

# FOR TENDERS

Contractual documents and  
Specifications of the works



Replacement of Windows  
La Grande Maison  
Forges du St-Maurice National Historic Site

Our file : TR2265



Parcs  
Canada

Parks  
Canada

PARKS CANADA  
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Shawinigan (Quebec)  
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March 31st 2015


**RÉGIS CÔTÉ**  
ET ASSOCIÉS

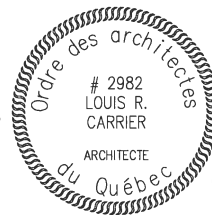


Project : Replacement of Windows  
La Grande Maison  
Forges du St-Maurice National Historic Site

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Louis R. Carrier, Architect



March 31st 2015



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## **ADMINISTRATION CONTRACTUAL DOCUMENTS**

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Documents issued by Parks Canada

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## **ARCHITECTURE SPECIFICATIONS**

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**RÉGIS CÔTÉ ET ASSOCIÉS**

<b>Section</b>	<b>Title</b>
00 01 07	Seals
01 10 05	General instructions
01 33 00	Submittal Procedures
01 35 30	Safety measures
01 35 43	Environnemental procedures
01 45 00	Quality control
01 56 00	Temporary Barriers and Enclosures
01 61 00	Common products requirements
01 74 00	Cleaning
02 41 16	Construction Demolition
02 41 19	Cutting and patching works
06 05 73	Wood Treatment
06 10 00	Rough Carpentry
06 20 00	Finish Carpentry
07 62 00	Sheet Metal Flashing and Trim
07 92 00	Joint Sealants
08 50 00	Windows
08 80 50	Glazing
09 91 23	Interior Painting

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## **ARCHITECTURE DRAWINGS**

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**RÉGIS CÔTÉ ET ASSOCIÉS**

<b>Number</b>	<b>Title</b>
A01	Floor Plans
A02	Elevations
A03	Sections and details



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PART 1 – GENERAL

- 1.1 Interpretation .1 Terms, expressions and abbreviations which have a recognized technical or professional meaning must be interpreted as such in the Specifications and Drawings.
- .2 With respect to dimensions, priority must be given to data expressed as values rather than to drawings or representations by means of a module, lines, arrows or otherwise.
- .3 Priority is given to larger-scale drawings. As well, the Specifications and applicable drawings are always the most recent available.
- .4 If numerical dimensions on drawings do not match, refer to the Consultant for applicable dimensions.
- .5 Anybody interested in presenting a tender regarding the present works and willing to obtain technical or administrative information shall refer to the special instructions to the bidder, Art.IP02 “Demande de renseignements pendant l’appel d’offres.”
- .6 The Specifications and Drawings are complementary, in a way that what is required by the one is also required by the other. The building which is to be built, in accordance with the Specifications and Drawings, must constitute a complete work in its essential parts, i.e. it must notably include all articles normally arising from the instructions in the Specifications and Drawings, even if each of these articles is not specifically mentioned. The Contractor may not take advantage of any apparently involuntary error or any omission it might become aware of to the detriment of Canada. Where the quality of the work or materials is not clearly indicated, the construction trade concerned must provide that which is of the best quality available.
- .7 The Consultant may, for clarification purposes only, provide the Contractor with additional drawings to ensure proper execution of the work. These drawings shall carry the same meaning and scope as if they were contained with the plans mentioned in the Contractual documents.
- 1.2 Description of the Works .1 Demolition work :  
Demolition work of this project include without limiting itself to removal of identified windows on architectural drawings, all altered wood pieces, frame, flashing and other windows accessories and hardware (closing devices).
- .2 Construction works :  
Construction works of this project include without limiting itself to new windows installation, new flashing, sealant and window closing devices not to be operational.

- .3 Cleaning : cleaning is required during and after completion of work.
- 1.3 Schedule of the Work .1 The Contractor shall, within a period deemed reasonable by the Project Manager, submit a schedule indicating the various stages of progress and the planned completion date.
- .2 Based on the Work schedule and in a form acceptable to the Project Manager, provide, within ten (10) business days following the award of the Contract, submission dates for the shop drawings, lists of materials and samples.
- .3 The Project Manager shall, at his discretion, review the progress of the Work based on the submitted schedule of implementation. The Contractor shall update the schedule with the cooperation and approval of the Project Manager.
- 1.4 Permits, ordinances and regulations .1 The Contractor must obtain the necessary permits to execute the Works. He shall comply with all Municipal, Provincial and Federal regulations, and with any other law or regulation with respect to the works. He must assume liability for any violation of relevant laws and regulations.
- .2 The Contractor shall assume (at his own expense) all obligations pertaining to the health and safety measures required under section 01 35 30 - Health and Safety.
- 1.5 Codes and Standards .1 Unless otherwise prescribed, execute the works in accordance with the National Building Code of Canada (NBC) as well as any other local or provincial code. In the event of omissions or contradiction between these standards, the strictest requirements shall apply.
- .2 The works must comply with the requirements of the standards, codes and other documents cited for reference purposes, or exceed same.
- 1.6 National Park Acts .1 Execute all work to be performed within the confines of National Historic Sites, National Historic Parks, National Parks and Historic Canals in accordance with the provisions of the *National Parks Act*.
- 1.7 Use of premises by the Contractor .1 With respect to the execution of the Works and for storage purposes, restrict usage of the premises to areas determined by the Project Manager.
- .2 Do not unduly accumulate material or materials in a way that encumbers the premises.



- .3 Move any stored material or materials which hamper the work of the Project Manager or another Contractor.
  - .4 For the duration of the works, do not use the site as a lodging or temporary residence for the Contractor's employees.
  - .5 After obtaining the necessary authorizations, assume all costs related to the use of additional storage or work areas required for the execution of the works.
- 1.8 Insurance .1 Contactor must supply a global insurance for the work site, a multirisks of 5 000 000 \$ covering Contractor, the Owner, the Professionnals, the Subcontractor against any fire risk, contamination, collapse, that could cause materials or corporal damages.
- 1.9 Drilling, adjustments and sealing .1 Execute the necessary drilling, adjustment and sealing works to ensure that elements which need to be linked or joined to other elements are connected tightly and with precision.
- .2 When a new element is connected to one already in place and the latter is modified, execute the necessary drilling, sealing and restoration work in order to adapt it to the element already in place.
  - .3 Perform drilling operations in such way that ridges are left clean and smooth, and ensure that the sealing joint is as inconspicuous as possible.
- 1.10 Work Site Meetings .1 Attend work site meetings if required by the Project Manager.
- 1.11 Documents Required on the Work Site .1 At the work site, keep a copy of each of the following documents:
- .1 Drawings, Specifications and Contract addenda;
  - .2 Notes and additional drawings;
  - .3 Approved shop drawings;
  - .4 Authorizations for modifications;
  - .5 Element and material test reports;
  - .6 Approved schedule for the Work;
  - .7 Installation and implementation instructions provided by the manufacturer;
  - .8 Prevention program.
- 1.12 Restoration of premises .1 Restore the premises to the condition it was in at the time the Contract was awarded, including lawn, shrubs, circulations, adjacent materials, etc. and excluding the upgrading work provided in the Plans and Specifications.

- 1.13 Defect to complete works inside prescribed limit .1 If work advance too slowly or evidence is made the work could not be finished inside contract prescription deadlines Parks Canada can notice Contractor and his caution to find the necessary manpower or crews within a seven (7) days period, tooling additionnal materials to complete work inside time limit.
- .2 If no action is taken once the time limit is over, the Owner can apply planned measures in the chapter of the contract, give the order to the Contractor caution to complete the work according to execution caution clauses.
- .3 If for no legal reason Contractor will not complete works at the deadline it will have to pay to the Owner following fees:
- .1 An amount equal to all treatments, salaries, traveling costs paied by the Owner for construction supervision for the period of delay.
- .2 An amount equal to all the spending cause to the Owner by delay of delivery of premises.
- 1.14 Documents required for the temporary acceptance .1 Contractor must provide to Parks Canada all documents listed below required by the Owner for temporary acceptance of work:
- .1 General Contractor sworn statement that salaries, worker wages have been paid in all cases as minimum salary scale of work collective agreement regarding construction industry, of whom the jurisdiction is applicable to the region.
- .2 General Contractor sworn statement that all sub-contractors have been paid.
- .3 General Contractor sworn statement that all materials incorporated to the construction have been paid.
- .4 All required warranties from sub-contractors in the specification.
- .5 Conformity certificate to the work accident law.
- 1.15 Precedence .1 If a contradiction happen between general conditions of contractual documents and this section of Supplmentary requirements, General conditions of normalizes documents of Parks Canada have precedence.
- 1.16 Reception without reserve and work acceptance .1 Inspection by Contractor
- .1 Contractor and sub-contractors must proceed to an inspection of the works, find defects, imperfections, bring necessary corrections as complete works as in compliance with requirements. Notice consultant in writing once the inspection is complete and corrections are done and ask the Consultant for his inspection.

- .2 Inspection by Consultants
  - .1 Consultants and Contractor, will inspect work to find obvious defects. Contractor must apply necessary corrections if applicable.
- .3 Final inspection
  - .1 When defects mentioned above are corrected, ask for a final inspection by Project Manager, Consultants and Contractor. If works are not completed by according to Project Manager or Consultants ask for a new inspection.
- .4 Quasi-completion of the works declaration
  - .1 When project manager and Consultants consider defects are corrected and contractual requirements seemed in large part satisfied, as to General conditions ask for a quasi-completion certificate.
- .5 Beginning of the warranty period
  - .1 Acceptation date by Project Manager of quasi-completion declaration supply will be the beginning of exercise of wright of retention and the warranty period unless contrary prescriptions in legislation relating to retention wright applicable on work site.
- .6 Completion of work declaration
  - .1 When Project manager of the works and Consultants consider defects has been corrected and it seems contractual requirements are completely satisfied, ask for a complete works certificate. If works are judged incomplete by Project Manager or Consultants ask for a new inspection.
- .7 Final payment
  - .1 At the end of retention wright exercice period present a final payment request as General conditions.

PART 2 – PRODUCTS \_\_\_\_\_ Not applicable.

PART 3 – EXECUTION \_\_\_\_\_ Not applicable.



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PART 1 – GENERAL

- 1.1 Summary .1 Shop drawings and technical data sheets.
- .2 Samples.
- .3 Certificates and copies.
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- 1.2 Administrative Tasks .1 In a reasonable period of time and following an appropriate order in order not to delay the execution of the work, submit to the Consultant all documents and samples in order for him to verify them. Lateness is not a reasonable reason to ask for the extension of the contractual period. No demands in that sense will be received.
- .2 All works aimed by documents and samples to be submitted shall not be started before the verification of these documents and samples.
- .3 The Contractor shall review all documents and samples before submitting them to the Consultant. This verification by the Contractor shall serve as a confirmation that all requirements have been or will be determined and verified and that all documents and samples submitted have been examined and found conform to the requirements of the work and of the contractual documents. All documents and samples that are not stamped, signed, dated and identified as specific to the present project will not be examined, will be considered as rejected and returned to the Contractor.
- .4 Make sure that all measurements taken on site in connection with adjacent works affected by the present work are accurate.
- .5 Even if the documents and samples are verified by the Consultant, the Contractor is still liable for the accuracy of the data they contain, for the characteristics they show as well as for their conformity to the requirements listed in the contractual documents.
- .6 Keep on site a copy of documents and samples submitted and verified.
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- 1.3 Shop Drawings and Technical Data Sheets .1 “Shop drawing” means drawings, diagrams, illustrations, tables, efficiency and performance graphs, brochure and other type of documents that the Contractor shall submit in order to show in detail a part of the work to be executed.
- .2 Shop drawings must show materials to be used, construction, binding or anchors methods to be used and shall include assembly diagram, connection details, explanatory notes and any other information necessary for the execution of work. When elements, adjacent work or work in connection with the present work are prescribed, indicate on the drawings that their supply and installation has been coordinated, but the section they are in shall not be mentioned. Refer to conception drawings and specifications.

- .3 Modifications of the shop drawings by the Consultant are not supposed to modify the contract price. If they do influence the price of the work, notify the Consultant prior to the execution of these modifications.
- .4 Make the changes asked by the Consultant on the shop drawings, in accordance with the requirements of the contractual documents. At the time of the re-submission, notify the Consultant, in writing, of any changes that have occurred in relation with the changes he has required.
- .5 Submit five (5) copies of shop drawings of every work listed in sections that require shop drawings to be submitted and according to all reasonable requirements of the Consultant.
- .6 When shop drawings are not prepared for the standard use of a product, submit five (5) copies of the technical data sheet or of the documentation distributed by the manufacturer, and this, for every element listed in sections that require shop drawings to be submitted and according to all reasonable requirements of the Consultant.
- .7 Shop drawings shall be submitted in paper format, must be readable, understandable and clearly reproduced. No shop drawings submitted by fax or not in sufficient copies will be accepted. The Contractor is responsible for the transmission and forwarding of all shop drawings. Although shop drawings or technical data sheet can be sent to Consultant by e-mail or PDF file format.
- .8 When shop drawings have been verified by the Consultant and that no error or omission has been detected, or if there is only minor corrections, three (3) printed copies or noted PDF files with validation stamp are returned and forming and installation work can be started. If shop drawings are rejected, annotated copies are returned and new corrected shop drawings shall be submitted following these annotations prior to the beginning of forming and installation works.

#### 1.4 Samples

- .1 Submit 2 copies of samples to be verified according to the requirements of the different sections of the specifications. Each sample has to have a label indicating its origin and its proposed use in the execution of the work.
- .2 Send samples to the Consultant's office.
- .3 Inform the Consultant in writing, at the time of the submission of the sample of any difference between the sample submitted and the requirements in the contractual documents.
- .4 Modifications of the shop drawings by the Consultant are not supposed to modify the contract price. If they do influence the price of the work, notify the Consultant prior to the execution of these modifications.

- .5 Make the changes asked by the Consultant on the shop drawings, in accordance with the requirements of the contractual documents.
- 1.5 Requirements Related to Submission of Documents and Samples
- .1 Coordinate the submission of documents and samples required by the requirements of the work and the contractual documents. Any document or sample submitted individually with not be verified until all related information is available.
  - .2 The Contractor must submit to the Consultant within fifteen (15) calendar days after notification all required shop drawings and samples.
  - .3 Allow ten (10) days for the Consultant to verify submitted documents and samples.
  - .4 The covering letter shall include the following information:
    - .1 the date;
    - .2 the description and the project number;
    - .3 the name and address of the Contractor;
    - .4 the name and the number of copies of the shop drawing sent, the description of the product and samples included;
    - .5 any other useful information.
  - .5 The documents and samples sent must also include the following information:
    - .1 the preparation date and number of revision;
    - .2 the description and the project number;
    - .3 the name and address of:
      - .1 the sub-Contractor;
      - .2 the supplier;
      - .3 the manufacturer;
      - .4 the Contractor seal with the signature of his authorized representative attesting that the submitted documents and samples have been approved, that all measurement taken on site have been verified and that everything is conformed to the contractual documents.
    - .5 the details of every appropriate parts of the works, according to the needs:
      - .1 forming details;
      - .2 arrangement details showing dimensions, including those taken on site and dimensions of required gaps and clearance;
      - .3 installation details;
      - .4 capacity and power;
      - .5 characteristics relative to the performance or efficiency;
      - .6 applicable norms;
      - .7 service load;
      - .8 wiring diagram;
      - .9 schematic diagrams;
      - .10 the relation with precedent work.

- .6 When the Consultant has verified all submitted documents, distribute copies.

1.6 Replacement Materials .1

The reference products shall match the trademarks indicated in the plans and contractual documents, whether they're on their own or with a model or catalog number.

.2 The brands referred to the plans and contractual documents are considered as a representation of quality, style and kind of required product.

.3 Other brands equivalent to the reference model can be submitted for approbation if indicated as long as they meet the specifications of the reference brand.

.4 Equivalences:

.1 A submitted demand of equivalence will be studied regarding, mainly, the following criteria: construction, yield, capacity, dimensions, weight, availability of the replacement parts, problems of maintenance, delivery delays, existence of similar devices, proven service, efficiency.

.2 When a demand like this is made, the Contractor has to prove the equivalence of the product and pay the costs related to this. This proof shall be presented as a table confirming the parallel between the referred product and the proposed product. Without being limited, this proof must confirm, including: dimensions, weight, spacing required for maintenance purposes, operation tension, power consumption, starting current, efficiency, accessories' list, etc.

.3 The Contractor shall study the reference product before submitting it. With this exam, the Contractor recognizes that he has determined and verified all measures on place, particular conditions of the site, similar materials, numbers of catalog and similar data, or that he will do it later, and that he has controlled and coordinated every shop drawing with the requirements of the works and the contractual documents.

.5 Approbation:

.1 If a piece of equipment or materials other than those specified to the plans and contractual documents are accepted this way, the Contractor is responsible and will have to pay the cost of the modifications and additional equipments or materials, and this, for all the job corps so that we can later find, for every one of them, the same functions the same functions than with the equipments and/or reference materials.

1.7 Certificates and copies .1

Immediately after the award of the contract, submit all conformity certificates to the agency responsible for the health and security at work as well as copies of the insurance policies and any other documents required by the law, codes or any other applicable requirements.



PART 2 – PRODUCTS \_\_\_\_\_ Not applicable.

PART 3 – EXECUTION \_\_\_\_\_ Not applicable.



PART 1 – GENERAL

- 1.1 Safety on site .1 Observe and enforce regulations on security listed in part 8 of the National Building Code of Canada latest edition or regulations of provincial government, the agency in charge of regulations on work incidents or municipal authorities, according to construction works. In the case of variance or contradiction between regulations of the code and of the agencies listed here above, the stricter regulations shall apply.
- .2 Build hoardings, temporary protection walls, gates and, if needed, covered passages conform to the prescriptions of the NBC, latest edition.
- 1.2 References .1 Loi sur la santé et sécurité du travail (L.R.Q. 1999, updated 20th of July 2005).
- 1.3 Overloads .1 Make sure that no part of the work is submitted to a load that may endanger its solidity or that may cause permanent deformation.
- 1.4 Precedence .1 In the case of variance between the requirements mentioned here above and requirements of the provincial government, of Labour Canada or Health and Welfare Canada, the stricter requirements shall apply.
- 1.5 WHMIS .1 Conform to the requirements of Workplace Hazardous Materials Information System (WHMIS) concerning the use, handling, storage and evacuation of hazardous materials. Conform to the labeling and supply of material safety data sheet accepted by Labor Canada and Health and Welfare Canada.

PART 2 – PRODUCTS Not applicable.

PART 3 – EXECUTION Not applicable.



PART 1 - GENERAL

- 1.1 Fires .1 Fires and burning of rubbish on site are prohibited.
- 1.2 Waste Disposal .1 It is strictly prohibited to bury rubbish and waste materials on site.  
.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- 1.3 Drainage .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.  
.2 It is strictly prohibited to pump water containing particles of material in suspension in the waterways, storm or sanitary sewers.  
.3 Control disposal or runoff of water containing suspended materials or any other deleterious substance, in conformity to the requirements of the local authorities.
- 1.4 Site Clearing and Plant Protection .1 Protect trees and plants on site and adjacent properties where indicated.  
.2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m.  
.3 Restrict tree removals to areas indicated or designated by the Consultant.
- 1.5 Work Adjacent to Waterways .1 Do not operate construction equipment in waterways.  
.2 Do not borrow material from waterway beds without the Consultant's approval.  
.3 Do not dump excavated fill, waste material or debris in waterways.
- 1.6 Pollution Control .1 Maintain the temporary erosion and pollution control features installed under this contract.  
.2 Ensure the control of the emissions from equipment and installations to local authorities emission requirements.

- .3 Build temporary shelters in order to stop sanding materials and other debris from contaminating the air outside the application zone.
- .4 Cover or wet down dry materials and rubbish to prevent the wind from blowing dust and debris. Provide dust control for temporary roads.

PART 2 – PRODUCTS \_\_\_\_\_ Not applicable.

PART 3 – EXECUTION \_\_\_\_\_ Not applicable.

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PART 1 – GENERAL

- 1.1 Inspection .1 Allow Consultant access to the works. If part of the works is in preparation at locations other than the Work Site, allow access to these works whenever it is in progress.
- .2 In case works have to be submitted to inspections, approbations or special tests ordered by the Consultant, or required by local rules regarding the Work Site, ask an authorization within a reasonable delay.
- .3 If the Contractor covered or permits to be covered works that had been designated for special tests, inspections or approvals before such is made, uncover the works, follow and ensure the execution of the inspection until the complete satisfaction of the competent authorities and then put the works back into their initial state.
- .4 The Consultant may order an inspection of any part of the Works to be examined if these are suspected to be not in accordance with Contractual Documents. If, upon examination, these Works are found not in accordance with Contract Documents, correct these Works and pay the cost of examination and correction. If the Works are found in accordance with the Contractual Documents, the Project manager shall pay cost of examination and replacement.
- 1.2 Independent Inspection Agencies .1 Independent Inspection/Testing Agencies will be engaged by Project manager for purposes of inspecting and/or testing portions of Works. The cost of these services will be assumed by the Project manager.
- .2 Provide any equipment required for executing the inspection and testing by the inspection agencies.
- .3 Hiring an inspection/testing agency does not relax responsibility to perform Work in accordance with the Contractual Documents.
- .4 If defects are revealed during inspection and/or testing, the designated agency will request additional inspection and/or testing to ascertain full degree of defect as well as the nature of these defects. Correct defects and irregularities as advised by Consultant at no cost to the Project manager. The Contractor will have to assume the costs for testing and inspection that will have to be made later after these corrections.
- 1.3 Site Work Access .1 Allow inspection/testing agencies access to the works, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

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- 1.4 Procedures .1 Notify the agency and Consultant in advance when tests have to be performed, 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 orderly sequence to not cause delays in works.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store samples.
- 1.5 Rejected Works .1 Remove all defective Works judged not conform to the Contractual Documents and rejected by the Consultant, whether result of poor workmanship, use of defective products or damage and this, even if these works had been integrated to the works. Replace or remake these elements in accordance with the Contractual Documents.
- .2 In any such case, repair without delay the works of the other Contractors that were damaged during the replacement or repair works mentioned earlier.
- 1.6 Reports .1 Submit four (4) copies of inspection and test reports to the Project manager.
- .2 Provide copies to Subcontractor of work being inspected or tested manufacturer or fabricator of material being inspected or tested.
- 1.7 Mill Tests .1 Submit mill test certificates as required of Specification Sections.
- PART 2 – PRODUCTS Not applicable.
- PART 3 – EXECUTION Not applicable.



PART 1 – GENERAL

- 1.1 Pathways .1 Provide and maintain adequate access to project site for the workers.
- .2 Develop and maintain circulation ways on the works site and take the necessary measures to ensure the cleanliness during the works. The stairs must remain accessible and available at any time, without restriction, free from debris and clean.
- .3 If the permission to use existing ways to the works site is granted, these must be maintained during the period of works and repair any damage that might result from the use of these ways.
- .4 Clean runways and circulation areas used by the Contractor's equipment and vehicles.
- 1.2 Storage .1 Provide, install and maintain in a clean, well organized state, weather resistant lockable sheds to store materials and tools.
- .2 Leave on-site every material that doesn't need to be protected from weather, but still ensure they are not interfering with the activities of the Work Site.
- 1.3 Framework Enclosure .1 Dust protection screens:
- .1 Provide and install screens or partitions in order to prevent dust propagation during the works who product dust. Ensure the protection of the public, the workers and the finished work areas.
- .2 Maintain and keep in place the protection equipments until the end of the Works.
- .2 Closing works to protect against storms
- .1 Supply and install closing works of opener protection against storms for windows not completed.
- 1.4 Storage and Permissible Loads .1 The workers must execute the works respecting the limits specified by Parks Canada Representative regarding their activities and circulation. Do not obstruct the Works Site with materials in a disputable way.
- .2 Do not overload or enable overloading a part of the works site with a load that might endanger its integrity.

- 1.5 Heating and Ventilation .1 Provide and install sheds for the temporary heating and ventilation devices required on the Work Site in order to:
- .1 simplify the execution of the works;
  - .2 protect the works and the materials against humidity and cold weather;
  - .3 stop humid condensation upon surfaces;
  - .4 ensure the levels of ambient temperature needed for the storage, the installation, and the drying of the materials;
  - .5 ensure a proper ventilation in order to satisfy the requirements of Public Health regarding the safety in the work areas.
- .2 Maintain a temperature of at least 10°C according to the prescriptions from the beginning of the works until the moment of the definitive acceptance of the Consultant.
- 1.6 Lighting and electricity supply .1 Electric power will be furnished by the Owner in the limits capacity for small electric tools.
- .2 Contractor must supply electric energy for all other equipment (lifting systems, apparels, special electric power supply) without using Owner's installations.
- 1.7 Sanitary installation .1 Contractor will be authorized to use sanitary installations of existing building but must clean the toilet's room used.
- 1.8 Signs and Public Notices .1 Public Notices used to ensure the safety of the public and to give instructions
- .1 The signs must be written in both official languages. The graphic symbols must be conform to the norm CAN3-Z321-77.
- .2 Maintenance and removal of the Signs and Public Notices
- .1 Keep the signs and public notices in good condition during the whole duration of the works. Remove them and evacuate them form the works site when the work is over or upon Ministry Representative' request.
- 1.9 Scaffoldings and Temporary Installations .1 When required, build safe, rigid, solid scaffoldings and ensure their maintenance, if required.
- .2 The scaffoldings shall not be pressed upon the walls; they must be removed quickly while they're no longer required.
- .3 Provide, install and maintain in service all the service equipment and the temporary protection such as lifts, ladders, scaffoldings, ramps, hoists etc. necessary to the execution of the works.

- .4 Every device, equipment and construction described at the following article must be conform to the laws and rules regarding the prevention of the accidents at work by the Safety Code of the Quebec Ministry of Labor and/or be conceived to ensure the best possible protection.

1.10 Removal of the  
Temporary Installations

- .1 Remove from the works site every temporary installation when the time comes, and when the safety of the workers and the public is assured by permanent installations.

PART 2 – PRODUCTS Not applicable.

PART 3 – EXECUTION Not applicable.



## PART 1 – GENERAL

- 1.1 General
- .1 Unless otherwise explicated, use new materials and equipments.
  - .2 Within five (5) days following the reception of the written demand from, the Consultant, submit the following information regarding the material and equipment to be furnished:
    - .1 the name and address of the manufacturer;
    - .2 the trademark, as well as the model and catalog numbers;
    - .3 technical data sheets and test results;
    - .4 manufacturer specifications regarding the application and installation;
    - .5 proof of the acquisition approaches.
  - .3 Unless otherwise indicated, use products from on single manufacturer in case of materials and equipments form the same type or class.
- 1.2 Manufacturer Instructions
- .1 Unless otherwise indicated, conform to the most recent written instructions of the manufacturer regarding the material and equipment to use, as well as the installation methods.
  - .2 Inform the Consultant of any divergence between the present document and the manufacturer instructions via a written report. The Consultant will then chose which document has to be used.
- 1.3 Fixations - General
- .1 Provide and install fixations and metal accessories of same texture, color and finish as the metal support they are attached to. Make sure that different metals are not exposed to an electrolytic action. Use fixations, anchorages, and stainless steel wedges to adapt to the outside works.
  - .2 The spacing between the anchorages must be taking care of the limits and shear resistance in order to provide a solid and permanent anchorage. Wooden pegs are not accepted.
  - .3 Hide the fixation pieces according to the indications, space them uniformly and install them with care.
  - .4 It is strictly prohibited to use fixation pieces that may cause the crumbling or the cracking of the material.
  - .5 Obtain the approbation of the Consultant before using fixation pieces that are installed with a nail gun. Once the approbation is furnished, conform to the norm ACNOR Z166-1975.

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- 1.4 Fixation Materials .1 Unless otherwise indicated, use fixation pieces from heavy series with half-finished hexagonal heads. Use stainless steel pieces from nuance 304 in the case of exterior use.
- .2 Bolts shall not surpass the top of the screws by more than one length of their diameter.
- .3 Use ordinary washers on equipments and locking plate washers with flexible trim where vibrations can happen. Use flexible trims with stainless steel elements.
- 1.5 Delivery and Storage .1 Materials and equipment must be delivered, stored and kept in their original packaging in a way to keep intact the manufacturer's labels and seals.
- .2 Make sure that the materials and the equipment are not damaged, altered or dirty during the delivery, the handling, the shipping and the storage. Carry out of the Works Site, without delays, the refused materials and equipments.
- .3 Store the materials following the manufacturer's specifications.
- .4 Retouch, until total satisfaction of the Consultant, the damaged surfaces finished at the mill. Use a primer or enamel paint that is identical to the original finish. Do not paint the nameplates.
- 1.6 Choice of Materials by the Contractor for Tender purposes .1 If the materials are prescribed by reference to a norm, choose any material that matches the requirements of this norm, or that surpasses it.
- .2 If the materials must be on the List of the approved products published by the Office of the general norms of Canada, choose one of the listed manufacturers.
- .3 If the materials are prescribed by the terms of a "descriptive" quote, or a "performance" quote, choose any material that matches or surpasses these specifications.
- .4 If the materials are prescribed by a designation from one or many brands, choose one of the designated brands. For the purposes of the present document, the expression "acceptable material" designates a complete and ready to use product, following the description given by a manufacturer, a catalog number, a trademark or any combination of these elements.

- .5 If the materials are prescribed by the terms of a norm, a descriptive quote or a performance quote, to the demand of the Consultant, the Contractor shall get, from the manufacturer, the report of an independent test lab certifying that the materials or equipments match the prescribed requirements, or surpass them.

### 1.7 Substitution

- .1 Any substitution will be forbidden without having previously obtained the written approbation of the Ministry Representative.
- .2 During the invitation period, replacement materials will be considered providing that the agent of the contract receives the written report of the technical data completed at least ten (10) days before the specified date for the closing of the tender. If replacement materials are approved for tender requirements, addenda will be published to the tender documents. Refer to the specific tender instructions, Art.IG14 must be accompanied by a state of the respective costs of the prescribed articles in the quote, and those proposed as a substitute.
- .3 The Consultant will take consideration of these demands only if:
  - .1 the materials chosen by the tenderer in the list of those specified in the Contractual Documents are not available, or if
  - .2 the delivery date of the chosen materials may delay the works, or if
  - .3 the proposed substitution materials are judged as equivalent to the prescribed products and if their use results in a diminution of the Contract price.
- .4 If substitution proposal is accepted partially or entirely, assume related costs that could be caused by the substitution on other works. Pay the modification to be bring to the drawings conception following the substitution.
- .5 Any sum of money that can be save by substitution approval will be determinated by Consultant and contract price will be reduce.

### 1.8 Conformity

- .1 If materials prescribed according to a norm, to a descriptive specification, to a performance type specification, following Consultant requirement, obtain from manufacturer, independent laboratory essay report, attesting materials or equipment are in accordance with prescribed requirements or exceed those requirements.

- 1.9 Equipment and Construction Installations .1 Upon request, show, until the entire satisfaction of the Consultant, that the equipment and the construction facilities have the sufficient capacity to enable the fabrication, transport, installation and finish of the required works following the quality and productivity standards required. Otherwise, replace the equipment or the existing installations, or furnish and install the equipment or the supplementary necessary installations, according to the received directives.
- .2 Maintain the equipment and the construction installations in good working condition.

PART 2 – PRODUCTS Not applicable.

PART 3 – EXECUTION Not applicable.



PART 1 – GENERAL

- 1.1 Content .1 Cleaning during execution of the work.
- .2 Specific cleaning.
- .3 Final cleaning.
- 1.2 Work Site Cleanliness .1 Maintain the site and work in tidy condition, free from accumulation of waste products and debris.
- .2 Remove waste materials and debris from work and site and deposit in waste container at the end of all work period. When waste containers are full, remove them from the site the same day.
- 1.3 Specific Cleaning .1 Clean and dry all existant wood pieces and eliminate all stock piling of scrap material.
- 1.4 Final Cleaning .1 When the work is substantially performed, remove surplus products, tool construction machinery and equipment not required for performance of remaining work.
- .2 Remove scrap and waste materials other than those generated by the Contractor or its employees and leave the work site clean and ready to be used.
- .3 At the completion of the works, remove surplus products, tool construction machinery, equipment and construction materials.
- .4 Remove waste materials and debris from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site.
- .5 Take necessary dispositions and obtain permit from competent authorities for the elimination of debris and waste materials.
- .6 Leave work broom clean before inspection process commences.
- .7 Clean and polish glass, hardware pieces, chromed, stainless steel, laminate surfaces. Replace broken, scratched or disfigured glass.
- .8 Remove the dust as well as stains, marks, scratches upon decorative surfaces, walls and floors.
- .9 Remove the dust upon the interior surfaces of the building and vacuum clean behind the grids, the louvers and the registers.

- .10 Wax, soap, seal or treat of any other way the floor coverings, according to the manufacturer's specifications.
- .11 Examine the finishes, the accessories and the material in order to ensure they match the prescribed requirements regarding execution quality and performances.
- .12 Broom clean and wash exterior walks, steps and surfaces.
- .13 Remove dirt and other disfigurations from exterior surfaces.
- .14 Evacuate from work site all construction material and supplementary material not required to complete work. Contractor must let the site as it was before beginning of works.

PART 2 – PRODUCTS Not applicable.

PART 3 – EXECUTION Not applicable.

## PART 1 - GÉNÉRAL

- 1.1 References .1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
- 1.2 Existing conditions .1 Take over structures to be demolished based on their condition on the date the tender is accepted.
- 1.3 Protection .1 Prevent movement, settlement or damage of adjacent structures, adjacent grades parts of existing building to remain. Provide bracing, shoring and underpinning as required. Repair all the damage caused by the demolition until entire satisfaction of the Consultant and with no fees for the Consultant.
- .2 Take precautions to support affected structures and, if safety of building being demolished or adjacent structures or services appears to be endangered, cease operations and notify the Ministry Representative.
- .3 Prevent debris from blocking, mechanical and electrical systems which must remain in operation.

PART 2 – PRODUCTS Not applicable.

## PART 3 – EXECUTION

- 3.1 Works .1 Dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.
- .2 Make all the demolition indicated and required in the drawings.
- 3.2 Safety code .1 Unless otherwise specified, carry out demolition work in accordance with the prescriptions in section 01 35 30 – Safety Measures.
- 3.3 Demolition .1 Demolish elements as indicated on architecture drawings.
- .2 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as the Works progress.

- .3 At end of each day of work, leave the Works in safe condition so that no part is in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements at all times.
- .4 Demolish to minimize dusting. Keep materials wet as directed by the Ministry Representative.
- .5 Do not sell or burn materials on site.
- .6 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose them in a safe manner to minimize danger at site or during disposal.
- .7 It is forbidden to store rubbish on the ground, use appropriate containers and evacuate each according to work progress. Keep surroundings clean and free for circulation at anytime.

## PART 1 - GÉNÉRAL

- 1.1 Section content .1 Requirements and restrictions regarding the Works.
- 1.2 Documents to submit .1 Submit in advance a written request for cutting material or any modification that may have an influence on :
- .1 **the structural integrity of any building component;**
  - .2 the integrity of waterproof elements or elements that are exposed to exterior bad weather;
  - .3 the functioning mode, maintenance or security of any operating building component;
  - .4 the aesthetic quality of visible components;
  - .5 the Contractor's work.
- .2 The request must include (or give precisions) on elements such as :
- .1 the project designation;
  - .2 a precise location and a description of the concerned Works;
  - .3 a declaration that proves the necessity of cutting and repair;
  - .4 a description of works and products;
  - .5 alternative solutions to cutting and repair;
  - .6 influences on Contractor's work.
  - .7 written permissions of the concerned Contractor.
  - .8 the date and hour of projected work.
- 1.3 Materials .1 Provide a list of required materials before the beginning of the Works.
- .2 Any material substitution must be the object of a substitution request.
- 1.4 Preparation .1 Inspect the Works site and make a list of the existing conditions including elements that can be damaged or be moved during cutting and repairs.
- .2 Once elements are visible and ready for inspection, closely inspect to find any condition that could not enable the work's execution.
- .3 When the cutting and repair works are started, it means the acceptance of existing conditions.
- .4 Provide and install required supports to ensure the nearby construction's integrity; provide working methods to protect other building components from damage.
- .5 Provide and install protection against bad weather at any place that could be exposed during the execution of the Works.

- 1.7 Execution of the works .1 Execute cutting and repair works, to get a complete job.
- .2 Adjust different components between themselves so they can be easily integrated to the building.
- .3 Make the necessary openings in order to enable the execution of the works that, for any reasons, should have been executed at another moment.
- .4 Remove and replace any faulty or not acceptable works.
- .5 If, during the cutting works, an unpredicted event happens, stop the works immediately and inform the Consultant.
- .6 Execute the cutting and repair works with construction methods that will not damage other building elements, and ensure the obtaining of a proper surface for repair and finishing works.
- .7 Complete works with brand new materials in accordance with contractual documents.
- .8 Adjust works to insure waterproofing around pipes, sleeves, ducts and other crossings.
- .9 When crossing through fireproof floor, wall or ceiling completely, seal space around the opening with a fireproof product at the full thickness of the crossed element.
- .10 Complete the finish surfaces to insure uniformly with adjacent finishes. In the case of continuous surface, new finishing works execute up to the nearest intersection between execution the finition of the entire element.

PART 2 – PRODUCTS Not applicable.

PART 3 – EXECUTION Not applicable.

## PART 1 – GENERAL

- 1.1 References .1 Pressure treat the wood according to the norm CSA 080-M1983 series 97 with C.A.Q. Pro Nature (Alcalin Copper Quaternary).
- 1.2 Certificates .1 In the case of pressure treated wood, or wood impregnated in a protective coating, submit the following information, approved by the treatment shop:
- .1 the information listed in the norm AWPA.M2-00 that might be applicable to the to the prescribed treatment and modifications as in CSA 080 series titled “Supplementary general requirement” as AWPA M2 applied to prescribed treatment;
  - .2 the degree of humidity after the drying with a soluble preservation product;
  - .3 the acceptable types of paint, stains and colorless finishing products that may be applied on the treated materials.
- 1.3 Works Extension .1 Any wood piece that’s on the outside of the insulation, in contact with the exterior air, metal or concrete is subjected to the present section and must be pressure treated.
- .2 Any wood piece as indicated to drawings : treated to C.A.Q. (Alcalin Cooper Quaternary).

## PART 2 – PRODUCTS

- 2.1 Preservation Treatments .1 Pressure treat the wood according to CSA 080 with a preservation product C.A.Q. (Alcalin Copper Quaternary) in order to obtain a minimum retention of 6,4kg/m<sup>3</sup> of wood.
- .2 After the treatment with a soluble preservation product, dry out the material in order to obtain a humidity level below 19%.

## PART 3 – EXECUTION

- 3.1 Treated Materials Installation .1 Comply with requirements of the norm AWPA.M4-01.
- .2 With fine sandpaper, remove all the chemical deposits of the pressure treated wood destined to receive a finish product.
- .3 Treat the cracks with a hand applied preservation product as manufacturer’s recommandation.

- .4 The surfaces that become exposed without preservation when the treated wood is cut, pierced or worked must receive, before or after their installation, a coat of the initial applied preservative applied with a brush according to the recommendations of the CCA treatment provider.
  - .1 Acceptable product : Recochem or approved equivalent.
- .5 The Contractor has the responsibility to provide to the different job corps any wood or plywood blockings, nailing strips etc. as required in the drawings.



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PART 1 – GENERAL

- 1.1 References .1 Canadian Standard Association (CSA International).  
.2 Sawing Classification National Commission (SCNA).  
.1 Classification rule for Canadian Lumber 2000.
- 1.2 Quality Control .1 Wood classification stamping: According to an organism recognized by the Canadian Lumber Standards Accreditation Board.

PART 2 – PRODUCTS

- 2.1 Lumber Material .1 Softwood lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:  
.1 CSA 0141-1970.  
.2 NLGA Standard Grading Rules for Canadian Lumber, 1987.
- .2 Furring, blocking, nailing strips, grounds, rough bucks, cants, curbs, fascia backing and sleepers:  
.1 Board sizes: "Standard" or better grade.  
.2 Dimension sizes: "Standard" light framing or better grade.
- 2.2 Fasteners .1 Nails, spikes and staples: to CSA B111.  
.2 Bolts: 12.5mm diameter unless otherwise indicated, complete with nuts and fasteners.  
.3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fiber plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.  
.4 Galvanizing: to CSA G164, use galvanized fasteners for exterior works, interior works in highly humid areas and pressure treated woodworks.
- 2.3 Wood Preservative .1 Refer to section 06 05 73 Wood Treatment.

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PART 3 – EXECUTION

- 3.1 Structure .1 Comply with requirements of the part 9 of the NBC, current version, supplemented by the following paragraphs.
- 3.2 Furring and Blocking .1 Install furring and blocking as required to space-out and support casework, cabinets, wall and ceiling finishes, facings, fascia, soffit, siding and other work as required.
- .2 Align and plumb faces of furring and blocking to a tolerance of 1:600.
- 3.3 Nailing Strips, Grounds, and Rough Bucks .1 If existant materiel need to be replaced nstall rough bucks, nailing strips and linings to rough openings as required to provide backing for frames and other works.
- .2 Provide and install nailing strips in massive wood and/or plywood depending of the case, of appropriate dimensions, to fasten the following elements: temporary closing of openings and any other situation indicated on architecture drawings.
- 3.4 Cants, Curbs, Fascia Backing .1 Install wood cants, fascia backing, nailing strips, curbs and other wood supports as indicated on drawings.
- 3.5 Fasteners .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 If required mill holes as bolt heads do not exceed the surface.
- 3.6 Surface-Applied Wood Preservative .1 Use pressure treated wood for all exterior elements, except for plywood.
- .2 Treat surfaces of other wood elements with wood preservative before installation.
- .3 Apply preservative by dipping, or brush to completely saturate and maintain a wet film on surface for a minimum of 3 minutes for the lumber and one minute for plywood.
- .4 Before installing the elements, re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

## PART 1 – GENERAL

- 1.1 References .1 American National Standards Institute (ANSI)
- .1 ANSI A208.1-99, Particleboard.
  - .2 ANSI A208.2-02, Medium Density Fibreboard (MDF).
  - .3 ANSI/HPVA HP-1-2004, Standard for Hardwood and Decorative Plywood.
- .2 American Society for Testing and Materials International (ASTM)
- .1 ASTM E1333-96(2002), Standard Test Method for Determining Formaldehyde Concentrations in Air and Emissions Rates from Wood Products Using a Large Chamber.
- .3 Architectural Woodwork Manufacturers Association of Canada (AWMAC) and Architectural Woodwork Institute (AWI)
- .1 Architectural Woodwork Quality Standards Illustrated, 8th edition, Version 1.0 2003.
- .4 Canadian Standard Association (CSA International)
- .1 CSA B111-74(R2003), Wire Nails, Spikes and Staples.
  - .2 CAN/CSA-G164-FM92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CSA O121-FM89(R2003), Douglas Fir Plywood.
  - .4 CAN/CSA O141-F91(C1999), Softwood lumber.
  - .5 CSA O151-F04, Candian Softwood Plywood.
  - .6 CSA O153-M1980(R2003), Poplar Plywood.
  - .7 CSA Z760-94, Life Cycle Assessment.
- .5 National Hardwood Lumber Association (NHLA)
- .1 Rules for the Measurement and Inspection of Hardwood and Cypress 1998.
- .6 National Lumber Grades Authority (NLGA)
- .1 Standard Grading Rules for Canadian Lumber 2005.
- .7 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
- .1 SCAQMD Rule 1113-04, Architectural Coatings.
  - .2 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.
- 1.2 Submittals .1 Submit required documents, samples, shop drawings in accordance with Section 01 33 00 – Documents and Samples to be Submitted.

- 1.3 Delivery, storage and handling .1 Deliver, handle, store and protect materials in accordance with Section 01 61 00 - Common Product Requirements.
- .1 Protect materials against dampness during and after delivery.
  - .2 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

## PART 2 – PRODUCTS

- 2.1 Lumber material .1 Refer to structure documents.
- 2.2 Accessories .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; ordinary finish elsewhere.
- .2 Wood screws: steel, type and size to suit application.
  - .3 Adhesive: recommended by manufacturer minimum VOC content.

## PART 3 – EXECUTION

- 3.1 Installation .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise.
- .2 Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects.
  - .3 Form joints to conceal shrinkage.
- 3.2 Construction .1 Fastening:
- .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
  - .2 Design and select fasteners to suit size and nature of components being joined. Use proprietary devices as recommended by manufacturer.
  - .3 Set finishing nails to receive filler. Where screws are used to secure members, countersink screw in round smooth cut hole and plug with wood plug to match material being secured.
  - .4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.
- .2 Standing and running trim:
- .1 Butt and cope internal joints of baseboards to make snug, tight, joint.

## PART 1 - GENERAL

- 1.1 References .1 ASTM A606-85 Specification for Steel Sheet and Strip, Hot-Rolled and Cold-Rolled, High Strength, Low-Alloy, with Improved Atmospheric Corrosion Resistance.
- .2 CAN/CGSB-37.5-M89 Cutback Asphalt Plastic Cement.
- .3 CAN/CGSB-51.32-M77, Coating membrane, water vapour resistant.
- .4 Aluminum Association Designation System for Aluminum Finishes - 1980.
- .5 Aluminum Association Aluminum Sheet Metal Work in Building Construction - 1971.
- .6 Canadian Roofing Contractors Association (CRCA).
- 1.2 Samples .1 Submit shop drawings in accordance with Section 01 33 00 – Documents and Samples to Be Submitted.
- .2 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, color and finish.
- 1.3 Warranty .1 The Contractor must provide a five (5) year warranty for all his metallic flashing Works and against any material, workmanship and waterproofing defect.

## PART 2 - PRODUCTS

- 2.1 Sheet Metal Materials .1 Metal steel zinc coated sheets: 24 cal. gage, according to the details, of commercial quality, conform to ASTM A526, with a Z275 zinc finish, half mat enamel, and color at the choice of the Consultant.
- 2.2 Prefinished Steel Sheets .1 Prefinished Steel sheets factory coated with a silicon modified polyester.
- .1 Color selected by the Consultant from manufacturer's standard range.
- .2 Specular gloss: 30 units, the maximal admissible range being  $\pm 5$  units, conform to ASTM D523.

- .3 Thickness: at least 25 micrometers.
- .4 Resistance to a continuous weather exposition: chalking degree of 8, discoloration of a maximum of 5 units and weathering under 20%, conform to ASTM D822, in the following test conditions:
  - .1 1,000 hours Exposition in the weather resistance test;
  - .2 1,000 hours Exposition in the humidity resistance test.

### 2.3 Accessories

- .1 Protective coating: alkali resistant bituminous paint.
- .2 Plastic cement: to CAN/CGSB 37.5.
- .3 Underlay for metal flashing: dry sheathing to CAN/CGSB-51.32.
- .4 Joints Sealants: see section 07 92 00.
- .5 Cleats: of same material, and temper as sheet metal, minimum 50 mm wide cal.24.
- .6 Fasteners: of same material as sheet metal, to CSA B111, ring thread flat head roofing nails of length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packing.
- .8 Welding: conform to ASTM B32; 50% tin, 50% plumb.
- .9 Soldering flux: rosin, diluted hydrochloric acid or other commercial preparation compatible with the welding materials.
- .10 Touch-up paint: as recommended by prefinished material manufacturer.

### 2.4 Fabrication

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series details or as indicated.
- .2 Fabricate aluminum flashings and other sheet aluminum work in accordance with Aluminum Association Aluminum Sheet Metal Work in Building Construction.
- .3 Form pieces in 2,400 mm maximum lengths. Make allowance for expansion at joints.
- .4 Fold the exposed edges on underside 12 mm. Miter and seal corners with sealant.

- .5 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- .6 Apply isolation coating to metal surfaces to be embedded in concrete or mortar.

### 2.5 Metal Flashings

- .1 Form flashings, copings and fascias to profiles indicated of cal.24 thick of enable metal steels.

## PART 3 - EXECUTION

### 3.1 Installation

- .1 Install sheet metal work in accordance with the drawing's details.
- .2 Hide the fasteners as much as possible; if they must remain visible, get the approval of the Consultant before installing them.
- .3 Provide underlay under sheet metal. Secure in place and lap joints 100 mm.
- .4 As indicated on drawings provide sheet metal flashing of bituminous flashing to frame or other vertical surfaces. Install "S" shape sheet metal joint and fix to strip as indications.
- .5 Lock end joints with sealant.
- .6 Once installation completed, applied touch up on rivets welding, bolt as burned surface.
- .7 Applied zinc primer on galvanized surface or burned surface caused by welding.





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PART 1 – GENERAL

- 1.1 References .1 CGSB 19-GP-5M-1976, Sealing Compound, One Component, Acrylic Base, Solvent Curing.
- .2 CAN/CGSB-19.13, Sealing Compound, One-component, Elastomeric, Chemical Curing.
- .3 CGSB 19-GP-14M-1976, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing.
- .4 CAN/CGSB-19.GP-17-77, One-Component Acrylic Emulsion Base Sealing Compound.
- .5 CAN/CGSB-19-18-M87, One component sealing compound silicone base, solvent polymerisation.
- .6 CAN/CGSB-19-GP-24-M80, Multi-component, Chemical Curing Sealing Compound.
- 1.2 Samples .1 Submit samples in accordance with Section 01 33 00 - Documents and Samples to be Submitted.
- .2 Submit duplicate samples of each type of material and colour.
- 1.3 Delivery, storage and handling .1 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 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 (MSDS) 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 Conform to manufacturer's recommendation for health and security as indicated on data sheet.
- 1.5 Projects conditions .1 Sealing products application as following requirements and conform to manufacturer's prescribed application conditions.

- .2 Product and surface to be sealed, temperature must be at least 5°C during application and not less than – 5°C before cure ended.

### 1.6 Warranty

- .1 Submit a certificate attesting sealing works have a warranty lost of waterproofing cracks, loss of consistency contraction, colors, loss of adhesion stain on adjacent surfaces for a five (5) years period as general requirements.
- .2 Furnish a one (1) year written warranty on products.
- .3 Plan sealing work inspection with Project Manager one year after works acceptance.

## PART 2 – PRODUCTS

### 2.1 Sealant materials

- .1 Sealants acceptable for use on this project must be listed on CGSB Qualified Products List issued by CGSB Qualification Board for Joint Sealants. Where sealants are qualified with primers use on these primers.
- .2 Sealant type 1
  - .1 Sealing product as CAN/ONGC-19.24-M90, elastomeric, many components, modified polyurethane. Colors chosen by the Architect in the standard range.
  - .2 Acceptable products :
    - SIKAFLEX-2C NS from Sika Canada inc.
    - DYMERIC 240 from Tremco ltée
    - STERNSON RC-2 from STERNSON
  - .3 Application on exterior joints between window, frames for adjacent building element on perimeter of wall opening. If for interior joints self-leveling is not possible (wall openings as window) that must permit movement.
- .3 Sealant type 2
  - .1 Latex acrylic sealant with a fungicide to paintable surface, color to company standard by Architect's choice.
  - .2 Acceptable product : Tremco Latex 100 from Tremco or equivalent.
  - .3 Application between window frames and adjacent building element when indicated and joints have to be painted.

### 2.2 Support material

- .1 As manufacturer's recommendation compatible with exterior works.
  - .1 Polyethylene, Urethane, Neoprene or Vinyl Foam.
    - .1 Extruded closed cell foam backer rod, hardness 20, Shore A scale.
    - .2 Size: oversize 30 to 50 %.

- .2 Neoprene or Butyl Rubber.
  - .1 Round solid rod, Shore A hardness 70.
- .3 High Density Foam.
  - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, 6 mm maximum thickness.
- .4 Bond Breaker Tape.
  - .1 Polyethylene bond breaker tape which will not bond to sealant.
- .5 Ventilation tube ¼ inch interior diameter, PVC.

- .2 All finition joint for ceramic or woodwork cabinet must be fine line compatible with finishing to be sealed.

### 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.

### 2.4 Primer

- .1 If required and recommended by manufacturer, use recommended primer in relation with each type of substrat even when the primer are optional.

## PART 3 – EXECUTION

### 3.1 Surface preparation

- .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.
- .6 Surface of element to be sealed must be at temperature **between -5°C and 25°C** for application except manufacturer's limitation.

### 3.2 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.
  
- 3.3 Backup material .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape.
  
- 3.4 Mixing .1 Mix materials in strict accordance with sealant manufacturer's instructions.
  
- 3.5 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, 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 Cleanup.
  - .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

<u>1.1 Related Works</u>	.1	Joints sealants	Section 07 92 00
	.2	Cleaning	Section 01 74 00
<u>1.2 References</u>	.1	CAN/CSA-A440,2-M90 – Windows and CAN/CGSB-82.1-M89.	
	.2	Designation System for Aluminum Finishes (2003) AA (Aluminum Association).	
<u>1.3 Description of the Works</u>	.1	The workmanship, materials and tools will be provided for the fabrication and installation of aluminum windows, as described in the Drawings and Specification.	
<u>1.4 Calculation Criteria</u>	.1	The windows must be installed in the exterior walls and designed in order to make sure: .1 that their elements can expand and contract freely between temperatures of -35°C and 39°C. .2 that the maximum deflection of the mullions is less than 1/175 of their bearable load tested in conformity with ASTM E330 under a wind charge of 1.2 kPa for a maximum allowed deflection of 15mm. Submit the test certificates.	
	.2	Use the prescribed calculation criteria required by the NBC and the required safety recommendations.	
<u>1.5 Samples</u>	.1	Submit samples in accordance with Section 01 33 00 – Documents and Samples to Be Submitted.	
	.2	Submit one representative model of a type window (min. 400mm x 400mm).	
	.3	Include frame, sash, sill, glazing and weatherproofing method, insect screens, surface finish and hardware. Show location of manufacturer's nameplates.	

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- 1.6 Mock-ups .1 Build a mock-up showing the window installation, its perimeter caulking, its vapor barrier and air barrier sealing, its alignment inside the wall and the joints sealants Works. The mock-up must remain part of the finished Works.
- 1.7 Shop Drawings .1 Submit shop drawings in accordance with Section 01 33 00 – Documents and Samples to Be Submitted.
- .2 Indicate materials, jamb and sill, profiles of components, interior and exterior trim junction between combination units elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates.
- 1.8 Test Reports .1 Submit a recent report from an approved and reliable laboratory, that certifies the following data and elements are conform to the Specification:
- .1 Wooden thermo-break windows;
  - .2 Waterproofing wood preservation product;
  - .3 Air resistance;
  - .4 Water resistance;
  - .5 Wind resistance;
  - .6 Condensation resistance (53,8);
  - .7 Resistance and rigidity of the framing;
  - .8 Thief resistance.
- 1.9 Warranty .1 The ensemble of the windows, window-doors, beadings, spandrel panels and hinges are guaranteed for three (3) year after the Works completion date.
- .2 Thermo glazing is guaranteed for five (5) years after the Works completion date.
- 1.10 Maintenance Data .1 Provide operation and maintenance data for windows for incorporation into manual
- PART 2 – PRODUCTS
- 2.1 Materials .1 Materials: to CAN/CSA-A440-M90 supplemented as follows.

- .2 All aluminum windows by same manufacturer.
- .3 Frames: Aluminum, with thermal break.
- .4 Ties : stainless steel.
- .5 Glazing: see Section 00 80 50.
- .6 Isolation coating: alkali resistant bituminous paint.
- .7 Glass ribbons of macro-polyisobutylene high adherence compressible with integrated continuous spacer.

## 2.2 Window Type and Classification

- .1 Types: aluminium insulated windows with fixed window leaf.
- .2 Window :
  - .1 Fixed aluminium window;
  - .2 Dimensions according to the drawings;
  - .3 Sill: always made of solid wood, covered with flashing;
  - .4 Exterior finish:
    - Frame and shutter enameled aluminum, color white, finish Duranar XL from Anacolor.
  - .5 Exterior extension of 2 ¼" no. DA-526, to provide and install for the exterior window sill only.
  - .6 Classification as CAN/CSA A-440
    - Air permability : A3
    - Waterproofing : B7
    - Wind load resistance : C3
    - Thermal efficiency : D2
  - .7 Acceptable products : as manufactured by Gamma Industries, A & D Prevost, Shalwin or Solarco.

## 2.3 Fabrication

- .1 Fabricate in accordance with CAN/CSA-A440 supplemented with the following instructions:
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .3 Brace frames to maintain squareness and rigidity during shipment and installation.
- .4 The weather stripping for the windows and door panels must be made of black neoprene, 60 ± 5 measured hardness. Installed in grooves, glass moulding in frame extrusions. Panels with two layers of weatherstrips.
- .5 The fixed shutter must be anchored to the frames with screws and air,

- water and vapour sealed, plus the regular weather stripping. The frame's weather stripping must be continuous.
- .6 The Contractor must take the necessary precautions to protect the windows after their installation and until the end of the Works.
  - .7 Provide bracing to frame to maintain squareness and rigidity during shipment and installation.
  - .8 Aluminum alloy no 6063-T5 with a minimum of 1,57 mm thickness.
  - .9 Finish steel clips and reinforcement with 380 g/m<sup>2</sup> zinc coating, to CAN / GSA-G164.
  - .10 Frame and panels in 2 parts, attached by a P.V.C. thermal barrier of 80 + or – 5 to durometre . This thermal barrier insert in a dovetail joint of frame and panel. Compressed by an aluminum roll except for frame sill, to obtain a solid mounting with no screws angles in place and to prevent direct contact between interior and exterior parts. Four (4) sides of windows screwed butyl ribbon inserted in exterior part of frame.
  - .11 Glass is maintained in place by interior pressure glazing stops with incorporated weatherstrip of sentoprene (flexible vinyl) inside and of butyl ribbon outside for sealed glass panels of 19mm thickness. Glazing must be replaceable from inside the building at any time by removing glaze stops.
  - .12 Fixed window panel are installed to frame by stainless steel screws and sealed for complete leak tightness to water, water vapor, added to normal weatherstrip.
  - .13 Draining holes of 4,76 mm of diameter to drain water to exterior by draining basin.
  - .14 Weatherstrip with two (2) blades installed at the center of frame to prevent any thermal lost.
  - .15 Screws, bolts and ties are of steel plated with cadmium.
  - .16 Weatherstrip of frame and panels are continuous without any cut and welded at joints.
  - .17 Ties are of stainless steel, 300 series.
  - .18 Assembly Joints with screws trough aluminum sheet in extruded grooves integrated to joined sections.
  - .19 Joints are shop manufactured with precision to have a clean line.
  - .20 Glazing stops are pressure applied.
  - .21 Holes to be drilled for pressure balancing and water dripping.



.22 Adjust weatherstrip compression in shop factory.

2.4 Isolation Coating .1 Isolate aluminum from following components, by means of isolation coating:  
.1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.  
.2 Wood.

2.5 Glazing .1 Glaze windows in accordance with CAN/CSA-A440.  
.2 Use high density vinyl weather stripping. No sealant or interior mastic will be tolerated on the interior side of the glazing.  
.3 See Section 08 80 50 for all the glazing information.  
.4 Spare material : for each type of window, Contractor will provide a supplementary insulated glass panel as spare material.

2.6 Air Barrier and Vapour Barrier .1 Equip window frames with factory installed air barrier and 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 air tightness 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.

2.7 Surface moulding .1 Install aluminum moulding as shown on architecture drawings. Fix with 3 mm polychim transparent sealant to the edges of moulding. Applied to the interior and exterior surface.

PART 3 – EXECUTION

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- 3.1 Window Installation .1 Install in accordance with CAN/CSA-A440.
- 3.2 Window Sills .1 Install all the exterior window sills (if required) in order to create a uniform 8% slope towards the outside; place them true and leveled on their length. Use single pieces for each window.
- .2 Install the window sills with anchoring devices places to the ends of the single piece window sills and at every 600mm oc between the ends.

- .3 Fasten the window sills with stainless steel tapping screws in a bed of adhesive sealant.

### 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 07 92 00 – Joints Sealants. Conceal sealant within window units except where exposed use is permitted by the Ministry Representative.
- .3 Fill the gaps between windows and non structural frames with a low expansion urethane foam, in order to prevent any air infiltration. Leave enough room for the insertion of the joint supports and the sealants installation. No tow, mineral wool or other will be accepted as a replacement for urethane foam.
- .4 Control the injection pressure and the expansion of the product to make sure the frames deform or break due to the foam's pressure on the frame. The final result must preserve the integrity of the windows, make them perfectly sealed and protect the window's warranty.



PART 1 – GENERAL

<u>1.1 Related Works</u>	.1	Joints Sealants	Section 07 92 00
	.2	Aluminum windows	Section 08 11 16
<u>1.2 Work Description</u>	.1	Window glazing.	
<u>1.3 References</u>	.1	ASTM C542-82(1984) Specification for Lock-Strip Gaskets.	
	.2	CAN/CGSB-19.18-M87 Sealing Compound, One-Component, Silicone Base, Solvent Curing.	
	.3	CAN/CGSB-19.24-M80 Sealing and Bedding Compound, Multi-Component, Acoustical with Chemical Polymerization.	
	.4	CAN/CGSB-12.1-M79 Glass, Safety, Tempered or Laminated.	
	.5	CAN/CGSB-12.2-M76 Glass, Sheet, Flat, Clear.	
	.6	CAN/CGSB-12.5-M86 Mirrors, Silvered.	
	.7	CAN/CGSB-12.8-M76 Insulating Glass Units.	
<u>1.4 Samples</u>	.1	Submit samples in accordance with Section 01 33 00 – Documents and Samples to Be Submitted.	
	.2	Submit two 300 mm glazing, insulating window panels, mirrors and waterproofing product samples.	
<u>1.5 Spare materials</u>	.1	For each type of windows (F1 to F5 included), Contractor must provide insulating glass unit as article 2.1.2 as spare material.	
	.2	Deposit glass unit in a adequate packaging to the place where Parks Canada Representative will indicate.	

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PART 2 – PRODUCTS

- 2.1 Glass Materials .1 Clear sheet glass: to CAN/CGSB-12.2.
- .2 Insulating glass units:  
.1 Conform to CAN/CGSB-12.8, total thickness of 19mm with outer pane of 3 mm thick low emissivity glass, LOW-E position 3 for a 12.7mm spacing and inner pane of 3mm thick clear glass with a non-conductive “Thermal Edge” intercalary as LOF, “CLEAR FLOAT GLASS”, or approved equivalent.  
.2 Only insulating glass units listed on CGSB Qualified Products List are acceptable for use on this project.
- 2.2 Glazing and Compound Sealing Materials .1 The compounds must be compatible with the sealants and the neoprene blockings of the insulated window panels.
- .2 Sealant compound: one component, silicone base, solvent curing to CAN/CGSB-19.18, see Section 07 92 00.
- .3 Sealing product: multi-component mastic, type 2, class A, conform to CAN/CGSB-19.24 Sealing and Bedding Compound, Multi-Component, Acoustical with Chemical Polymerization. Refer to section 07 92 00.
- 2.3 Accessories .1 Glazing tape: preformed butyl tape, 10-15 durometer hardness, paper release.
- .2 Setting blocks: neoprene, Shore "A" required durometer hardness 100 mm long x 6 mm high x width to suit glass thickness.
- .3 Spacer shims: neoprene, Shore "A" durometer hardness 40.5, 75 mm long x 2.4 mm thick x 9 mm high.
- .4 Glazing beadings: PVC, common made, for aluminum sheet glazing, standard color.
- .5 Extruded joints: Black neoprene, conform to ASTM C542, type beading for encased strips. The support crossing joint must have an inside channel and holes for drainage. Joints' angle pieces must be continuous, injection molded and thermally welded to the main joint.
- .6 Primer-sealers and cleaners: to glass manufacturer's standard.
- .7 Breather tubes: to manufacturer's standard.

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## PART 3 – EXECUTION

- 3.1 Workmanship .1 Remove protective coatings and clean contact surfaces with solvent and wipe dry.
- .2 Apply primer-sealer to contact surfaces.
- .3 Place setting blocks as per manufacturer's instructions.
- .4 Install glass, rest on setting blocks, ensure full contact and adhesion at perimeter.
- .5 Install removable stops, without displacing tape or sealant.
- .6 Provide edge clearance of 5 mm minimum.
- .7 Insert spacer shims to center glass in space. Place shims at 600 mm oc and keep 6 mm below sight line.
- .8 Apply cap bead of sealant at exterior void.
- .9 Apply sealant to uniform and level line, flush with sightline and tooled or wiped with solvent to smooth appearance.
- .10 Do not cut or abrade tempered, heat treated, or coated glass.
- 3.2 Exterior and Interior Glazing .1 Dry method - tape/tape and sealant:
- .1 Cut glazing tape to proper length and set against permanent stops 5 mm below sightline. Install horizontal strips first, extend over entire width of opening before applying vertical strips. Weld corners together by butting tape and dabbing with sealant.
- .2 Place glazing tape on glass in manner described above.
- 3.3 Finishing .1 Immediately remove sealant and compound droppings from finished surfaces. Remove labels after work is completed.





PART 1 – GENERAL

- 1.1 References .1 Department of Justice Canada (Jus)  
.1 Canadian Environmental Protection Act (CEPA), 1999, c. 33
- .2 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
- .3 Society for Protective Coatings (SSPC)  
.1 SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.
- 1.2 References .1 Refer to section 01 45 00 Quality Control.
- 1.3 Submittals .1 Submittals in accordance with Section 01 33 00 – Documents and Samples to be Submitted.
- .2 Product Data:  
.1 Submit product data and instructions for each paint and coating product to be used.  
.2 Submit product data for the use and application of paint thinner.
- .3 Samples:  
.1 Submit full range colour sample chips to indicate where colour availability is restricted.  
.2 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.  
.3 Manufacturer's Instructions:  
.1 Submit manufacturer's installation and application instructions.
- 1.4 Delivery, storage and handling .1 Packing, Shipping, Handling and Unloading:  
.1 Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Acceptance at Site. Identify products and materials with labels indicating:  
.1 Manufacturer's name and address.  
.2 Type of paint or coating.  
.3 Compliance with applicable standard.  
.4 Colour number in accordance with established colour schedule.

- .3 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .4 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .5 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
- .6 Fire Safety Requirements:
  - .1 Provide one dry chemical fire extinguisher adjacent to storage area.
  - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
  - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

1.5 Site conditions

- .1 Heating, Ventilation and Lighting:
  - .1 Ventilate enclosed spaces.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels Unless pre-approved written approval by product manufacturer, perform no painting when:
  - .1 Ambient air and substrate temperatures are below 10 degrees C.
  - .2 Substrate temperature is above 32 degrees C unless paint is specifically formulated for application at high temperatures.
  - .3 Substrate and ambient air temperatures are not expected to fall within paint manufacturer's prescribed limits.
  - .4 The relative humidity is under 85 % or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
  - .5 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.

- .6 Perform painting work when maximum moisture content of the substrate is below:
  - .1 15 % for wood.
  - .2 12 % for plaster and gypsum board.
  
- .3 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.
  
- .4 Additional interior application requirements:
  - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.

## PART 2 – PRODUCTS

- 2.1 Materials .1 Provide paint materials for paint systems from single manufacturer.
  
- 2.2 Colors .1 Submit colors list to Consultant for examination.
  - .2 Colors at 2.2.3 refer to Sico Company.
  
- 2.3 Interior painting systems .1 Interior painting systems refer to Sico.
  - .1 For wall and ceiling gypsum board.
    - .1 New surfaces : emulsion paint as CAN/CGSB-1.119 as Ecosource from Sico 850-130 no V.O.C.
    - .2 Two coats emulsion paint with low gloss as CAN/CGSB-1.209, 100 % acrylic, no V.O.C. as Ecosource from Sico series 853 velvet finish.
  
  - .2 Wood works (window shelf and edges):
    - .1 One primer coat, one coat of laquer as ONGC 1-GP-16M from Sico 205-112.
    - .2 One latex prime low V.O.C. as Sico Expert 870-177.
    - .3 Two coats of 100 % latex paint, no V.O.C. as Ecosource from Sico Series 855, melamine finish.

PART 3 – EXECUTION

- 3.1 Manufacturer's instructions .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.
- 3.2 General .1 Perform preparation and operations for interior painting except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.
- 3.3 Examination .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- 3.4 Preparation .1 Protection:
- .1 Protect existing building surfaces and adjacent elements from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Consultant.
- .2 Protect factory finished products and equipment.
- .2 Clean and prepare interior surfaces
- .1 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths.
- .3 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .4 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes.
- .5 Do not apply paint until prepared surfaces have been accepted by Consultant.

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- 3.5 Application .1 Method of application to be as approved by Consultant. Apply paint by brush or roller. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
- .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
- .2 Work paint into cracks, crevices and corners.
- .3 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
- .4 Remove runs, sags and brush marks from finished work and repaint.
- .3 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .4 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .5 Sand and dust between coats to remove visible defects.
- .6 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- 3.6 Site tolerances .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- 3.7 Field quality control .1 Interior painting or paint coating shall be inspected and approved by Consultant.
- 3.8 Restoration .1 Clean and re-install hardware items and all lightning, fixtures and heating equipment removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.

- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.