Administrator may require, consistent with Contract Documents. When resubmitting, notify Contract Administrator in writing of any revisions other than those requested.
- .7 Accompany submissions with transmittal letter, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subtrade.
 - .2 Supplier
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent Work.
- .9 After Contract Administrator's review, distribute copies.
- .10 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Contract Administrator may reasonably request.

- .11 Submit 6 hardcopy or electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Contract Administrator where shop drawings will not be prepared due to standardized manufacture of product.
 - .12 Delete information not applicable to project.
 - .13 Supplement standard information to provide details applicable to project.
 - .14 If upon review by Contract Administrator, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- 1.5 **SAMPLES**
- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
 - .2 Deliver samples prepaid to Contract Administrator's business address.
 - .3 Notify Contract Administrator in writing, at time of submission of deviations in samples from requirements of Contract Documents.
 - .4 Where colour, pattern or texture is criterion, submit full range of samples.
 - .5 Adjustments made on samples by Contract Administrator are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Contract Administrator prior to proceeding with Work.
 - .6 Make changes in samples which Contract Administrator may require, consistent with Contract Documents.
 - .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- PART 2 PRODUCTS**
- 2.1 Not Used
 - .1 Not Used.
- PART 3 EXECUTION**
- 3.1 Not Used
 - .1 Not Used.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mock ups.
- .4 Mill tests.
- .5 Equipment and system adjust and balance.

1.2 RELATED SECTIONS

- .1 Submittal Procedures Section 01 33 00
- .2 Closeout Submittals Section 01 78 10

1.3 INSPECTION

- .1 Allow Contract Administrator access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections, or approvals by Contract Administrator instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such test is made, uncover such Work, have inspections or tests satisfactorily completed and make good such work.
- .4 Contract Administrator may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Contract Administrator shall pay cost of examination and replacement.

1.4 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Contract Administrator for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by the City.
- .2 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .3 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Contract Administrator at no cost to the City. Contractor to pay costs for retesting and re-inspection.

1.5 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off-site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.6 PROCEDURES

- .1 Notify appropriate agency and Contract Administrator in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.7 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Contract Administrator as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's Work damaged by such removals or replacements promptly.
- .3 If in the opinion of Contract Administrator it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, the City may deduct from the Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Contract Administrator.

1.8 REPORTS

- .1 Submit 2 copies of inspection and test reports to Contract Administrator.
- .2 Provide copies to Sub-trade of Work being inspected or tested or manufacturer or fabricator of material being inspected or tested.

1.9 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as may be requested.
- .2 The cost of test and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Contract Administrator and may be authorized as recoverable.

1.10 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications. Include for Work of all Sections required to provide mock-ups.
- .2 Prepare mock-ups for Contract Administrator's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in Work.
- .3 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .4 If requested, Contract Administrator will assist in preparing a schedule fixing dates for preparation.

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- .5 Remove mock-up at conclusion of Work or when acceptable to Contract Administrator.
 - .6 Mock-ups may remain as part of Work as approved by Contract Administrator.
- 1.11 MILL TESTS
- .1 Submit mill test certificates as required of specification Sections.
- 1.12 EQUIPMENT AND SYSTEMS
- .1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
- PART 2 PRODUCTS**
- 2.1 Not Used
 - .1 Not Used.
- PART 3 EXECUTION**
- 3.1 Not Used
 - .1 Not Used.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 Product quality, availability, storage, handling, protection and transportation.
- .2 Manufacturer's instructions.
- .3 Quality of Work, coordination and fastenings.
- .4 Existing facilities

1.2 RELATED SECTIONS

- .1 Quality Control Section 01 45 00

1.3 REFERENCE STANDARDS

- .1 Conform to these standards, in whole or in part as specifically requested in specifications.
- .2 If there is question as to whether any product or system is in conformance with applicable standards, Contract Administrator reserves the right to have such products or systems tested to prove or disprove conformance.
- .3 The cost for such testing will be borne by the City in event of conformance with Contract Documents or by Contractor in the event of non-conformance.
- .4 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.

1.4 QUALITY

- .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Contract Administrator based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacturer for any particular or like item throughout building.
- .5 Permanent labels, trademarks, and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

- .1 Immediately upon Contract Award, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Contract Administrator of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Contract Administrator at commencement of Work and should it be subsequently appear that Work may be delayed for such reason, Contract Administrator reserves the right to substitute more readily available products of similar character, at no increase in Contract Price or Contract Time.

1.6 STORAGE HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Contract Administrator.
- .9 Touch-up damaged factory finished surfaces to Contract Administrator's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.7 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Contractor to pay transportation costs on recycled products supplied by the City. Unload, handle and store such products.

1.8 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Contract Administrator in writing, of conflicts between specifications and manufacturer's instructions, so that the Contract Administrator may establish a course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Contract Administrator to require removal and re-installation at no increase in Contract Price or Contract Time.

1.9 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Contract Administrator if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in his or her required duties. Contract Administrator reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Contract Administrator, whose decision is final.

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- 1.10 CO-ORDINATION
- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.
 - .2 Be responsible for coordination and placement of openings, sleeves, and accessories.
- 1.11 CONCEALMENT
- .1 In finished areas, conceal pipes, ducts, and wiring in floors, walls and ceilings, except where indicated otherwise.
 - .2 Before installation, inform Contract Administrator if there is interference. Install as directed by Contract Administrator.
- 1.12 REMEDIAL WORK
- .1 Perform remedial Work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
 - .2 Perform remedial Work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.
- 1.13 LOCATION OF FIXTURES
- .1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.
 - .2 Inform Contract Administrator of conflicting installation. Install as directed.
- 1.14 FASTENINGS
- .1 Provide metal fastenings and accessories in same texture, colour, and finish as adjacent materials, unless indicated otherwise.
 - .2 Prevent electrolytic action between dissimilar metals and materials.
 - .3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior Work, unless stainless steel or other material is specifically requested in affected specification Section.
 - .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood or any other organic material plugs are not acceptable.
 - .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
 - .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.
- 1.15 FASTENINGS- EQUIPMENT
- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
 - .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use stainless steel for exterior areas.
 - .3 Bolts may not project more than one diameter beyond nuts.
 - .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.16 PROTECTION OF WORK IN PROGRESS

- .1 Prevent overloading of any part of building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of Contract Administrator.

1.17 EXISTING UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work and pedestrian and vehicular traffic.
- .2 Protect, relocate, or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

PART 2 PRODUCTS

2.1 Not Used

- .1 Not used.

PART 3 EXECUTION

3.1 Not Used

- .1 Not used.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 As-built drawings, samples, and specifications
- .2 Equipment and systems.
- .3 Product data, materials and finishes, and related information.
- .4 Operation and maintenance data.
- .5 Spare parts, special tools and maintenance materials.
- .6 Warranties and bonds.
- .7 Final site survey certificate.

1.2 RELATED SECTIONS

- .1 Submittal Procedures Section 01 33 00
- .2 Quality Control Section 01 45 00

1.3 SUBMISSION

- .1 Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned after final inspection, with Contract Administrator's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Two weeks prior to Substantial Performance of the Work, submit to the Contract Administrator, four (4) final copies of operating and maintenance manuals in English.
- .5 At Total Performance, the Contractor shall provide the Contract Administrator with one (1) set of record drawings as "As-Built" Drawings and specifications bearing notations of all changes and variations from the originals. The Contractor shall affix his company name and sign and date each drawing. The accuracy of these drawings shall be the responsibility of the Contractor, who shall bear all expenses of corrections thereto. Final payment shall not be made until this requirement has been fulfilled.
- .6 Ensure spare parts, maintenance materials and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .7 If requested, furnish evidence as to type, source and quality of products provided.
- .8 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .9 Pay costs of transportation.

1.4 FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf with spine.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

- .4 Cover: Identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
 - .5 Arrange content by systems under Section numbers and sequence of Table of Contents.
 - .6 Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
 - .7 Text: Manufacturer's printed data, or typewritten data.
 - .8 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- 1.5 CONTENTS – EACH VOLUME
- .1 Table of Contents: provide title of project;
 - .1 Date of submission; names,
 - .2 Addresses, and telephone numbers of Contract Administrator and with name of responsible parties;
 - .3 Schedule of products and systems, indexed to content of volume.
 - .2 For each product or system:
 - .1 List full names, addresses and telephone numbers of applicable sub-trades and suppliers, including local source of supplies and replacement parts.
 - .3 Product Data: mark each sheet to clearly identify specific products and component parts, and date applicable to installation; delete inapplicable information.
 - .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
 - .5 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 – Quality Control.
- 1.6 AS-BUILTS AND SAMPLES
- .1 In addition to requirements in General Conditions, maintain at the site for Contract Administrator one record copy of:
 - .1 Contract Drawings (As built).
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
 - .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.

- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
 - .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
 - .5 Keep record documents and samples available for inspection by Contract Administrator.
- 1.7 RECORDING ACTUAL SITE CONDITIONS
- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Contract Administrator.
 - .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
 - .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
 - .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Measured depths of elements of foundation in relation to finish first floor datum.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
 - .5 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Addenda and change orders.
 - .6 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.
- 1.8 FINAL SURVEY
- .1 Contractor is to provide Building Location Certificate at project completion.
- 1.9 EQUIPMENT AND SYSTEMS
- .1 Each Item of Equipment and Each System: include description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed colour coded wiring diagrams.

- .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - .6 Provide servicing and lubrication schedule, and list of lubricants required.
 - .7 Include manufacturer's printed operation and maintenance instructions.
 - .8 Include sequence of operation by controls manufacturer.
 - .9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .10 Provide installed control diagrams by controls manufacturer.
 - .11 Provide Contractor's coordination drawings, with installed colour coded piping diagrams.
 - .12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - .13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 - .14 Include test and balancing reports as specified in Section 01 45 00 – Quality Control.
 - .15 Additional requirements: As specified in individual specification sections.
- 1.10 MATERIALS AND FINISHES
- .1 Building Products, Applied Materials, and Finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.
 - .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
 - .3 Moisture-protection and Weather-exposed Products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
 - .4 Addition Requirements: as specified in individual specifications sections.
- 1.11 SPARE PARTS
- .1 Provide spare parts, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue all items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.
 - .5 Obtain receipt for delivered products and submit prior to final payment.
- 1.12 MAINTENANCE MATERIALS
- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections.
 - .2 Provide items of same manufacture and quality as items in Work.

- .3 Deliver to site; place and store in locations as directed by Contract Administrator.
- .4 Receive and catalogue all items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.
- 1.13 **SPECIAL TOOLS**
 - .1 Provide special tools, in quantities specified in individual specification section.
 - .2 Provide items with tags identifying their associated function and equipment.
 - .3 Deliver to site; place and store.
 - .4 Receive and catalogue all items. Submit inventory listing to Contract Administrator. Include approved listings in Maintenance Manual.
- 1.14 **STORAGE, HANDLING AND PROTECTION**
 - .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
 - .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
 - .3 Store components subject to damage from weather in weatherproof enclosures.
 - .4 Store paints and freezable materials in a heated and ventilated room.
 - .5 Remove and replace damaged products at own expense and to satisfaction of Contract Administrator.
- 1.15 **WARRANTIES AND BONDS**
 - .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
 - .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
 - .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of the applicable item of Work.
 - .4 Except for items put into use with City's permission, leave date of beginning of time of warranty until the Date of Total Performance is determined.
 - .5 Verify that documents are in proper form, contain full information, and are notarized.
 - .6 Co-execute submittals when required.
 - .7 Retain warranties and bonds until time specified for submittal.
- PART 2 PRODUCTS**
 - 2.1 Not Used
 - .1 Not used.
- PART 3 EXECUTION**
 - 3.1 Not Used
 - .1 Not used.

PART 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, Fire Tests of Firestop Systems.

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00- Submittal Procedures.
- .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 01 33 00- Submittal Procedures.
- .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.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Fire stopping and smoke seal systems: in accordance with ULC-S115.
 - .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases on compliance with requirements of ULC-S115 and not to exceed opening sizes for which they are intended.
 - .2 Firestop system rating: 2 hours.
- .2 Service penetration assemblies: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No.40 U19.
- .3 Service penetration firestop components: certified by ULC in accordance with ULC-S115 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.

PART 3 EXECUTION

3.1 PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thickness 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 and 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 un-penetrated 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 Contract Administrator 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 masonry, concrete, and gypsum board partitions and walls.
 - .2 Top of fire-resistance rated masonry and gypsum board partitions.
 - .3 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.
 - .4 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.
 - .5 Openings and sleeves installed for future use through fire separations.
 - .6 Around mechanical and electrical assemblies penetrating fire separations.

- .7 Rigid ducts: greater than 129 cm²: 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.

PART 1 GENERAL

1.1 REFERENCES

- .1 CAN/CGSB-19.1-M87, Putty, Linseed Oil Type.
- .2 CAN/CGSB-19.2-M87, Glazing Compound, Non-hardening, Modified Oil Type.
- .3 CGSB-19-GP-5M-76, Sealing Compound, One Component, Acrylic Base.
- .4 CAN/CGSB-19.6-M87, Caulking Compound, Oil Base.
- .5 CAN/CGSB-19.3-M87, Sealing Compound, One Component, Elasmometric Chemical Curing.
- .6 CAN/CGSB-19-GP-14M-76, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.
- .7 CAN/CGSB-19.17-M90, One Component Acrylic Emulsion Base Sealing Compound.
- .8 CAN/CGSB-19.18-M87, Sealing Compound, One Component, Silicone Base, Solvent Curing.
- .9 CAN/CGSB-19.21-M87, Sealing and Bedding Compound Acoustical.
- .10 CAN/CGSB-19.22-M89, Mildew Resistant Sealing Compound for Tubs and Tiles.
- .11 CAN/CGSB-19.24-M90, Multi-Component, Chemical Curing Sealing Compound.

1.2 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, Handle, store and protect materials in accordance with Section 01 61 00 – Product Requirements.
- .2 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels intact. Protect from freezing, moisture, water and contact with ground or floor.

1.4 ENVIRONMENTAL AND SAFETY REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials and regarding labelling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .3 Ventilate Work areas as directed by Contract Administrator by use of approved portable supply and exhaust fans.

PART 2 PRODUCTS

2.1 SEALANT MATERIALS

- .1 Sealants and caulking compounds must:
 - .1 Meet or exceed all applicable governmental and industrial safety and performance standards.

- .2 Be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising there from, will meet the requirements of all applicable governmental acts, bylaws and regulations including, for facilities located in Canada, The Fisheries Act and the Canadian Environmental Protection Act (CEPA).
 - .2 Sealant and caulking compounds must not be formulated or manufactured with aromatic solvents, fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium or their compounds, except barium sulfate.
 - .3 Sealant and caulking compounds must not contain a total of volatile organic compounds (VOC) in excess of 5% by weight as calculated from records of the amounts of constituents used to make the product.
 - .4 Sealant and caulking compounds must be accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance, and information describing proper disposal methods.
 - .5 Caulking that emits strong odours, contains toxic chemicals or is not certified, as mould resistant shall not be used in air handling units.
 - .6 When low toxicity caulks are not possible, confine usage to areas which off-gas to the exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off-gas time.
 - .7 In the selection of the products and materials of this section preference will be given to those with the following characteristics: non-flammable, low Volatile Organic Compound (VOC) content, manufactured without compounds which contribute to ozone depletion in the upper atmosphere, does not contain methylene chloride, does not contain chlorinated hydrocarbons.
 - .8 Sealants acceptable for use on this project except CAN/CGSB-19.1 and CAN/CGSB-19.18 must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers, use only these primers.
- 2.2 SEALANT MATERIAL DESIGNATIONS
- .1 Neoprene or Butyl Rubber.
 - .1 Round solid rod, Shore hardness 70.
 - .2 High Density Foam
 - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness 20, tensile strength 140 to 200kPa, extruded polyolefin foam, 32 kg/m³ density, or neoprene foam backer, size as recommended by manufacturer.
 - .3 Bond Breaker Tape
 - .1 Polyethylene bond breaker tape, which will not bond to sealant.
 - .4 Polyurethane Sealant
 - .1 CAN 19.13-M87; single component, high performance, non-sagging, low modulus, non-staining and non-bleeding. To be used at all exterior and interior control/expansion joints and on the exterior side of all window/door frames perimeters. Colour as selected by the Contract Administrator. Standard of acceptance: Tremco Dymonic or approved equal in accordance with B6.
 - .5 Latex Sealant
 - .1 CGSB19GP-17M; single component, non-sagging, non-bleeding, moisture curing. To be used on the interior side of all exterior window/door frame

perimeters and at all interior window/door frame perimeters. Colour as selected by the Contract Administrator. Standard of acceptance: Tremco 200 latex or approved equal in accordance with B6.

.6 Silicone Sealant

- .1 CGSB 19-GP-9M; single component, fungus resistant, non-sagging, non-staining, non-bleeding, moisture curing. To be used in all sloped glazing, skylights, and at all joints between vanities, countertops, backsplashes, and adjacent wall materials and at the joint between bathtubs and finish flooring in washrooms. Colour as selected by the Contract Administrator. Standard of acceptance: Tremco Proglaze or approved equal in accordance with B6.

2.3 JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .2 Primer: as recommended by manufacturer.

PART 3 EXECUTION

3.1 PROTECTION

- .1 Protect installed Work of other trades from staining or contamination.

3.2 PREPARATION OF JOINT SURFACES

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil, grease and other matter, which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

- .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

- .1 Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 APPLICATION

- .1 Sealant
- .1 Apply sealant in accordance with manufacturer's written instructions.

-
- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, and embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as Work progresses and upon completion.
- .2 Curing
- .1 Cure sealants in accordance with sealant manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.
- .3 Clean Up
- .1 Clean adjacent surfaces immediately and leave Work neat and clean.
 - .2 Remove excess and droppings, using recommended cleaners as Work progresses.
 - .3 Remove masking tape after initial set of sealant.

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Joint Sealers: Caulking of joints between frames and other building components.
Section 07 92 00

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM).
 - .1 ASTM A 653M-95, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process.
 - .2 ASTM B 29-(92), Specification for Pig Lead.
 - .3 ASTM B 749-85(1991), Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.181-92, Ready-Mixed Organic Zinc-Rich Coating.
 - .2 CGSB 41-GP-19Ma-84, Rigid Vinyl Extrusions for Windows and Doors.
 - .3 CAN/CGSB-51.20-M87, Thermal Insulation, Polystyrene, Boards and Pipe Covering.
 - .4 CGSB 51-GP-21M-78, Thermal Insulation, Urethane and Isocyanurate, Unfaced.
- .3 Canadian Standards Association (CSA).
 - .1 CSA A101-M1983, Thermal Insulation, Mineral Fibre, for Buildings.
 - .2 CAN/CSA-G40.21-M92, Structural Quality Steels.
 - .3 CSA W59-M1989, Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Steel Door and Frame Manufacturer's Association, (CSDFMA).
 - .1 CSDFMA, Specifications for Commercial Steel Doors and Frames, 1990.
 - .2 CSDFMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990.
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 80-1992, Fire Doors and Windows.
 - .2 NAPA 252-1990, Door Assemblies, Fire Tests of.
- .6 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN-S104M-M80(R1985), Fire Tests of Door Assemblies.
 - .2 CAN-S105M-M85, Fire Door Frames.

1.3 DESIGN REQUIREMENTS

- .1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35°C to 35°C.
- .2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kpa not to exceed 1/175th of span.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, louvered, arrangement of hardware and fire rating and finishes.
- .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and reinforcing, fire-rating, finishes.
- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.
- .5 Submit test and engineering data, and installation instructions.

1.5 REQUIREMENTS OF REGULATORY AGENCIES

- .1 Steel fire rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104M for ratings specified or indicated.
- .2 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict conformance with CAN4-S104, ASTM E 152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A 653M, minimum base steel thickness in accordance with CSDFMA Table 1 – Thickness for Component Parts.
- .2 Reinforcement channel: to CAN/CSA-G40.21, Type 44W, coating designation to ASTM A 653M.
- .3 Cast or rolled pure sheet lead: to ASTM B 29, weight: 14.6 kg/m², thickness 1.2 mm.
- .4 Composites: balance of core materials used in conjunction with lead: in accordance with manufacturers' proprietary design.

2.2 DOOR CORE MATERIALS

- .1 Honeycomb construction:
 - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5 kg/m³ minimum sanded to required thickness.
- .2 Stiffened: face sheets welded, insulated core.
 - .1 Fibreglass: to CSA A101, semi-rigid RSI 2.3
 - .2 Polyurethane: to CGSB 51-GP-21M rigid, modified polyisocyanurate, closed cell board. Density 32 kg/m³.
- .3 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door to 250°C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E 152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency have factory inspection service.

- .4 Thermal insulation material must:
 - .1 Not require being labelled as poisonous, corrosive, flammable or explosive under the Consumer Chemical and Container Regulations of the Hazardous Products Act;
 - .2 Be manufactured using a process that uses chemical compounds with the minimum ozone depletion potential (ODP) available.
- 2.3 ADHESIVES
 - .1 Select Adhesives which:
 - .1 Do not contain volatile organic compounds in excess of 5% by weight as measured by EPA Method 24-24A, 40 C.F.R., Part 60, Appendix A (1991), as demonstrated through calculation from records of the amounts of constituents used to make the product;
 - .2 Are accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance;
 - .3 Are accompanied by information describing proper disposal methods for containers.
 - .2 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
 - .3 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.
 - .4 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, sealant/adhesive.
- 2.4 PRIMERS
 - .1 Touch-up prime CAN/CGSB-1.181.
- 2.5 ACCESSORIES
 - .1 Door silencers: single stud rubber/neoprene type.
 - .2 Exterior top and bottom caps: steel.
 - .3 Interior top and bottom caps: steel.
 - .4 Fabricate glazing stops as formed channel, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.
 - .5 Metallic paste filler: to manufacturer's standard.
 - .6 Fire labels: metal riveted.
 - .7 Make provisions for glazing as indicated and provide necessary glazing stops.
 - .1 Provide removable stainless steel glazing beads for dry glazing of snap-on type.
 - .2 Design exterior glazing stops to be tamperproof.
- 2.6 FRAMES FABRICATION GENERAL
 - .1 Fabricate frames in accordance with CSDFMA specifications.
 - .2 Fabricate frames to profiles and maximum face sizes as indicated.

- .3 Exterior frames: 14 gauge minimum thermally broken type construction.
 - .4 Interior frames: 14 gauge minimum welded type construction.
 - .5 Blank, reinforce, drill and tap frames for mortised, template hardware, and electronic hardware using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
 - .6 Protect mortised cutouts with steel guard boxes.
 - .7 Prepare frame for door silencers, 3 for single door, 2 at head for double door.
 - .8 Manufacturer's nameplates on frames and screens are not permitted.
 - .9 Conceal fastenings except where exposed fastenings are indicated.
 - .10 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.
 - .11 Insulation exterior frame components with polyurethane insulation.
- 2.7 FRAME ANCHORAGE
- .1 Provide appropriate anchorage to floor and wall construction.
 - .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
 - .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.
 - .4 Locate anchors for frames in existing openings not more than 150 mm from top and bottom of each jambs and intermediate at 660 mm o.c. maximum.
- 2.8 FRAMES: WELDED TYPE
- .1 Welding in accordance with CSA W59.
 - .2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
 - .3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
 - .4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
 - .5 Securely attach floor anchors to inside of each jamb profile.
 - .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.
 - .7 Securely attach lead to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.
- 2.9 DOOR FABRICATION GENERAL
- .1 Doors: swing type, flush, with provision for glass and/or louver openings as indicated.
 - .2 Interior doors: honeycomb construction.
 - .3 Fabricate doors to tack and fill edges at perimeter every 150mm. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.

- .4 Doors: manufacturers' proprietary construction, tested and/or engineered as part of a fully operable assembly, including door, frame, gasketing and hardware in accordance with ASTM E 330.
 - .5 Blank, reinforce, drill doors and tap for mortised, template hardware and electronic hardware.
 - .6 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
 - .7 Reinforce doors where required, for surface mounted hardware. Provide flush PVC top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.
 - .8 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
 - .9 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN4-S104, ASTM E 152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.
 - .10 Manufacturer's nameplates on doors are not permitted.
- 2.10 DOORS: HONEYCOMB CORE CONSTRUCTION
- .1 Form each face sheet for exterior doors from 16 gauge sheet steel with polyurethane core laminated under pressure to face sheets.
 - .2 Form each fact sheet for interior doors from 16 gauge sheet steel with temperature rise rated core laminated under pressure to face sheets.
- 2.11 HOLLOW STEEL CONSTRUCTION
- .1 Form each face sheet for exterior doors from 16 gauge minimum sheet steel.
 - .2 Form each face sheet for interior doors from 16 gauge minimum sheet steel.
 - .3 Reinforce doors with vertical stiffeners, securely welded to each face sheet at 150 mm on centre maximum.
 - .4 Fill voids between stiffeners of exterior doors with polyurethane core.
 - .5 Fill voids between stiffeners of interior doors with temperature rise rated core.
 - .6 Apply insulation.
- PART 3 EXECUTION**
- 3.1 INSTALLATION GENERAL
- .1 Install labelled steel fire rated doors and frames to NFPA 80 except where specified otherwise.
 - .2 Install doors and frames to CSDFMA Installation Guide.
- 3.2 FRAME INSTALLATION
- .1 Set frames plumb, square, level and at correct elevation.
 - .2 Secure anchorages and connections to adjacent construction.

- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader 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 after frames are built-in.
 - .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
 - .5 Caulk perimeter of frames between frame and adjacent material.
 - .6 Maintain Continuity Of Air Barrier And Vapour Retarder.
- 3.3 DOOR INSTALLATION
- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.
 - .2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows.
 - .1 Hinge side: 1.0 mm.
 - .2 Latch side and head: 1.5 mm.
 - .3 Finished floor, top of carpet, non-combustible sill, and thresholds: 13 mm.
 - .3 Adjust operable parts for correct function.
- 3.4 FINISH REPAIRS
- .1 Touch up with primer finishes damaged during installation.
 - .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

PART 1 GENERAL

1.1 WORK INCLUDED

- .1 The Work included under this section shall conform to the definitions in the “Manitoba Trade Definitions” handbook produced by the Winnipeg Construction Association.

1.2 REFERENCES

- .1 CAN3-A440-M84 – Omnibus Window Standard and CAN 3-A44-M90.

1.3 PERFORMANCE

- .1 Window components to provide for expansion and contraction caused by a cycling temperature range of 100 degrees C without causing detrimental effects to components. Limit mullion deflection to 1/200, or flexure limit of glass with full recovery of glazing materials, whichever is less.

- .2 Classification rating to CAN 3-A44-M90

	Air	Water	Wind
Awning	A3	B7	C4
Casement	A3	B6	C3
Fixed		B7	C4
Single Hung	A3	B7	C5

- .3 There shall be no uncontrolled water penetration under designed loads. Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system , to exterior.

1.4 SHOP DRAWINGS AND PRODUCT DATA

- .1 Submit shop drawings and product data to requirements of Section 01 33 00 Submittal Procedures.
- .2 Indicate on shop drawings wall opening and component dimensions; wall opening tolerances required; anchorage and fasteners; affected related Work; installation requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver products to site, and store and protect products on site, to requirements Section 01 61 00 – Product Requirements.
- .2 Accept products of this section on site in new condition and verify no damage.

1.6 WARRANTY

- .1 Provide a TWENTY (20) year Warranty for all fibreglass frame and sash components. Warranty to cover window system for failure to meet specified requirements. Warranty applies to product only with labour not included.
- .2 Provide a TEN (10) year Warranty for the failure of the air seal due to defects in the material or workmanship. Warranty applies to product only with labour not included.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 All frame and sash profiles are made from Pultruded Fiberglass, having a minimum of wall thickness of 0.090" (2.3 mm), with minimum glass content of 60%. Non-structural accessory members are permitted to be in vinyl or aluminum and are identified as such.
- .2 Fasteners: Non magnetic, stain and corrosion resistant stainless steel to ASTM E-149.
- .3 Insect Screen: to CGSB 79-GP-1M and CAN3-A440-M84 Heavy Duty Classification with 18 x 14 aluminum mesh in baked enamel aluminum frame – colour to match window frame.
- .4 Sill and Flashings: aluminum to match window framing.

2.2 WINDOWS

- .1 Standard of acceptance:
 - .1 Duxton Windows Ltd. (Inline Fibreglass Ltd.): Sovereign series 325, narrow brick mould, low profile typical.
 - .2 Accurate Dorwin Ltd. Windows (OmniGlass Ltd.): Awning series or approved equal in accordance with B6.

2.3 HARDWARE

- .1 Concealed Stainless Steel Hinges, E-Gard Roto Gear Operators and metal Cam are manufactured by "TRUTH Hardware" or approved equal in accordance with B6. Hardware is installed with fasteners into patented back-up reinforcements.
- .2 All operable windows to have restricted operation, so that no object larger than a 4" diameter sphere may pass through.

2.4 GLAZING METHOD

- .1 Laid-in glazing using EPDM non-shrink rubberized glass stop locked-in from the interior provides a secure and positive seal for the glass and easier after install glass servicing.

2.5 INSECT SCREEN

- .1 Roll-formed aluminum frame with friction fit corner keys. Screen mesh held in place by spline. Screens are mounted on the interior and are removable.

2.6 FABRICATION

- .1 Frame and sash corners are connected with moulded reinforced polyester shearblocks and mechanically secured. All joints are factory sealed and neatly fitted together. The perimeter of open-back frames shall be filled with insulation. Fabricate windows allowing for minimum clearances and shim spacing around perimeter of assembly, yet enabling installation. Make corner joints flush, hairline, and weatherproof. Seal corner joints with sealant. Develop drainage holes with moisture pattern to exterior.

2.7 FINISHES

- .1 The exposed surfaces to have 10 year warranty against fading, peeling or cracking are:
 - .1 Isocyanate-free 2 part Polymer Enamel with a minimum dry film thickness of 1.5 mils with a medium gloss of 25-55. Finish shall resist chipping, blistering, chalking discoloration and aging under all atmospheric conditions. Conforms to AAMA 603 and 613 Organic Coatings.

- .2 Concealed Steel Items: Galvanized in accordance with CSA G164M.
- .3 Colours: Standard colour Green

PART 3 Execution

3.1 INSPECTION

- .1 Verify that surfaces are ready to receive Work and opening dimensions are as indicated on shop drawings.
- .2 Verify wall openings and adjoining air and vapour seal materials are ready to receive Work of this Section.
- .3 Beginning of installation means acceptance of substrate.

3.2 INSTALLATION

- .1 Installation shall be performed by experienced installers in accordance with manufacturer instructions and CSA A-440.4 Standards. Window shall be plumb and square after installation is complete and sealed to both interior and exterior wall with a high quality sealant around the perimeter of the frame. If perimeter cavity is to be foamed, additional anchorage may be required to prevent bowing. It shall be the responsibility of the installers to make all necessary final adjustments to ensure normal and smooth operation.
- .2 Align window frame plumb and level, free of warp or twist. Maintain dimensional tolerances, aligning with adjacent Work.
- .3 Coordinate attachment and seal of air and vapour barrier materials.
- .4 Pack fibrous insulation in shim spaces at perimeter to maintain continuity of thermal barrier.
- .5 Install perimeter type sealant, backing materials, and installation requirements in accordance with Section 07 92 00. Apply sealant to ends of sill for watertight seal.

3.3 MAINTENANCE

- .1 Occasional wash of glass and frame components with non-abrasive detergent is recommended.

PART 1 GENERAL

1.1 References

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB 75.1-M88, Ceramic Tile
 - .2 American National Standard Specifications for the Installation of Ceramic Tile (ASNI)
 - .3 ANSI A 137.1-88, Ceramic Tile.
 - .4 ANSI A 108.4-92, Ceramic Tile, Installed with Organic Adhesives or Water Cleanable Tile Setting Epoxy Adhesive.
 - .5 ANSI A 108.10-92, Installation of Grout in Tile work.
 - .6 ANSI A 108.6-92, Ceramic Tile Installed with Chemical-Resistant, Water-Cleanable Tile-Setting and Grouting Epoxy.
 - .7 ANSI A 118.3-92, Water Cleanable Tile Setting and Grouting Epoxy.
 - .8 ANSI A 136.1-92, Organic Adhesive.
 - .9 Terrazzo Tile and Marble Association of Canada (TTMAC), Tile Installation Manual 2000.

1.2 Submittals

- .1 Samples
 - .1 Submit 300 mm x 300 mm sample panels of each colour, texture, size and pattern of tile.
 - .2 Adhere tile samples to 19 mm thick plywood and grout joints to represent project installation.
- .2 Closeout Submittals
 - .1 Provide product maintenance data for ceramic tile work for incorporation into Maintenance Manual specified in General Requirements.

1.3 Delivery, Storage, And Handling

- .1 Deliver all material to the installation site in the manufacturer's original packaging. Packaging to contain manufacturer's name, product name, and identification number and other related information.
- .2 Store packaged material in original containers or wrapping with manufacturer's seals and labels intact.
- .3 Prevent damage to materials during handling and storage. Keep material under cover and free from dampness.
- .4 Maintain temperature of storeroom at minimum of 20°C, for at least 24 hours immediately before installation.
- .5 Materials must be available for inspection as required by the City of Winnipeg, Contract Administrator, Contractor, or Manufacturer.

- 1.4 Site Conditions
 - .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials.
 - .2 Provide continuous ventilation during and after ceramic tile installation. Run ventilation system 24 hours per day during installation and provide continuous ventilation and for 48 to 72 hours after installation. Do not let contaminated air re-circulate through existing building air distribution system.
 - .3 Maintain air temperature at ceramic tile installation area above 20°C, and relative humidity between 10% and 30% for 48 hours before, during, and 48 hours after installation.
- 1.5 Maintenance
 - .1 Provide maintenance materials for ceramic tile and adhesive in accordance with General Requirements. Extra materials to be from same production run as installed materials. Clearly identify each type of ceramic tile and each container of adhesive.
 - .2 Provide whole tiles, minimum 2% of each type and colour required for project for maintenance use. Store where directed.

PART 2 PRODUCTS

- 2.1 Manufacturers
 - .1 Acceptable Products
 - .2 Ceramic Wall Tile (CT)
 - .3 Olympia Tile New Excellence Series 6" x 6"
 - .4 Organic Adhesive
 - .5 Flextile Duoflex 90 Type 1, Premium.
 - .6 Chembond 1640 Type 1, Ceramic Wall Adhesive.
 - .7 Laticrete #15 premium Organic Adhesive.
 - .8 Custom Building Products Reliabond Type 1 Mastic.
 - .9 Field colour and two accent colour tiles. (see interior elevation drawings)
 - .10 Supply similar products from a single manufacturer.
- 2.2 Materials
 - .1 Field Tile #1 – 6" x 6" Olympia Tile Gloss White
Accent Tile #1 – 6" x 6" Olympia Tile Mustard Gloss
Accent Tile #2 – 6" x 6" Olympia Tile Black Gloss – Base Tile is 3" high. Cut 6" & install with finished edge up
 - .2 Organic Adhesive: ceramic floor and wall tile adhesive to ANSI A136.1 Type 1.
 - .3 Polymer modified/unsanded (1/16" joint). Colour to be selected.
 - .4 Joint Sealants and caulking: in accordance with Section 07 92 00.
 - .5 Metal Trim: Purpose made tile trim by Schluter Systems (Canada). Suit to tile thickness: on all exposed edges – finish and colour to be determined by Contract Administrator.

PART 3 EXECUTION

3.1 Preparation

- .1 Ensure surfaces are plumb, level, true with square corners, smooth and dry, free of paint, grease, sealers, irregularities or loose material, and meet all the requirements listed in the TTMAC Tile Installation Manual 2000.
- .2 Work penetrating substance to be completed before installing ceramic tile.
- .3 Seal and prime wall surface to receive ceramic tile in accordance with manufacturer's instructions.

3.2 Installation

- .1 Do tile Work in accordance with TTMAC, Tile Installation Manual 2000 and manufacturer's printed instructions.
- .2 Lay out all tilework according to drawings and patterns so that perimeter and all cut tiles are no less than one half in size and locate cuts so as to be least conspicuous.
- .3 Align all joints to give straight grout lines parallel to walls. Make internal angles square, external angles bullnosed.
- .4 Make joints between tile sheets same as widths within sheets.
- .5 Use bullnose edged tiles at termination of wall tile panels, except where panel abuts projecting surface or differing plane.
- .6 Leave min. 3 mm gap whenever a horizontal plane abuts a vertical plane. To be filled with flexible sealant. Scribe as necessary around obstacles and to produce neat joints, and in straight uniform lines.
- .7 Fit tile around corners, fitments, fixtures, and other built- in objects to maintain uniform joint appearance. Make cut edges smooth, even and free from chipping. Edges resulting from splitting not acceptable.
- .8 When appropriate, mix tiles from several boxes prior to installation to assure that colour variations from tile to tile are evenly distributed throughout the field.
- .9 For tile with raised or textured backs, bonding material must be pressed into the back of the tile to ensure a minimum of 95% coverage. Set tile in place while bond coat is wet and tacky, prior to skinning over. Slide tile back and forth to ensure a proper bond and level surface. Avoid lippage by levelling tiles to conform to a 1 mm tolerance over a 3 mm joint. Backbutter as required, to ensure 95% bond coverage (backbutter by applying adhesive to the back of the tile using the flat edge of the trowel). Clean backs of tiles to ensure proper bonding. Clean excess mortar from surface, prior to mortar setting. Sound tiles after setting and replace any hollow sounding tiles before grouting.
- .10 Follow grout manufacturer's recommendations as to grouting procedures and precautions.
- .11 Test grout on a sample of tile prior to installation to determine need for special sealers, grout releases, or cleaning procedures.
- .12 Clean all surfaces after completion of grouting and remove any grout haze.

3.3 Protection

- .1 Protect wall tiles and bases from impact, vibration, heavy hammering on adjacent and opposite walls for at least 14 days after installation.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 Preparation of substrate surfaces.
- .2 Vinyl composition floor tile.
- .3 Base materials and edge guards
- .4 Clean up all surfaces and areas of work.

1.2 RELATED SECTIONS

- .1 Carpeting Section 09 68 23

1.3 REFERENCES

- .1 ASTM E84 – Surface Burning Characteristics of Building Materials.
- .2 CSA A126 – Sheet Flooring Products

1.4 SAMPLES

- .1 Submit samples in accordance with Section 01 00 00.
- .2 Include duplicate 12"x 12" sized samples of each flooring material, color and pattern selected.

1.5 MAINTENANCE DATA

- .1 Provide manufacturers instructions covering care and maintenance of materials of this section.

1.6 EXTRA MATERIALS

- .1 Provide 5% or 50 sf, whichever is greater, of each colour and type of flooring, base and stair materials for project for maintenance use. Store where directed. Identify each roll or container.

PART 2 PRODUCTS

2.1 FLOORING MATERIALS

- .1 VCT (Vinyl Composite Tile): Amtico Prestige Collection, Heritage Stone CHS-16.

2.2 ACCEPTABLE MANUFACTURERS – BASE

- .1 Finecraft
- .2 Amtico
- .3 Johnsonite

2.3 BASE MATERIALS

- .1 Rubber Base: Roll stock 4" top set coved.

2.4 EDGE GUARD MATERIALS

- .1 Edge Guards: Rubber Binder Bar: Black.

2.5 ACCESSORIES/ADHESIVES/SEALERS

- .1 Sub-Floor Filler: trowelable cement based floor filler; Ardex K-55 or type recommended by flooring material manufacturer.

- .2 Primer and adhesives: waterproof, of types recommended by flooring manufacturer for specific material.
- .3 Sealer and Polish: type recommended by flooring material manufacturer for material type and location.

PART 3 EXECUTION

3.1 SITE AND SUBSTRATE CONDITIONS

- .1 Install underlayment riverside ulay – 5/16”on firm and solid existing substrate. Remove existing flooring as required.
- .2 Ensure floor surfaces are smooth and flat with maximum variation of ¼” in 10 ft.
- .3 Maintain minimum 70 degrees F. air temperature at flooring installation area for 72 hours prior to, during and for 48 hours after installation.
- .4 Beginning of installation means acceptance of existing substrate and site conditions.

3.2 PREPARATION

- .1 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.
- .2 Clean floor and apply, trowel and float filler to leave smooth, flat hard surface. Prohibit traffic until filler is cured.
- .3 Apply primer to concrete or wood surfaces, to flooring manufacturers recommendations.

3.3 INSTALLATION – RUBBER BASE MATERIALS

- .1 Fit joints tight and vertical. Maintain minimum measurement of 2’ – 0” between joints.
- .2 Mitre internal corners.
- .3 Install base on solid blocking. Bond tight to wall.
- .4 Scribe and fit to door frames and other interruptions.

3.4 PROTECTION

- .1 Prohibit traffic from floor finish for 48 hours after installation.

3.5 CLEAN-UP & WAXING

- .1 Remove excess adhesive from floor, base and wall surfaces and leave free of damage.
- .2 Clean, seal and wax floor and base surfaces in accordance with manufacturers recommendations.

PART 1 GENERAL

1.1 SECTION INCLUDES

- .1 Carpeting glue down method, to floors.
- .2 Accessories.
- .3 Preparation of substrate surfaces.

1.2 RELATED SECTIONS

- .1 Resilient Flooring Section 09 65 10

1.3 REFERENCES

- .1 CAN4-S10-2M – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
- .2 CAN4-S102.2M – Standard Method of Test for Surface Burning Characteristics for Flooring, Floor Covering and Miscellaneous Materials.
- .3 CGSB4 – GP-129 – Carpets, Commercial
- .4 CGSB4 – GP-156 – Guide to Selection and Installation of Direct Glue-Down Carpet.
- .5 CGSB 71 – GP-28M – Adhesive for Direct Glue-Down Carpet Installation.

1.4 REGULATORY REQUIREMENTS

- .1 Flame Spread rating and smoke development not to exceed the National Building Code Subsection – Interior Finish.

1.5 SAMPLES

- .1 Submit one samples 36" x 36" in size, illustrating colour and pattern for each carpet material specified.

1.6 OPERATION AND MAINTENANCE DATA

- .1 Submit operation and maintenance data to requirements of Section 01 00 00.
- .2 Include maintenance, procedures, recommended maintenance materials, and suggested schedule for cleaning and shampooing.

1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Store materials for 3 days prior to installation in area of installation to achieve temperature stability.
- .2 Maintain minimum 21 degrees C. ambient temperature three days prior to, during, and 24 hours after installation materials.

1.8 GUARANTEE

- .1 Manufacturer to provide a written guarantee, stating that the carpeting work of this section is guaranteed against deterioration or backing, delamination, stretching or wrinkling, fading or other defects of materials or workmanship detrimental to appearance of performance for a period of ten (10) years from the date of Final Certificate of Completion. Carpets shall be warranted against excessive surface wear meaning more than 10% loss of pile fibre for a period of ten years and shall include replacement of defective work at no expense to the City.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Kraus Yorkton (SR) CO549 02 Green Bamboo. If product not available submit price for Kraus Yorkton.
- .2 Adhesives: waterproof, non-release brand recommended by the carpet manufacturers for their particular products.
- .3 Sub Floor Filler: type recommended by carpet manufacturer.
- .4 Carpet Base: 4" high carpet with bound edge of solid ribbon – material sewn with nylon threading, colour to match carpet.

PART 3 EXECUTION

3.1 INSPECTION

- .1 Verify that surfaces are smooth and flat with maximum variation of 1/8" in 10' and are ready to receive work.
- .2 Beginning of installation means acceptance of existing substrate and site conditions.

3.2 PREPARATION

- .1 Remove substrate ridges and bumps. Fill depressions cracks, joints, holes, and other defects with filler.
- .2 Apply, trowel and float filler to leave smooth, flat, hard surface.
- .3 Prohibit traffic until filler is cured, then vacuum floor surface.
- .4 Ensure floors are free of dust, dirt, solvents, oil, grease, paint, plaster and all other substances detrimental to the performance of the adhesive and carpet.

3.3 INSTALLATION

- .1 Apply carpet and adhesive in accordance with manufacturers instructions to CGSB 4-GP-156.
- .2 Lay out rolls of carpet for approval.
- .3 Double cut carpet to allow intended seam and pattern match. Make cuts straight, true and unfrayed where carpet abuts dissimilar materials.
- .4 Locate seams in area of least traffic.
- .5 Fit seams straight, not crowded or peaked, free of gaps.
- .6 Lay carpet on floors with run of pile in same direction as anticipated traffic.
- .7 Do not change run of pile in any room where carpet is continuous through a wall opening into another room. Locate change or colour of pattern between rooms under door centerline.
- .8 Cut and fit carpet around interruptions.
- .9 Fit carpet tight to intersection with vertical surfaces without gaps.
- .10 Install edge guards where carpet abuts dissimilar material. Use full length pieces only. Do not splice within 24" of corners or ends. Butt ends tight and flush where splicing cannot be avoided.

3.4 PROTECTION

- .1 Prohibit traffic from carpet areas for 24 hours after installation
- .2 Protect traffic areas of carpeted floors with polyethylene drop sheets. Tape edges and joints to prevent shifting.

3.5 CLEANING

- .1 Remove excess adhesive from floor, base, and wall surfaces without damage.
- .2 Clean and vacuum carpet surface.