



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

INVITATION TO TENDER

FOR

RE-ROOFING

Building 72

Project: 1314143001P0001

CENTRAL EXPERIMENTAL FARM (CEF)

Agriculture and Agri-Food Canada (AAFC)

K.W. Neatby Building, Main Entrance

960 Carling Avenue

Ottawa, Ontario K1A 0C6

SOLICITATION #13-1287

Jean-Pierre Simard

Senior Contracts Officer

613 759-6157

jean-pierre.simard@agr.gc.ca

**CLOSING: Monday November 18, 2013 at 02:00 p.m.
Eastern Standard Time (EST)**

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SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01 BID DOCUMENTS

- 1) The following are the bid documents:
 - a) Invitation to Tender - Page 1;
 - b) Special Instructions to Bidders;
 - c) General Instructions to Bidders;
 - d) Clauses & Conditions identified in "Contract Documents";
 - e) Drawings and Specifications;
 - f) Bid and Acceptance Form and related Appendice(s); and
 - g) Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

SI02 ENQUIRIES DURING THE SOLICITATION PERIOD

- 1) Enquiries regarding this bid must be submitted in writing as early as possible within the solicitation period to:

Jean-Pierre Simard
Senior Contracts Officer
Agriculture and Agri-Food Canada
960 Carling Ave. (K.W. Neatby building)
Ottawa, Ontario
K1A 0C6
Telephone: 613 759-6157
Facsimile: 613 759-7005
Jean-pierre.simard@agr.gc.ca

Except for the approval of alternative materials as described in GI15 of the "General Instructions to Bidders", enquiries should be received no later than one (1) calendar day prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.

- 2) To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
- 3) All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed **ONLY** to the Contracting Officer named herein. Failure to comply with this requirement may result in the bid being declared non-responsive.

SI03 SITE VISIT

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for a tour of the work site. The site visit will be held on **Tuesday November 12, 2013 at 10:00 am** at the CEF Ottawa, 960 Carling Avenue, Ottawa. Bidders who do not attend or send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

SI04 REVISION OF BID

A bid may be revised by letter in accordance with GI10 of the "General Instructions to Bidders".

SI05 BID RESULTS

Following solicitation closing, bidders may ask the results of the bid opening by calling the CEF at Telephone No. (613) 759-6157.

SI06 INSUFFICIENT FUNDING

In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may:

- a) cancel the solicitation; or
- b) obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or
- c) negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

SI07 BID VALIDITY PERIOD

- 1) Canada reserves the right to seek an extension to the bid validity period prescribed in BA04 of the Bid and Acceptance Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
- 2) If the extension referred to in paragraph 1) of SI07 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
- 3) If the extension referred to in paragraph 1) of SI07 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either
 - a) continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
 - b) cancel the invitation to tender.
- 4) The provisions expressed herein do not in any manner limit Canada's rights in law or under GI11 of the "General Instructions to Bidders".

SI08 CONSTRUCTION DOCUMENTS

The successful contractor will be provided with one paper copy of the sealed and signed drawings, the specifications and the amendments upon acceptance of the offer. Obtaining more copies shall be the responsibility of the contractor including costs.

SI09 SECURITY CLEARANCE

This document contains no mandatory security requirements.

SI10 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies:

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appl>

Contracts Canada (Buy and Sell):

<https://www.achatsetventes-buyandsell.gc.ca/eng/welcome>

Canadian economic sanctions:

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

Contractor Performance Evaluation Report (Form PWGSC-TPSGC 2913):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913.pdf>

Certificate of Insurance (form PWGSC-TPSGC 357):

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/357.pdf>

SACC Manual:

<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>

Schedules of Wage Rates for Federal Construction Contracts:

http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml

GENERAL INSTRUCTIONS TO BIDDERS (GI)

GI01 Code of Conduct and Certifications – Bid

1. Bidders must comply with the [Code of Conduct for Procurement](#). In addition to the [Code of Conduct for Procurement](#), bidders must:
 - a) respond to bid solicitations in an honest, fair and comprehensive manner,
 - b) accurately reflect their capacity to satisfy the requirements stipulated in the bid solicitations and resulting contracts,
 - c) submit bids and enter into contracts only if they will fulfill all obligations of the Contract.
2. Bidders further understand that, to ensure fairness, openness and transparency in the procurement process, the commission of certain acts or offences will render them ineligible to be awarded a contract. Canada will declare non-responsive any bid in respect of which the information herein requested is missing or inaccurate, or in respect of which the information contained in the certifications specified hereinafter is found to be untrue, in any respect, by Canada. If it is determined, after contract award, that the Bidder made a false declaration, Canada will have the right to terminate the Contract for default. The Bidder will be required to diligently maintain up-to-date the information herein requested. The Bidder and any of the Bidder's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any contract arising from this bid solicitation.
3. For the purpose of this section, everyone, including but not limited to organizations, bodies corporate, societies, companies, firms, partnerships, associations of persons, parent companies, and subsidiaries, whether partly or wholly-owned, as well as individuals, and directors, are Bidder's affiliates if:
 - a. directly or indirectly either one controls or has the power to control the other, or
 - b. a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the acts or convictions specified in this section which has the same or similar management, ownership, or principal employees, as the case may be.

4. Bidders who are incorporated, including those bidding as a joint venture, must provide with their bid or promptly thereafter a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide with their bid or promptly thereafter the name of the owner. Bidders bidding as societies, firms, or partnerships do not need to provide lists of names. If the required names have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Canada may, at any time, request that a Bidder provide properly completed and Signed Consent Forms ([Consent to a Criminal Record Verification form - PWGSC-TPSGC 229](#)) for any or all

individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the bid being declared non-responsive.

5. The Bidder must diligently maintain an up-to-date list of names by informing Canada in writing of any change occurring during the validity period of the bid as well as during the period of any contract arising from this bid solicitation. The Bidder must also, when so requested, provide Canada with the corresponding Consent Forms.
6. By submitting a bid, the Bidder certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Bidder, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties.
7. By submitting a bid, the Bidder certifies that neither the Bidder nor any of the Bidder's affiliates have directly or indirectly, paid or agreed to pay, and will not, directly or indirectly, pay a contingency fee to any individual for the solicitation, negotiation or obtaining of the Contract if the payment of the fee would require the individual to file a return under section 5 of the [Lobbying Act](#).
8. By submitting a bid, the Bidder certifies that no one convicted under any of the provisions under a) or b) are to receive any benefit under a contract arising from this bid solicitation. In addition, the Bidder certifies that except for those offences where a criminal pardon or a record suspension has been obtained or capacities restored by the Governor in Council, neither the Bidder nor any of the Bidder's affiliates has ever been convicted of an offence under any of the following provisions:
 - a. paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the [Financial Administration Act](#), or
 - b. section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud*) for fraud committed against Her Majesty or section 418 (*Selling defective stores to Her Majesty*) of the [Criminal Code](#) of Canada, or
 - c. section 462.31 (*Laundering proceeds of crime*) or sections 467.11 to 467.13 (*Participation in activities of criminal organization*) of the [Criminal Code](#) of Canada, or
 - d. section 45 (*Conspiracies, agreements or arrangements between competitors*), 46 (*Foreign directives*) 47 (*Bid rigging*), 49 (*Agreements or arrangements of federal financial institutions*), 52 (*False or misleading representation*), 53 (*Deceptive notice of winning a prize*) under the [Competition Act](#), or
 - e. section 239 (*False or deceptive statements*) of the [Income Tax Act](#), or
 - f. section 327 (*False or deceptive statements*) of the [Excise Tax Act](#), or
 - g. section 3 (*Bribing a foreign public official*) of the [Corruption of Foreign Public Officials Act](#), or
 - h. section 5 (*Trafficking in substance*), section 6 (*Importing and exporting*), or section 7 (*Production of substance*) of the [Controlled Drugs and Substance Act](#).
9. In circumstances where a criminal pardon or a record suspension has been obtained, or capacities have been restored by the Governor in Council, the Bidder must provide with its bid or promptly thereafter a copy of confirming documentation from an official source. If such documentation has not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply will render the bid non-responsive.
10. Bidders understand that Canada may contract outside of the present solicitation process with a supplier who has been convicted of an offense enumerated under c) to h) of the paragraph hereinabove, or who is affiliated with someone who has been convicted of an offense enumerated

under c) to h) of the paragraph hereinabove, when required to do so by law or legal proceedings, or when Canada considers it necessary to the public interest for reasons which include, but are not limited to:

- o Only one person is capable of performing the contract;
- o Emergency;
- o National security;
- o Health and safety;
- o Economic harm;

Canada reserves the right to impose additional conditions or measures to ensure the integrity of the procurement process.

GI02 Completion of Bid

1. The bid shall be
 - a. submitted on the Bid and Acceptance Form provided in the solicitation or a clear and legible reproduced copy of such Bid and Acceptance Form that must be identical in content and format to the Bid and Acceptance Form provided in the solicitation;
 - b. based on the Bid Documents listed in the Special Instructions to Bidders;
 - c. correctly completed in all respects;
 - d. signed by a duly authorized representative of the Bidder; and
 - e. accompanied by:
 - i. bid security as specified in GI08; and
 - ii. any other document or documents specified elsewhere in the solicitation where it is stipulated that said documents are to accompany the bid.
2. Subject to paragraph 6) of GI11, any alteration to the pre-printed or pre-typed sections of the Bid and Acceptance Form, or any condition or qualification placed upon the bid shall be cause for disqualification. Alterations, corrections, changes or erasures made to statements or figures entered on the Bid and Acceptance Form by the Bidder shall be initialed by the person or persons signing the bid. Alterations, corrections, changes or erasures that are not initialed shall be deemed void and without effect.
3. Unless otherwise noted elsewhere in the Bid Documents, facsimile copies of bids are not acceptable.

GI03 Identity or Legal Capacity of the Bidder

1. In order to confirm the authority of the person or persons signing the bid or to establish the legal capacity under which the Bidder proposes to enter into Contract, any Bidder who carries on business in other than its own personal name shall, if requested by Canada, provide satisfactory proof of:
 - a. such signing authority; and
 - b. the legal capacity under which it carries on business;

prior to contract award. Proof of signing authority may be in the form of a certified copy of a resolution naming the signatory(ies) that is (are) authorized to sign this bid on behalf of the corporation or partnership. Proof of legal capacity may be in the form of a copy of the articles of incorporation or the registration of the business name of a sole proprietor or partnership.

GI04 Applicable Taxes

1. "Applicable Taxes" means the Goods and Services Tax (GST), the Harmonized Sales Tax (HST), and any provincial tax, by law, payable by Canada such as, the Quebec Sales Tax (QST) as of April 1, 2013.

GI05 Capital Development and Redevelopment Charges

1. For the purposes of GC1.8, "Laws, Permits and Taxes", in the General Conditions of the Contract, only fees or charges directly related to the processing and issuing of building permits shall be included. The Bidder shall not include any monies in the bid amount for special municipal development, redevelopment or other fees or charges which a municipal authority may seek as a prerequisite to the issuance of building permits.

GI06 Registry and Pre-qualification of Floating Plant

1. Dredges or other floating plant to be used in the performance of the Work must be on Canadian registry. For dredges or other floating plant that are not of Canadian make or manufacture, the Bidder must obtain a certificate of qualification from Industry Canada as described in the Floating Plant Appendix of the Bid and Acceptance Form, and this certificate must accompany the bid. Plant so qualified by Industry Canada may be accepted on this project

GI07 Listing of Subcontractors and Suppliers

1. Notwithstanding any list of Subcontractors that the Bidder may be required to submit as part of the bid, the Bidder shall, within forty-eight (48) hours of receipt of a notice to do so, submit all information requested in the said notice including the names of Subcontractors and Suppliers for the part or parts of the Work listed. Failure to do so shall result in the disqualification of its bid.

GI08 Bid Security Requirements

1. The Bidder shall submit bid security with the bid in the form of a bid bond or a security deposit in an amount that is equal to not less than 10 percent of the bid amount. The maximum amount of bid security required with any bid is \$2,000,000.
2. A bid bond (form [PWGSC-TPSGC 504](#)) shall be in an approved form, properly completed, with original signatures and issued by an approved company whose bonds are acceptable to Canada either at the time of solicitation closing or as identified in Treasury Board Appendix L, [Acceptable Bonding Companies](#).
3. A security deposit shall be an original, properly completed, signed where required and be either
 - a. a bill of exchange, bank draft or money order made payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or
 - b. bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada.
4. For the purposes of subparagraph 3. a. of GI08
 - a. a bill of exchange is an unconditional order in writing signed by the Bidder and addressed to an approved financial institution, requiring the said institution to pay, on

demand, at a fixed or determinable future time a sum certain of money to, or to the order of, the Receiver General for Canada;

- b. if a bill of exchange, bank draft or money order is certified by or drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in subparagraph 4.c. of GI08, either by letter or by a stamped certification on the bill of exchange, bank draft or money; and
 - c. An approved financial institution is
 - i. a corporation or institution that is a member of the Canadian Payments Association as defined in the [Canadian Payments Act](#);
 - ii. a corporation that accepts deposits that are insured, to the maximum permitted by law, by the Canada Deposit Insurance Corporation or the "Autorité des marchés financiers";
 - iii. a corporation that accepts deposits from the public if repayment of the deposit is guaranteed by Her Majesty the Queen in right of a province;
 - iv. a corporation, association or federation incorporated or organized as a credit union or co-operative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137(6) of the [Income Tax Act](#); or
 - v. Canada Post Corporation.
5. Bonds referred to in subparagraph 3. b. of GI08 shall be provided on the basis of their market value current at the date of solicitation closing, and shall be
- a. payable to bearer;
 - b. accompanied by a duly executed instrument of transfer of the bonds to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations; or
 - c. registered as to principal or as to principal and interest in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations.
6. As an alternative to a security deposit an irrevocable standby letter of credit is acceptable to Canada and the amount shall be determined in the same manner as a security deposit referred to above.
7. An irrevocable standby letter of credit referred to in paragraph 8) of GI08 shall
- a. be an arrangement, however named or described, whereby a financial institution (the "Issuer") acting at the request and on the instructions of a customer (the "Applicant") or on its own behalf,
 - i. is to make a payment to, or to the order of, the Receiver General for Canada as the beneficiary;

- ii. is to accept and pay bills of exchange drawn by the Receiver General for Canada;
 - iii. authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
 - iv. authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with;
 - b. state the face amount which may be drawn against it;
 - c. state its expiry date;
 - d. provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the Departmental Representative identified in the letter of credit by his/her office;
 - e. provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
 - f. provide that it is subject to the International Chamber of Commerce (ICC) *Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision*, ICC Publication No. 600, Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and
 - g. be issued or confirmed, in either official language, by a financial institution which is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.
8. Bid security shall lapse or be returned as soon as practical following:
- a. the solicitation closing date, for those Bidders submitting non-compliant bids; and
 - b. the administrative bid review, for those Bidders submitting compliant bids ranked fourth to last on the schedule of bids; and
 - c. the award of contract, for those Bidders submitting the second and third ranked bids; and
 - d. the receipt of contract security, for the successful Bidder; or
 - e. the cancellation of the solicitation, for all Bidders.
9. Notwithstanding the provisions of paragraph 8 of GI08 and provided more than three compliant bids have been received, if one or more of the bids ranked third to first is withdrawn or rejected for whatever reason then Canada reserves the right to hold the security of the next highest ranked compliant bid in order to retain the bid security of at least three valid and compliant bids.

GI09 Submission of Bid

1. The Bid and Acceptance Form, duly completed, shall be enclosed and sealed in an envelope provided by the Bidder, and shall be addressed and submitted to the office designated on the Front Page "Invitation to Tender" for the receipt of bids. The bid must be received on or before the date and time set for solicitation closing.

2. Unless otherwise specified in the Special Instructions to Bidders
 - a. the bid shall be in Canadian currency;
 - b. exchange rate fluctuation protection is not offered; and
 - c. any request for exchange rate fluctuation protection shall not be considered.
3. Prior to submitting the bid, the Bidder shall ensure that the following information is clearly printed or typed on the face of the bid envelope:
 - a. Solicitation Number;
 - b. Name of Bidder;
 - c. Return address; and
 - d. Closing Date and Time.
4. Timely and correct delivery of bids is the sole responsibility of the Bidder.

GI10 Revision of Bid

1. A bid submitted in accordance with these instructions may be revised by letter provided the revision is received at the office designated for the receipt of bids, on or before the date and time set for the closing of the solicitation. The letter shall bear the Bidder's letterhead or a signature that identifies the Bidder.
2. A revision to a bid that includes unit prices must clearly identify the change(s) in the unit price(s) and the specific item(s) to which each change applies.
3. A letter submitted to confirm an earlier revision shall be clearly identified as a confirmation.
4. Failure to comply with any of the above provisions shall result in the rejection of the non-compliant revision(s) only. The bid shall be evaluated based on the original bid submitted and all other compliant revision(s).

GI11 Rejection of Bid

1. Canada may accept any bid, whether it is the lowest or not, or may reject any or all bids.
2. Without limiting the generality of paragraph 1) of GI11, Canada may reject a bid if any of the following circumstances is present:
 - a. the Bidder's bidding privileges are suspended or are in the process of being suspended;
 - b. the bidding privileges of any employee or subcontractor included as part of the bid are suspended or are in the process of being suspended, which suspension or pending suspension would render that employee or subcontractor ineligible to bid on the Work, or the portion of the Work the employee or subcontractor is to perform;
 - c. the Bidder is bankrupt, or where for whatever reason, its activities are rendered inoperable for an extended period;
 - d. evidence, satisfactory to Canada, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Bidder, any of its employees or any subcontractor included as part of its bid;
 - e. evidence satisfactory to Canada that based on past conduct or behavior, the Bidder, a sub-contractor or a person who is to perform the Work is unsuitable or has conducted himself/herself improperly;
 - f. with respect to current or prior transactions with Canada

- i. Canada has exercised, or intends to exercise, the contractual remedy of taking the work out of the contractor's hands with respect to a contract with the Bidder, any of its employees or any subcontractor included as part of its bid; or
 - ii. Canada determines that the Bidder's performance on other contracts is sufficiently poor to jeopardize the successful completion of the requirement being bid on.
3. In assessing the Bidder's performance on other contracts pursuant to subparagraph 2.f. i & ii of GI11, Canada may consider, but not be limited to, such matters as:
 - a. the quality of workmanship in performing the Work;
 - b. the timeliness of completion of the Work;
 - c. the overall management of the Work and its effect on the level of effort demanded of the department and its representative; and
 - d. the completeness and effectiveness of the Contractor's safety program during the performance of the Work.
4. Without limiting the generality of paragraphs 1), 2) and 3) of GI11, Canada may reject any bid based on an unfavourable assessment of the
 - a. adequacy of the bid price to permit the work to be carried out and, in the case of a bid providing prices per unit, whether each such price reasonably reflects the cost of performing the part of the work to which that price applies;
 - b. Bidder's ability to provide the necessary management structure, skilled personnel, experience and equipment to perform competently the work under the Contract; and
 - c. Bidder's performance on other contracts.
5. When Canada intends to reject a bid pursuant to a provision of paragraphs 1), 2), 3) or 4) of GI11, other than subparagraph 2)(a) of GI11, the Contracting Authority will inform the Bidder and provide the Bidder ten (10) days within which to make representations, before making a final decision on the bid rejection.
6. Canada may waive informalities and minor irregularities in bids received if Canada determines that the variation of the bid from the exact requirements set out in the Bid Documents can be corrected or waived without being prejudicial to other Bidders.

GI12 Bid Costs

1. No payment will be made for costs incurred in the preparation and submission of a bid in response to the bid solicitation. Costs associated with preparing and submitting a bid, as well as any costs incurred by the Bidder associated with the evaluation of the bid, are the sole responsibility of the Bidder.

GI13 Procurement Business Number

1. Bidders are required to have a Procurement Business Number (PBN) before contract award. Bidders may register for a PBN in the Supplier Registration Information system on the [Contracts Canada](#) Web site. For non-Internet registration, Bidders may contact the nearest [Supplier Registration Agent](#).

GI14 Compliance with Applicable Laws

1. By submission of a bid, the Bidder certifies that the Bidder has the legal capacity to enter into a contract and is in possession of all valid licences, permits, registrations, certificates, declarations, filings, or other authorizations necessary to comply with all federal, provincial and municipal laws and

regulations applicable to the submission of the bid and entry into any ensuing contract for the performance of the work.

2. For the purpose of validating the certification in paragraph 1) of G14, a Bidder shall, if requested, provide a copy of every valid licence, permit, registration, certificate, declaration, filing or other authorization listed in the request, and shall provide such documentation within the time limit(s) set out in the request.
3. Failure to comply with the requirements of paragraph 2) of G14 shall result in disqualification of the bid.

G15 Approval of Alternative Materials

1. When materials are specified by trade names or trademarks, or by manufacturers' or suppliers' names, the bid shall be based on use of the named materials. During the solicitation period, alternative materials may be considered provided full technical data is received in writing by the Contracting Officer at least ten (10) calendar days prior to the solicitation closing date. If the alternative materials are approved for the purposes of the bid, an addendum to the bid documents shall be issued.

G16 Performance Evaluation

1. Bidders shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by Canada. The evaluation shall be based on the quality of workmanship; timeliness of completion of the work; project management, contract management and management of health and safety. Should the Contractor's performance be considered unsatisfactory, the Contractor's bidding privileges on future work may be suspended indefinitely.
2. The form [PWGSC-TPSGC 2913](#), SELECT - Contractor Performance Evaluation Report Form, is used to record the performance.

G17 Conflict of Interest - Unfair Advantage

1. In order to protect the integrity of the procurement process, bidders are advised that Canada may reject a bid in the following circumstances:
 - a. if the Bidder, any of its subcontractors, any of their respective employees or former employees was involved in any manner in the preparation of the bid solicitation or in any situation of conflict of interest or appearance of conflict of interest;
 - b. if the Bidder, any of its subcontractors, any of their respective employees or former employees had access to information related to the bid solicitation that was not available to other bidders and that would, in Canada's opinion, give or appear to give the Bidder an unfair advantage.
2. The experience acquired by a bidder who is providing or has provided the goods and services described in the bid solicitation (or similar goods or services) will not, in itself, be considered by Canada as conferring an unfair advantage or creating a conflict of interest. This bidder remains however subject to the criteria established above.
3. Where Canada intends to reject a bid under this section, the Contracting Authority will inform the Bidder and provide the Bidder an opportunity to make representations before making a final decision. Bidders who are in doubt about a particular situation should contact the Contracting Authority before bid closing. By submitting a bid, the Bidder represents that it does not consider itself to be in conflict

of interest nor to have an unfair advantage. The Bidder acknowledges that it is within Canada's sole discretion to determine whether a conflict of interest, unfair advantage or an appearance of conflict of interest or unfair advantage exists.

SUPPLEMENTARY CONDITIONS (SC)

SC01 LIMITATION OF LIABILITY

GC1.6 of R2810D is deleted and replaced with the following:

GC1.6 Indemnification by the Contractor

1. The Contractor shall indemnify and save Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings whether in respect to losses suffered by Canada or in respect of claims by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor in performing the Work, provided such claims are caused by the negligent or deliberate acts or omissions of the Contractor, or those for whom it is responsible at law.
2. The Contractor's obligation to indemnify Canada for losses related to first party liability shall be limited to:
 - a. In respect to each loss for which insurance is to be provided pursuant to the insurance requirements of the Contract, the Commercial General Liability insurance limit for one occurrence as referred to in the in the insurance requirements of the Contract .
 - b. In respect to losses for which insurance is not required to be provided in accordance with the insurance requirements of the Contract, the greater of the Contract Amount or \$5,000,000, but in no event shall the sum be greater than \$20,000,000.

The limitation of this obligation shall be exclusive of interest and all legal costs and shall not apply to any infringement of intellectual property rights or any breach of warranty obligations.
3. The Contractor's obligation to indemnify Canada for losses related to third party liability shall have no limitation and shall include the complete costs of defending any legal action by a third party. If requested by Canada, the Contractor shall defend Canada against any third party claims.
4. The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against Canada charging or claiming that the Work or any part thereof provided or furnished by the Contractor to Canada infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
5. Notice in writing of a claim shall be given within a reasonable time after the facts, upon which such claim is based, became known.

SC02 INSURANCE TERMS

IT2.2 of R2910D is deleted and replaced with the following:

1. The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada as an additional Insured, with respect to liability arising out of the operations of the contractor with regard to the work.

IT3.3 of R2910D is deleted and replaced with the following:

1. The policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada.

CONTRACT DOCUMENTS (CD)

- 1) The following are the contract documents:

- a) Contract Page(s) when signed by Canada;
- b) Duly completed Bid and Acceptance Form and any Appendices attached thereto;
- c) Drawings and Specifications;
- d) General Conditions and clauses
 - GC1 General Provisions R2810D (2013-04-25);
 - GC2 Administration of the Contract R2820D (2012-07-16);
 - GC3 Execution and Control of the Work R2830D (2010-01-11);
 - GC4 Protective Measures R2840D (2008-05-12);
 - GC5 Terms of Payment R2850D (2010-01-11);
 - GC6 Delays and Changes in the Work R2865D (2013-04-25);
 - GC7 Default, Suspension or Termination of Contract R2870D (2008-05-12);
 - GC8 Dispute Resolution R2880D (2012-07-16);
 - GC9 Contract Security R2890D (2012-07-16);
 - GC10 Insurance R2900D (2008-05-12);Insurance Terms R2910D (2008-12-12);
Supplementary Conditions
 - Fair Wages and Hours of Labour - Labour Conditions R2940D (2012-07-16);
 - Allowable Costs for Contract Changes under GC6.4.1 R2950D (2007-05-25);
 - Schedules of Wage Rates for Federal Construction Contracts;
- e) Any amendment issued or any allowable bid revision received before the date and time set or solicitation closing;
- f) Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
- g) Any amendment or variation of the contract documents that is made in accordance with the General Conditions.

- 2) The documents identified by title, number and date above are incorporated by reference and are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>

- 3) Schedules of Wage Rates for Federal Construction Contracts are included by reference and may be accessed from the Web site: http://www.rhdcc-hrsdc.gc.ca/eng/labour/employment_standards/contracts/schedule/index.shtml

- 4) The language of the contract documents is the language of the Bid and Acceptance Form submitted.

BID AND ACCEPTANCE FORM (BA)

BA01 IDENTIFICATION

RE-ROOFING
Building 72, CEF Ottawa
Project #1314143001P0001
Solicitation # 13-1287

BA02 BUSINESS NAME AND ADDRESS OF BIDDER

Name: _____

Address: _____

Telephone: _____
Fax: _____
Email: _____
PBN: _____

BA03 THE OFFER

The Bidder offers to Her Majesty the Queen in right of Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of \$ _____ excluding Applicable Taxes.
(amount in numbers)

BA04 BID VALIDITY PERIOD

The bid shall not be withdrawn for a period of 30 days following the date of solicitation closing.

BA05 ACCEPTANCE AND CONTRACT

Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents identified in Contract Documents (CD).

BA06 CONSTRUCTION TIME

The Contractor shall perform and complete the Work within **four (4) weeks** from the date of notification of acceptance of the offer.

BA07 BID SECURITY

The Bidder is enclosing bid security with its bid in accordance with GI08 - Bid Security Requirements of the General Instructions to Bidders (GI).

BA08 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date



Agriculture and
Agri-Food Canada

Agriculture et
Agroalimentaire Canada

DRAWINGS AND SPECIFICATIONS

#13-1287

FOR

**ROOF REPLACEMENT
Building 72
Project 1314143001P0001**

**CENTRAL EXPERIMENTAL FARM (CEF)
Agriculture and Agri-Food Canada (AAFC)
960 Carling Avenue
Ottawa, Ontario K1A 0C6**

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PART 1 - GENERAL

1.1 TIME OF COMPLETION

- .1 Commence work in accordance with notification of acceptance of your offer. Complete the work within the period stated in the tender form.

1.2 MINIMUM STANDARDS

- .1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the National Building Code of Canada 2005 (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.

1.3 SHOP DRAWINGS

- .1 Submit for the Project Manager's review, two copies of each shop drawing.
- .2 The review is for the sole purpose of ascertaining conformance with the general design concept, and does not mean approval of the design details inherent in the shop drawings, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.
- .3 Do not commence manufacture or order materials before shop drawings are reviewed by Project Officer.
- .4 The Contractor to review and sign the shop drawings prior to sending them to the Project Officer for review.

1.4 SAMPLES

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.
- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

1.5 PRODUCT DATA

- .1 Product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit two copies of product data.
- .3 Delete information not applicable to project.
- .4 Cross-reference product data information to applicable portions of Contract Documents.

1.6 TAXES

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

1.7 FEES, PERMITS AND CERTIFICATES

- .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.
- .2 A Municipal Building Permit is not required.

1.8 FIRE SAFETY REQUIREMENTS

- .1 Comply with the National Building Code of Canada 2005 (NBC) for fire safety in construction and the National Fire Code of Canada 2005 (NFC) for fire prevention, fire fighting and life safety in building in use.
- .2 Comply with Human Resources Development Canada (HRDC), Fire Commissioner of Canada (FCC) standards:
 - .1 No. 301: Standard for Construction / Operations
 - .2 No. 302: Standard for Welding and Cutting
 - .3 No. 374: Fire Protection Standard for General Storage (Indoor and Outdoor)
 - .4 available from Fire Protection Engineering Services, Labour Program, HRDC or following internet site:
<http://www.hrsdc.gc.ca/asp/gateway.asp?hr=en/lp/lo/fp/standards/commissioner.shtml&hs=fzp>
 - .5 Retain all fire safety documents and standards on site.
- .3 Welding and cutting:
 - .1 At least 48 hours prior to commencing cutting, welding or soldering procedure, provide to the Project Officer:
 - .1 Notice "of intent, "indicating devices affected, time and duration of isolation or bypass.
 - .2 Completed welding permit as defined in FC 302.
 - .3 Return welding permit to Project Officer immediately upon completion of procedures for which permit was issued.
 - .2 A fire watcher as described in FC 302 shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10m may be ignited by conduction or radiation.
- .4 Where work requires interruption of fire alarms or fire suppression, extinguishing or protection systems:
 - .1 Provide watchman ,service as described in FC 301; In general, watchman service is defined as an individual conversant with Fire Emergency Procedures, performing fire picket duty within an unprotected and unoccupied (no workers) area once per hour.
 - .2 Retain services of manufacturer for fire protection systems on daily basis or as approved by FCC, to isolate and protect all devices relating to:
 - .1 modification of fire alarms, fire suppression, extinguishing or protection systems; and/or

- .2 cutting, welding, soldering or other construction activities which might activate fire protection systems.
- .5 Immediately upon completion of work, restore fire protection systems to normal operation and verify that all devices are fully operational.
- .6 Inform fire alarm system monitoring agency and local Fire Department immediately prior to isolation and immediately upon restoration of normal operation.

1.9 HAZARDOUS MATERIALS

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources Development Canada, Labour Program.
- .2 For work in occupied buildings give the Project Officer 48 hours notice for work involving designated substances (Ontario Bill 208), hazardous substances (Canada Labour Code Part II Section 10), and before painting, caulking, installing carpet or using adhesives.

1.10 TEMPORARY UTILITIES

- .1 Existing services required for the work, excluding power required for space heating, may be used by the Contractor without charge. Ensure capacity is adequate prior to imposing additional loads. Connect and disconnect at own expense and responsibility.
- .2 Connect to existing power supply in accordance with Canadian Electrical Code and provide meters and switching.
- .3 Notify the Project Officer and utility companies of intended interruption of services, obtain requisite permission.
- .4 Give the Project Officer 48 hours notice related to each necessary interruption of any mechanical or electrical service throughout the course of the work. Keep duration of these interruptions to a minimum. Carry out all interruptions after normal working hours of the occupants, preferably on weekends.

1.11 REMOVED MATERIALS

- .1 Unless otherwise specified, materials for removal become the Contractor's property and shall be taken from site.

1.12 PROTECTION

- .1 Protect finished work against damage until take-over.
- .2 Protect adjacent work against the spread of dust and dirt beyond the work areas.
- .3 Protect operatives and other users of site from all hazards.

1.13 USE OF SITE AND FACILITIES

- .1 Execute work with the least possible interference or disturbance to the normal use of premises. Make arrangements with the Project Officer to facilitate work as stated.

- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Where elevators, dumbwaiters, conveyors or escalators exist Contractor may use these at the Project Officer's discretion. Protect from damage, safety hazards and overloading of existing equipment.
- .5 Sanitary facilities will be assigned for Contractor's personnel. Others shall not be used. Keep facilities clean.
- .6 Closures: Protect work temporarily until permanent enclosures completed.

1.14 SITE STORAGE

- .1 The Project Manager will assign storage space which shall be equipped and maintained by the Contractor.
- .2 Do not unreasonably encumber site with materials or equipment.
- .3 Move stored products or equipment which interfere with operations of the Project Officer or other contractors.
- .4 Obtain and pay for use of additional storage or work areas needed for operations.

1.15 CUT, PATCH AND MAKE GOOD

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove all items so shown or specified.
- .3 Patch and make good surfaces cut, damaged or disturbed, to the Project Officer's approval. Match existing material, colour, finish and texture.
- .4 Install fire stops and smoke seals in accordance with ULC-SI15-1995 around pipe, ductwork, cables, and other objects penetrating fire separations to provide fire resistance not less than the fire resistance rating of surrounding floor, ceiling, and wall assembly.

1.16 SLEEVES, HANGERS AND INSERTS

- .1 Co-ordinate setting and packing of sleeves and supply and installation of hangers and inserts. Obtain the Project Officer's approval before cutting into structure.

1.17 SIGNS

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, etc. in both official languages or by the use of commonly-understood graphic symbols to the Project Officer's approval.
- .2 No advertising will be permitted on this project.

1.18 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary access to and egress from work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.19 SCAFFOLDS AND WORK PLATFORMS

- .1 Design, install, and inspect scaffolds and work platforms required for work in accordance with relevant municipal, provincial and other regulations.

1.20 PUBLIC WAY PROTECTIONS

- .1 Design, erect and maintain hoarding to provide protection complete with signs as required by authority having jurisdiction.

1.21 OPERATIONS AND MAINTENANCE MANUALS

- .1 Two (2) weeks prior to any scheduled training, submit to the Project Manager two (2) copies of approved Operations Data and Maintenance Manual in both official languages, compiled as follows:
 - .1 Bind data in vinyl hard cover 3 "D" ring type loose leaf binders for 212 x 275.rnm size paper. Binders must not exceed 75rnm thick or be more than 2/3 full.
 - .2 Enclose title sheet labelled "Operation Data and Maintenance Manual," project name, date and list of contents. Project name must appear on binder face and spine.
 - .3 Organize contents into applicable sections of work to parallel project specifications breakdown. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .2 Include following information plus data specified.
 - .1 Maintenance instruction for finished surface and materials.
 - .2 Copy of paint schedules.
 - .3 Description: Operation of the equipment and systems defining start-up, shut-down and emergency procedures, and any fixed or adjustable set points that affect the efficiency of the operation. Include nameplate information such as make, size, capacity and serial number.
 - .4 Maintenance: Use clear drawings, diagrams or manufacturers' literature which specifically apply and detail the following:
 - .1 lubrication products and schedules.
 - .2 trouble shooting procedures.
 - .3 adjustment techniques.
 - .4 operational checks.

- .5 Suppliers names, addresses and telephone numbers and components supplied by them must be included in this section. Components must be identified by a description and manufacturers part number.
- .5 Guarantees showing:
 - .1 Name and address of projects.
 - .2 Guarantee commencement date (date of Interim Certificate of Completion).
 - .3 Duration of guarantee.
 - .4 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
 - .5 Signature and seal of Guarantor.
 - .6 Additional material used in project listed under various Sections showing name of manufacturer and source of supply.
- .3 Spare parts: List all recommended spares to be maintained on site to ensure optimum efficiency. List all special tools appropriate to unique application. All parts/tools detailed must be identified as to manufacturer, manufacturer part number and supplier (including address).
- .4 Include one complete set of final shop drawings (bound separately) indicating corrections and changes made during fabrication and installation.

1.22 RECORDS

- .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to the Project Officer's inspection for issuance of final certificate of completion, supply to the Project Officer one (1) set of white prints with all deviations neatly inked in. The Project Officer will provide two sets of clean white prints for this purpose.

1.23 GUARANTEES AND WARRANTIES

- .1 Before completion of work, collect all manufacturer's guarantees and warranties and deposit with Engineer.

1.24 CLEAN UP

- .1 Clean up work area as work progresses. At the end of each work period, and more often if ordered by the Project Officer, remove debris from site, neatly stack material for use, and clean up generally.
- .2 Upon completion remove scaffolding, temporary protection and surplus materials. Make good defects noted at this stage.
- .3 Wash and polish glass, stainless steel, baked or porcelain enamel, plastic laminate and other plastic surfaces, floors, hardware. Clean manufactured articles in accordance with manufacturer's directions.
- .4 Clean areas under contract to a condition at least equal to that previously existing and to approval of Project Officer.

1.25 CONTRACT DOCUMENTS

- .1 Drawings and specifications are complementary, items shown or mentioned in one and not in the other are deemed to be included in the contract work.

1.26 BUILDING SMOKING ENVIRONMENT

- .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.

1.27 DUST CONTROL

- .1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.
- .2 Maintain and relocate protection until such work is complete.
- .3 Protect all furnishings within work area with 0.102 mm thick polyethylene film during construction. Remove film during non-construction hours and leave premises in clean, unencumbered and safe manner for normal daytime function.

1.28 TESTING LABORATORY

- .1 The Project Manager will appoint and pay for costs of inspection and testing services, unless indicated otherwise.
- .2 Provide safe working areas and assist with testing procedures, including provisions for materials or services and co-ordination, as required by testing agency and as authorized by Project Officer.
- .3 Where tests indicate non-compliance with specifications, contractor to pay for initial test and all subsequent testing of work to verify acceptability of corrected work.

1.29 SCHEDULING

- .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by the Project Manager, take necessary measures to complete work within scheduled time. Do not change schedule without notifying the Project Manager.
- .2 Carry -out work between 7:00 and 18:00 Monday to Friday, excluding statutory holidays. Work overtime hours as required to meet the scheduled completion date.
- .3 Give the Project Officer 48 hours notice for work to be carried out on between 18:00 and 7:00 hours and for work to be carried out on weekends or holidays.
- .4 Carry out noise generating work during "off hours" Monday to Friday from 16:00 to 09:00 hours and on Saturdays, Sundays, and statutory holidays.

1.30 COST BREAKDOWN

- .1 Ten days after Contract award and before submitting first progress claim, submit breakdown of Contract Amount in detail for the Project Officer's approval and aggregating the Contract Amount. After approval by the Project Officer, the cost breakdown will be used as the basis of progress payments.

PART 2 – PRODUCTS

- 2.1 Not used

PART 3 – EXECUTION

- 3.1 Not used

END OF SECTION 01 10 20

Part 1 GENERAL

1.1 ADMINISTRATIVE

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

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow ten (10) days for the Consultant's review of each submission.
- .4 Adjustments made on shop drawings by the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Consultant, prior to proceeding with Work.
- .5 Make changes in shop drawings the Consultant may require, consistent with Contract Documents. When resubmitting, notify the Consultant in writing of revisions other than those requested.
- .6 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date,
 - .2 Project title and number,
 - .3 Contractor's name and address,
 - .4 Identification and quantity of each shop drawing, product data and sample,

- .5 Other pertinent data.
- .7 Submissions include:
 - .1 Date and revision dates,
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor,
 - .2 Supplier,
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication,
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances,
 - .3 Setting or erection details,
 - .4 Capacities,
 - .5 Performance characteristics,
 - .6 Standards,
 - .7 Operating weight,
 - .8 Wiring diagrams,
 - .9 Single line and schematic diagrams,
 - .10 Relationship to adjacent work.
- .8 After the Consultant's review and written acceptance, distribute copies.
- .9 Submit six (6) prints or pdf files of shop drawings for each requirement requested in specification Sections and as the Consultant may reasonably request.
- .10 Submit six (6) copies or pdf files of product data sheets or brochures for requirements requested in specification Sections and as requested by the Consultant where shop drawings will not be prepared due to standardized manufacture of product.
- .11 Submit six (6) copies or pdf files of test reports for requirements requested in specification Sections and as requested by the Consultant.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within three (3) years of date of contract award for project.
- .12 Submit six (6) copies or pdf files of certificates for requirements requested in specification Sections and as requested by the Consultant.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
- .13 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by the Consultant.

- .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .14 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Consultant.
- .15 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .16 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Consultant.
- .17 Delete information not applicable to project.
- .18 Supplement standard information to provide details applicable to project.
- .19 If upon review by the Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .20 The review of shop drawings by is for sole purpose of ascertaining conformance with general concept.
 - .1 This review shall not mean that the Owner or Consultant approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 SAMPLES

- .1 Submit for review samples in duplicate as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to the Consultant's business address.
- .3 Notify the Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by the Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the CEF Representative prior to proceeding with Work.
- .6 Make changes in samples which the Consultant may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of digital photography in jpg format, standard resolution with progress statement, or as directed by the Consultant.
- .2 Project identification: name and number of project and date of exposure indicated.

- .3 Number of viewpoints: 2 locations.
 - .1 Viewpoints and their location as determined by the Consultant.
- .4 Frequency of photographic documentation: weekly as directed by the Consultant.

1.5 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after award of Contract, submit Workers' Compensation Board status.
- .2 Submit transcription of insurance immediately after award of Contract.

Part 2 PRODUCTS

2.1 Not used

Part 3 EXECUTION

3.1 Not used

END OF SECTION 01 33 00

Part 1 General

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 Province of Ontario
 - .1 Occupational Health and Safety Act, R.S.O. [1990 Updated 2005].

1.2 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan: Within seven (7) days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of task specific safety hazard assessment.
- .3 Submit two (2) copies of Contractor's authorized representative's work site health and safety inspection reports to the Consultant and/or authority having jurisdiction.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets.
- .7 The Consultant will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to the Consultant within 7 days after receipt of comments from the Consultant.
- .8 The Consultant's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to the Consultant .
- .10 Emergency Response Plan: Submit emergency response procedures in the event of a site emergency

1.3 FILING OF NOTICE

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.4 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.5 MEETINGS

- .1 Schedule and administer Health and Safety meeting with the Consultant prior to commencement of Work.

1.6 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.7 COMPLIANCE REQUIREMENTS

- .1 Comply with **Workers Compensation Act.**
- .2 Comply with **Ontario Health and Safety Act, R.S.O.**
- .3 Comply with **Occupational Health and Safety Regulations, 1996.**
- .4 Comply with **Canada Labour Code, Canada Occupational Safety and Health Regulations.**

1.8 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise the Consultant verbally and in writing.

1.9 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:
 - .1 Have site-related working experience specific to activities associated with project outlined in Section 01 11 00.
 - .2 Have working knowledge of occupational safety and health regulations.
 - .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.10 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with the Consultant.

1.11 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by the Consultant.
- .2 Provide the Consultant with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 The Consultant may stop Work if non-compliance of health and safety regulations is not corrected.

1.12 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION 01 35 30

Part 1 General

1.1 REFERENCES

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-[1994], Stipulated Price Contract.
 - .2 CAN/CSA-S269.2-[M1987(R2003)], Access Scaffolding for Construction Purposes.
 - .3 CAN/CSA-Z321-[96(R2001)], Signs and Symbols for the Occupational Environment.

1.2 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, avenues of ingress/egress to fenced area and details of fence installation.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.3 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms and temporary stairs as required.

1.4 HOISTING

Provide, operate and maintain hoists, cranes required for moving of workers, materials and equipment.

- .1 Hoists, cranes to be operated by qualified operator.

1.5 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.6 CONSTRUCTION PARKING

- .1 Parking will be permitted on site provided it does not disrupt performance of Work or building operations.
- .2 Provide and maintain adequate access to project site.

1.7 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.8 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.9 CONSTRUCTION SIGNAGE

- .1 No signs or advertisements, other than warning signs, are permitted on site.
- .2 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.
- .3 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by Consultant.

1.10 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Protect travelling public from damage to person and property.
- .3 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .4 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

1.11 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Store materials resulting from demolition activities that are salvageable.
- .3 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION 01 52 00

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

- .1 Contractor's Inspection: Contractor - conducts inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify the Consultant in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request the Consultant's inspection.
- .2 The Consultant's Inspection:
 - .1 The Consultant and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
- .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Work: complete and ready for final inspection.
- .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by the Consultant and Contractor.
 - .2 When Work incomplete according to Owner and the Consultant, complete outstanding items and request re-inspection.
- .5 Declaration of Substantial Performance: when the Consultant considers deficiencies and defects corrected and requirements of Contract substantially performed, make application for Certificate of Substantial Performance.
- .6 Commencement of Lien and Warranty Periods: date of Owner's acceptance of submitted declaration of Substantial Performance to be date for commencement for warranty period and commencement of lien period unless required otherwise by lien statute of Place of Work.
- .7 Final Payment:
 - .1 When the Consultant considers final deficiencies and defects corrected and requirements of Contract met, make application for final payment.
 - .2 Refer to BTC GENERAL CONDITIONS: when Work deemed incomplete by the Consultant complete outstanding items and request re-inspection.
- .8 Payment of Holdback: after issuance of Certificate of Substantial Performance of Work, submit application for payment of holdback amount in accordance with contractual agreement.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION 01 77 00

1 General

1.1 Summary of Work.

- .1 Remove and discard from site existing roof system (metal flashings, insulation and membranes) down to the existing wood deck.
- .2 Inspect wood deck for any signs of significant deterioration. Repair deck as directed by Consultant.
- .3 Install new plywood and blocking to up stands, parapets, and wall junction substrates as per detail and approved shop drawings. Ensure minimum membrane flashing height of 200 mm.
- .4 Install new self-adhesive vapour barrier continuity strips as vapour barrier wrap / flame stop membrane at all up stands, parapets, and wall junctions. Ensure 75 mm extension above insulation overlay board finish height.
- .5 Prime and install new self adhered modified bitumen vapour barrier.
- .6 Replace existing drains with new retrofit drains, and install two new drains with rain water leaders and accessories as located on the Roof Plan. Review drainage before proceeding with insulation installation.
- .7 Loose lay Polyisocyanurate insulation and tapered 1% Polyiso Insulation.
- .8 Mechanically fasten bituminous insulation overlay.
- .9 Install torch applied base sheet.
- .10 Install self-adhesive base sheet flashings
- .11 Install torch applied cap sheet and cap sheet flashings
- .12 Clean, prime, and torch apply new capsheet overlay on Roof #3

1.2 REFERENCE STANDARD(S)

- .1 Roofing and sheet metal work will be performed in conformance with the roofing manufacturer's written recommendations as well as the requirements of ULC laboratories Class C, and the CRCA.
- .2 Submit a document issued by the CSA certifying that the roofing system offered meets the requirements of CAN/ULC-S107-03 "Standard Methods of Fire Tests of Roof Coverings Class C."
- .3 Prefabricated membrane, complies with CAN/CGSB 37-GP-56M (9th draft)-1985, Membrane Modified, Bituminous, Prefabricated, and Reinforced for Roofing.
- .4 CAN/ULC-S702-97 Thermal Insulation, Mineral Fibre, Boards for Buildings.
- .5 CAN/ULC-S704-2001 Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Fixed.

1.3 COMPATIBILITY

- .1 All waterproofing materials will be single sourced from the same manufacturer.

1.4 TECHNICAL DATA

- .1 Submit two (2) copies of the most current technical data sheets. These documents must describe the materials' physical properties.

1.5 QUALITY ASSURANCE AND ENVIRONMENTAL MANAGEMENT

- .1 The manufacturer of elastomeric bitumen products will provide proof of ISO 9001 and ISO 14001 Certifications.

1.6 CONTRACTOR QUALIFICATION

- .1 Roofing contractors and sub-contractors must, when tendering or performing work, possess a roofing contractor operating license.
- .2 Roofing contractors must also be registered with manufacturer's certification program and provide the Consultant with a manufacturer certificate to this effect before beginning any roofing work.
- .3 Only qualified, certified installers employed by a company with the appropriate equipment may execute the roofing work.
- .4 Roofing Contractor must be a member in good standing with the Canadian Roofing Contractors Association (CRCA).
- .5 Roofing Contractor must demonstrate a corporate history of successful completion of similar projects during the last 5 years.

1.7 MANUFACTURER'S REPRESENTATIVE

- .1 The roofing product manufacturer must delegate a representative to visit the work site at the start of roofing installation, upon completion, and at all other times as required to enable them to warrant the completed work. It is incumbent upon the Roof Contractor to ensure this takes place.
- .2 The contractor must at all times enable and facilitate access to the work site by said representative.

1.8 INSPECTION

- .1 Roof installation inspections will be performed by the Consultant.
- .2 All inspection fees will be paid by the owner, unless deficient workmanship results in additional and unforeseen inspection requirements. Additional inspections due to poor workmanship or planning may be invoiced to the contractor

1.9 PRE-INSTALLATION MEETING

- .1 Attend an on-site pre-roof meeting [prior to commencement] with the roofing contractor's representative, roofing foreman, and the Consultant present. The purpose of this meeting is to review site conditions, scope of work, installation procedures and others particular to the project.

1.10 STORAGE AND DELIVERY

- .1 All materials will be delivered and stored in conformance with the requirements described in the MANUFACTURER'S MANUAL; they must remain in their original packaging, displaying the manufacturer's name, product name, weight, and reference standards, as well as all other indications or references considered standard.
- .2 At all times, materials will be adequately protected and stored in a dry, elevated and properly ventilated area, away from any welding flame or spark and sheltered from the elements or any harmful substance. Only materials destined for same-day use can be removed from this storage area. In cold weather, these materials should be stored in a heated area at a minimum temperature of +10⁰C and removed prior to application. If rolls cannot be stored in a heated environment, they may be pre-conditioned before installation. For precise description, please consult MANUFACTURER'S "Roofers' Guide" on membrane application procedures.
- .3 Store adhesives and emulsion-based waterproofing mastics at a minimum +5⁰C. Store adhesives and solvent-based mastics at sufficient temperatures to ensure ease of application.

- .4 Materials delivered in rolls will be carefully stored upright; metal flashings will be secured and stored to avoid creasing, buckling, scratches or any other possible damage.
- .5 Avoid material overloads [PPL] which may affect the structural integrity of specific roof areas.

1.11 FIRE PROTECTION

- .1 Prior to the start of work, conduct a site inspection to establish safe working practices and make sure that all procedures and proposed changes are approved to minimize the risk of fires.
- .2 Respect safety measures described in the MANUFACTURER's Specifications Manual as well as CRCA recommendations.
- .3 At the end of each workday, use a heat detector gun to spot any smouldering or concealed fire. Job planning must be organized to ensure workers are on location at least one hour after torch application completion to perform the "fire watch inspection".
- .4 Never apply the torch directly to any combustibles.
- .5 Throughout roofing installation, maintain a clean site and have one approved ABC fire extinguisher within 6 metres of each operable roof torch. Respect all safety measures described in technical data sheets. Torches must never be placed near combustible or flammable products. Torches should never be used where the flame is not visible or cannot be easily controlled. Heating of propane bottles is strictly prohibited.

1.12 WARRANTIES

- .1 The membrane manufacturer will issue a written document in the owner's name, valid for a 10 year period, saying that it will repair any leaks in the roofing membrane to restore the roofing system to a dry and watertight condition, to the extent that defects in roofing material or installation methods caused water infiltration. The warranty must cover for the entire cost of the repair(s), excluding removal of overburden, during the entire warranty period. The warranty must be transferable, at no extra cost, to subsequent building owners.
- .2 The contractor will provide a written and signed document to the owner certifying that the work executed will remain in place and free of waterproofing defect for a period of 2 years from the date of acceptance.
- .3 Specified Warranty: PLATINUM Warranty by SOPREMA or approved equal.

2 Products

2.1 The system has been designed using Soprema manufactured products. Product equivalents from other manufacturers will be considered upon submittal and review of technical data sheets, wind uplift and fire resistance test results, and warranty specimen demonstrating product equivalence.

2.2 SELF-ADHERED VAPOUR BARRIER:

- .1 Description: Self-adhesive membrane composed of SBS modified bitumen, with a surface screen made of high-density polyethylene laminated between two layer of polyethylene films. The width of the membranes is 1.14 m (45 in) to allow the membrane to fit on the top of most structural steel deck profiles. The self-adhesive underface is protected with a silicone plastic release film. Resistance to water vapour transmission: 0.92 ng/Pa.s.m² (0.016 Perm).
- .2 Specified product(s): SOPRAVAP'R by SOPREMA or approved equal.

2.3 VAPOUR RETARDER CONTINUITY STRIP

- .1 Specified products: SOPRAGUARD tape by SOPREMA or approved equal.

2.4 INSULATION

- .1 Description: Closed-cell, Polyisocyanurate foam core integrally laminated to heavy, black (non-asphaltic), fibre-reinforced organic felt facers.
- .2 LTTR (long-term thermal resistance) values determined in accordance with CAN/ULC-S770 and ASTM C 1289.
- .3 Recycled Content: Between 16% and 43% by weight, depending on thickness (57% post-consumer, 43% pre-consumer).
- .4 1.2 m. x 1.2 m (4'x 4'). Thickness 84 mm (3.3"), R20.
- .5 Specified product: SOPRA-ISO by SOPREMA or approved equal.
- .6 Pre-fabricated drain sumps, 2.4m x 2.4m (8' x 8'), reducing thickness of insulation by a minimum of 25 mm (1") at all drains

2.5 TAPERED INSULATION BOARD

- .1 Description: Tapered insulation panel made of polyisocyanurate designed to create a 1 percent (1%) slope to the roof system.

2.6 INSULATION OVERLAY

- .1 Description: Multi-ply, semi-rigid asphaltic roofing substrate board composed of a mineral fortified asphaltic core formed between two asphaltic saturated fibreglass liners. Length 1.2 m. x width 1.5 m x thickness 3.2 mm.
- .2 Specified product: SOPRABOARD by SOPREMA or an approved equal

2.7 ROOF MEMBRANES

.1 Base Sheet Membrane for Field Surface

- .1 Description: Roofing membrane composed of SBS modified bitumen and a composite reinforcement. The surface is covered with a thermofusible plastic film, the underside is sanded. The surface must be marked with three (3) chalk lines to ensure proper roll alignment.
- .2 In conformance with: CGSB 37.56-M (9th Draft).
- .3 Properties:

	MD	XD
.1 Strain energy (kJ/m)	7.8	7.2
Breaking strength (kN/m)	15	13.5
.2 Ultimate elongation (%)	60	65
.3 Tear resistance (N)	125	
.4 Static puncture resistance (N)	560	
.5 Dimensional stability (%)	0.2	0
.6 Plastic flow (°C)	≥ 110	
.7 Cold bending at -30 °C	No cracking	
.8 Lap joint strength (kN/m)	Pass > 4 kN/m	
- .4 Specified product: SOPRAPLY BASE 520 by SOPREMA

.2 Base Sheet Membrane for Flashings and Parapets

- .1 Description: Membrane composed of SBS modified bitumen and composite reinforcement. The surface is covered with a thermofusible plastic film and the underface is covered with a release protection film. The surface shall be marked with three (3) chalk lines to ensure proper roll alignment.

- .2 In conformance with: CGSB 37.56-M (9th Draft).
- .3 Specified product: SOPRAFLASH FLAM STICK by SOPREMA
 - .3 Roofing Cap Sheet Membrane for Field And Parapet Surfaces
- .1 Description: Roofing membrane composed of SBS modified bitumen with a composite reinforcement and elastomeric bitumen [with flame-retarding agent]. The surface is protected by coloured granules. The underface is covered with a thermofusible plastic film.
- .2 In conformance with: CGSB 37.56-M (9th Draft).
- .3 Properties:

	MD	XD
.1 Strain energy (kJ/m ²)	7.8	7.2
.2 Breaking strength (kN/m)	15	13.5
.3 Ultimate elongation (%)	60	65
.4 Tear resistance (N)	125	
.5 Static puncture resistance (N)	560	
.6 Dimensional stability (%)	0.2	0
.7 Plastic flow (°C)	≥ 110	
.8 Cold bending at -30 °C	No cracking	
.9 Lap joint strength (kN/m)	Pass > 4 kN/m	
- .4 Specified Product: SOPRAPLY TRAFFIC CAP 560 by SOPREMA

2.8 ACCESSORY MEMBRANES

- .1 Reinforcement membrane:
 - .1 Description: Roofing membrane with composite heavy duty reinforced and SBS modified bitumen. Both sides are covered with a thermofusible plastic film. The top face must be marked with three (3) distinctive blue chalk lines to ensure proper roll alignment.
 - .2 Prefabricated membrane, complies with CAN/CGSB 37-GP-56M (9th draft)
 - .3 Specified product(s): SOPRAPLY TORCH BASE 520 from SOPREMA or an approved equal.

2.9 PRIMER

- .1 Primer for heat welded membranes:
 - .2 Description: A blend of elastomeric bitumen, volatile solvents and adhesive enhancing additives used to prime concrete or metal substrates to enhance the adhesion of torch-applied waterproofing membranes.
 - .3 Specified product: ELASTOCOL 500 by SOPREMA or an approved equal.
- .2 Primer for self-adhesive membranes
 - .1 Description: Polymeric emulsion finish designed to improve adherence of self-adhesive waterproofing membranes when solvent-based primer is not recommended.
 - .2 Specified product: ELASTOCOL STICK H²O by SOPREMA or approved equal.

2.10 ADHESIVES

- .1 Insulation adhesive:
 - .1 Description: A highly elastomeric, two components, one step, all purpose, foamable adhesive that contains no solvents and sets in minutes.
 - .2 Specified product: DUOTACK by SOPREMA or an approved equal.

2.11 PLUMBING STACKS

- .1 Plumbing stacks to be one piece, spun aluminum vents with cap to match.

2.12 RETROFIT ROOF DRAINS

- .1 Description Aluminum retrofit drain insert using U-Flow connectors, complete with cast aluminum domes and copper flange.
- .2 Outlet pipe and U-FLOW connector size to match existing drain line diameter.
- .3 Specified product: RD-4C-RR-FLAT by Thaler, Hercules Copper Retrodrain by OMG Roofing Products.

2.13 NEW ROOF DRAINS

- .1 RD4A as manufactured by Thaler Industries.

2.14 COMPLEMENTARY WATERPROOFING PRODUCTS

- .1 Waterproofing mastic:
 - .1 Description: Mastic made of synthetic rubbers, plasticized with bitumen and solvents. Aluminum pigments are added to SOPRAMASTIC ALU to provide greater resistance to U.-V.
 - .2 Specified product: SOPRAMASTIC ALU by SOPREMA or approved equal.
- .2 Sealing product
 - .1 Description: Composed of a bitumen/polyurethane waterproofing mono-component and polyester reinforcements. Designed to finish up stands and details.
 - .2 Specified product: ALSAN FLASHING by SOPREMA or approved equal.

2.15 Gas Line Supports.

- .1 Description: Pipe support manufactured of recycled rubber base.
- .2 Specified Product: C-PORT by CLEARLINE or approved equal.

3 EXECUTION

3.1 SURFACE EXAMINATION AND PREPARATION

- .1 Surface examination and preparation must be completed in conformance with 'recommendations in the MANUFACTURER Specifications Manual, particularly for fire safety precautions.
- .2 Before roofing work begins, the Consultant and Contractors representatives will inspect and approve deck conditions (including slopes and wood blocking) as well as up stands, parapets, construction joints, roof drains, plumbing vents, ventilation outlets and others. The start of roofing work will certify that roofing conditions are acceptable for work to commence.
- .3 Do not begin any work before surfaces are smooth, dry, well secured and free of debris. Use of calcium or salt is forbidden for ice or snow removal.
- .4 Make sure plumbing, carpentry, mechanical, electrical and all other project related items have been duly completed as required.
- .5 No materials to be installed during rain, snowfall and or inclement weather.

3.2 SET-UP

- .1 Advise consultant of set-up schedule with dates, times and expected durations for all activities.
- .2 Review with Consultant and Owner to agree upon staging area or areas required to complete the project in a safe and timely manner with as minimum inconvenience to the occupants as possible. This must take into account all

activities for the duration of the project such as, locations for tar kettles, disposal bins, propane storage, transports, toilets, cranes, and the various staging areas for hoisting and removals etc.

3.3 CLEANING

- .1 The entire work site must be routinely [minimum daily] organized and or cleared of rubbish, materials, tools and equipment which may hinder roof installation, performance, fire hazards and to eliminate dangerous conditions to the occupants and public.

3.4 EQUIPMENT FOR WORK EXECUTION

- .1 Maintain all equipment and tools used during the project in a respectable working order.

3.5 CURB AND PARAPET MODIFICATIONS.

- .1 Calculate height of finished roofing system at all up stands, parapets, roof openings and wall junctions. Submit shop drawings locating and identifying proposed modifications to parapet and curb heights.
- .2 Add new plywood and wood blocking as per approved shop drawings to ensure minimum membrane flashing height of 200mm.

3.6 REMOVALS

- .1 Remove all existing roofing membrane and metal flashings down to existing wood deck.
- .2 Prepare existing substrates to receive new roofing system.

3.7 INSTALLATION OF SELF-ADHESIVE VAPOUR BARRIER

- .1 Primer must be dry prior to the installation of the vapour barrier membrane.
- .2 Starting at the bottom of the slope, without adhering the membrane, unroll it onto the substrate for alignment. Do not immediately remove the silicone release film.
- .3 Align the roll parallel to the ribs of the steel deck. Make sure membrane overlaps are supported along their entire length.
- .4 Remove one end of the silicone release film and adhere this part of the membrane to the substrate. Remove the remaining release film at a 45° angle to avoid wrinkles in the membrane.
- .5 Overlap adjacent rolls of 75mm (3 in) and 100 mm (4 in). End laps must be 150 mm (6 in). Space end laps by at least 300 mm (12 in).

3.8 INSTALLATION OF THE BASE AND TAPERED INSULATION

- .1 Install boards in a staggered formation, butting all edges closely and score cut to eliminate all cupping and warping.
- .2 Score cut boards as required at all undulations in the substrate to allow for full contact and walk in place to ensure full adhesion. Particular attention required at all slopes in the concrete slab.
- .3 Cut insulation boards to fit snugly at all perimeters, roof opening etc. but not oversized to damage the vapour barrier during installation.
- .4 Install only as much insulation as can be covered and completed in a water tight fashion by days end.
- .5 All gaps in the insulation around roof penetrations etc are to be packed with fibreglass batt insulation.

3.9 INSTALLATION OF INSULATION OVERLAY

- .1 All vertical joints between boards and insulation will be staggered.
- .2 All the panels will be installed in a tight fitting, level manner with adherence as per the manufactures instructions.
- .3 Apply only as many boards as can be covered and made in a water tight condition by the days end.
- .4 Mechanically fasten support panels at a rate of 5 fasteners per board on the field surface.

3.10 INSTALLATION OF TORCH APPLIED BASE SHEET

- .1 Loose lay the base sheet membrane on the substrate, taking care to align the starting edge of the roll with the drain.
- .2 After alignment back roll the membrane and commence the torch application while obtaining a continuous bead of bitumen at the side laps as the membrane is unrolled and assuring the complete adherence throughout.
- .3 Each strip should overlap the preceding strip by 75 mm. along the side joint (use the blue line to facilitate alignment) and by 150 mm. at the ends. Stagger the end joints by at least 300 mm.
- .4 At end laps, angle-cut the corners that will be covered by the following roll.
- .5 Special care must be taken to avoid creating wrinkles, blisters, and fish mouths in the base sheet membrane.

3.11 BASE SHEET FLASHING INSTALLATION (SELF ADHERED)

- .1 Apply base sheet flashing only after primer coat is dry.
- .2 Before applying membranes, always burn the plastic film from the section to be covered if there is an overlap (inside and outside corners and field surface). For sanded base sheet membranes, apply primer for self-adhesive membrane on the area to be covered at the foot of the parapets.
- .3 Cut off corners at end laps of areas to be covered by the next roll.
- .4 Each selvedge will overlap the previous one along lines provided for this purpose, and by 150 mm (6 in) at the ends.
- .5 Position the pre-cut membrane. Remove 150 mm (6 in) of the silicone release film to hold the membrane in place at the top of the parapet.
- .6 Then, gradually peel off the remaining silicone release film, pressing down on the membrane with an aluminum applicator to ensure good adhesion. Use the aluminum applicator to ensure a perfect transition between the flashing and the field surface. Smooth the entire membrane surface with a membrane roller for full adhesion.
- .7 Install a reinforcing gusset at all inside and outside corners.
- .8 Always seal overlaps at the end of the workday.
- .9 Avoid the formation of wrinkles, swellings or fishmouths.

3.12 INSTALLATION OF TORCH-APPLIED CAP SHEET

- .1 Once base sheet is applied and no defects are apparent, proceed with cap sheet installation.
- .2 Begin with double-selvedge starter roll. If starter roll is not used, side laps covered in granules must be degranulated by embedding side laps in torch-heated bitumen over a 75 mm. width.
- .3 Unroll cap sheet at drain. Carefully align first side lap (parallel to roof edge).

- .4 At end laps, cut at 45° the area to be covered with an additional cap sheet sidelap.
- .5 Overlap cap sheet side laps by 75 mm. and end laps by 150 mm. All overlap surfaces must be degranulated. End laps should be staggered by a minimum of 300mm
- .6 Weld cap sheet onto base sheet with torch recommended by membrane manufacturer. During application, simultaneously melt both designated contact surfaces so a bead of bitumen is apparent as cap sheet unrolls.
- .7 Avoid overheating.
- .8 Complete perfect welds between two membranes. Leave no zone unwelded. In cold weather, adjust welding time to obtain homogenous seam (it may be necessary to slow down in certain cases.) During installation, take care to avoid excessive bitumen bleed-out at joints.
- .9 Avoid walking on recently installed and still hot membranes
- .10 Once cap sheet is installed, carefully check all overlapped joints with a trowel to ensure a full weld at all seams where bleed-out is not visible.

3.13 INSTALLATION OF THERMOFUSIBLE CAP SHEET ON FLASHINGS AND PARAPETS

- .1 This cap sheet must be installed in one-metre-wide strips (3.25 ft).
- .2 Each selvedge will overlap the previous one laterally along lines provided for this purpose, and will overlap by 150 mm (6 in) the field surface. Membranes for flashings must be spaced at least 100 mm (4 in) with respect to the cap sheet membranes on the field surface, to avoid areas of excessive membrane thickness.
- .3 Cut off corners at end laps on areas to be covered by the next roll.
- .4 Use a chalk line to draw a straight line on the field surface, 150 mm (6 in) from flashings and parapets.
- .5 Use a torch and round-nose trowel to embed the surface granules in the layer of hot bitumen, starting from the chalk line on the field surface to the bottom edge of the flashing or parapet, as well as on the granulated vertical surfaces to be overlapped.
- .6 This cap sheet will be heat-welded directly to the base sheet membrane, proceeding from bottom to top.
- .7 Avoid the formation of wrinkles, swellings or fishmouths.
- .8 During installation, be careful not to overheat the membrane and its reinforcements.

3.14 ROOFING FOR VARIOUS DETAILS

- .1 All existing rain water leaders to be thoroughly prepared within to allow for a complete and uninterrupted seal with the new u-flow connector.
- .2 Install waterproofing membranes in conformance with various roofing details illustrated in the Manufactures manual.
- .3 ENSURE ALL MECHANICAL AND ELECTRICAL PENETRATIONS ARE WATERPROOFED WITH A SUITABLE PRE-FABRICATED ROOF ACCESSORY, AN INSULATED BOX, OR TWO-PART POLYURETHANE INTERCLIP SYSTEM BY SOPREMA.

END OF SECTION 07 55 10

Part 1 General

1.1 REFERENCES

- .1 The Aluminum Association Inc. (AAI)
 - .1 AAI-Aluminum Sheet Metal Work in Building Construction-2002.
 - .2 AAI DAF45-03, Designation System for Aluminum Finishes.
- .2 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A167-99(2004), Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .2 ASTM A240/A240M-07e1, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.
 - .3 ASTM A606-04, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.
 - .4 ASTM A653/A653M-07, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .5 ASTM A792/A792M-06a, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
 - .6 ASTM B32-04, Standard Specification for Solder Metal.
 - .7 ASTM B370-03, Standard Specification for Copper Sheet and Strip for Building Construction.
 - .8 ASTM D523-89(1999), Standard Test Method for Specular Gloss.
 - .9 ASTM D822-01(2006), Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.
- .3 Canadian Roofing Contractors Association (CRCA)
 - .1 Roofing Specifications Manual 1997.
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.32-M77, Sheathing, Membrane, Breather Type.
 - .2 CAN/CGSB-93.1-M85, Sheet Aluminum Alloy, Prefinished, Residential.
- .5 Canadian Standards Association (CSA International)
 - .1 CSA A123.3-05, Asphalt Saturated Organic Roofing Felt.
 - .2 AAMA/WDMA/CSA 101/I.S.2/A440-2008, Standard/Specification for Windows, Doors, and Unit Skylights.
 - .3 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .6 Green Seal Environmental Standards
 - .1 Standard GS-03-93, Anti-Corrosive Paints.
 - .2 Standard GS-11-97, Architectural Paints.
 - .3 Standard GS-36-00, Commercial Adhesives.
- .7 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .8 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .9 Product Data:
 - .1 Submit manufacturer's printed product literature for sheet metal flashing systems materials, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.

- .2 Submit two copies WHMIS MSDS - Material Safety Data Sheets
- .10 Shop Drawings:
 - .1 Shop drawings: submit drawings requested by consultant.
- .11 Samples:
 - .1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, finishes and colours.
- .12 Quality assurance submittals: submit following in accordance with Section 01 33 00.
 - .1 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.

1.2 QUALITY ASSURANCE

- .1 Pre-Installation Meetings: convene pre-installation meeting one week prior to beginning work of this Section and on-site installation, with contractor's representative and Departmental Representative, and Engineer to:
 - .1 Verify project requirements.
 - .2 Review installation and substrate conditions.
 - .3 Co-ordination with other building sub trades.
 - .4 Review manufacturer's installation instructions and warranty requirements.

1.3 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturers' instructions.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for recycling.

2 Part 2 Products

2.1 PREFINISHED STEEL SHEET

- .1 Prefinished steel with factory applied silicone modified polyester, Class F1S, Series 8000.
- .2 Colour selected by Owner / The BTC Representative from manufacturer's standard range.
- .3 Specular gloss: 30 units +/- 5 in accordance with ASTM D523.
- .4 Coating thickness: to be not less than 25 micrometres.
- .5 Resistance to accelerated weathering for chalk rating of 8, colour fade 5 units or less and erosion rate than 20% to ASTM D822 as follows:
 - .1 Outdoor exposure period 1000 hours.
 - .2 Humidity resistance exposure period 1000 hours.
 - .3 Base metal thickness 0.58 mm (26 gauge) unless indicated otherwise. Base metal to be hot-dipped galvanized steel with coating designation Z7275 (G90).

2.2 ACCESSORIES

- .1 Sealing Compound: one component polyurethane base caulking compound to CGSB 19.13-M87. Standard of Acceptance shall be Tremco Dymonic, Sikaflex 1a by Sika, or Sternson RC-1. Sealing compound to be installed in accordance with manufacture's recommendations.
- .2 Cleats and Continuous Starters: of same material and temper as sheet metal, minimum 50.8 mm (2") wide. Thickness of continuous starter to be 24 gauge.

- .3 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.
- .4 Exposed fasteners: Prefinished steel screws, hexagonal head with colour to match metal flashing colour, with neoprene washers.
- .5 Touch-up paint: as recommended by metal flashing and trim manufacturer.

2.3 FABRICATION

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable CRCA 'FL' series specifications as indicated.
- .2 For pieces in 2400 mm (96") maximum lengths.
- .3 Make allowances for expansion at joints.
- .4 Hem exposed edges on underside 12 mm (1/2").
- .5 Mitre and seal corners with sealant.
- .6 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

2.4 METAL FLASHINGS

- .1 Form flashings, copings and drip edges to profiles indicated on drawings, from 0.58 mm thick (26 ga,) prefinished steel.
- .2 Provide slip-lock type joints for vertical faces and coping. Provide 76.2 mm (3") lap joints at horizontal drip edges.

3 Execution

3.1 INSTALLATION

- .1 Install sheet metal and metal siding in accordance with CRCA, SMACNA and manufacturer's specifications, and as detailed.
- .2 Use concealed fastenings except where approved before installation.
- .3 Lock end joints and caulk with sealant.
- .4 Install surface cut reglets true and level, and caulk top of reglet with polyurethane sealant.
- .5 Prime all metal edges to be in contact with membrane as per manufacturers recommendations.
- .6 Provide a sheet metal flashing mock-up for review and approval by the BTC Representative and the Owner prior to fabrication.

End of Section 07 62 00

1. GENERAL

1.1. SCOPE OF WORK

- .1 This Section contains requirements for the installation of sealants and related caulking materials components and accessories.
- .2 Work of this section includes cleaning and/or cutting of reglet joints where shown on the Drawings.

1.2. REFERENCES

- .3 Canadian General Standards Board (CGSB)
 - .1 CGSB 19-GP-14M-[1984], Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).

1.3. SUBMITTALS

- .5 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .6 Manufacturer's product to describe.
 - .1 Caulking compound.
- .7 Cured samples of exposed sealants for each color where required to match adjacent material.
- .8 Submit manufacturer's instructions in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Instructions to include installation instructions for each prod

1.4. QUALITY ASSURANCE/MOCK-UP

- .9 Construct mock-up to show location, size, shape and depth of joint [s] complete with back-up material, primer, caulking and sealant.
- .10 Mock-up will be used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
- .11 Locate where directed.
- .12 Allow 24 hours for inspection of mock-up by Consultant before proceeding with sealant work.
- .13 When accepted, mock-up will demonstrate minimum standard of quality required for this Work. Approved mock-up may remain as part of finished Work. Remove mock-up and dispose of materials when no longer required and when directed by Consultant.

1.5. DELIVERY, STORAGE, AND HANDLING

- .14 Deliver, handle, store and protect materials in accordance with manufacturer's recommendations.
- .15 Deliver and store materials in original wrappings and containers with manufacturer's seals and labels, intact. Protect from freezing, moisture, water and contact with snow or ice; do not store directly on ground or rooftop

1.6. WASTE MANAGEMENT AND DISPOSAL

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .2 Place materials defined as hazardous or toxic in designated containers.
- .3 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.

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- .4 Unused material must not be disposed of into sewer system, into streams, lakes, onto ground or in other location where it will pose health or environmental hazard.
 - .5 Divert unused joint sealing material from landfill to official hazardous material collections site approved by Consultant.
 - .6 Empty plastic joint sealer containers are not recyclable. Do not dispose of empty containers with plastic materials destined for recycling.
 - .7 Fold up metal banding, flatten, and place in designated area for recycling.
- 1.7. PROJECT CONDITIONS
- .16 Environmental Limitations:
 - .1 Do not proceed with installation of joint sealants under following conditions:
 - .1 When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C.
 - .2 When joint substrates are wet.
 - .17 Joint-Width Conditions:
 - .1 Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
 - .18 Joint-Substrate Conditions:
 - .1 Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.
- 1.8. ENVIRONMENTAL REQUIREMENTS
- .19 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.
 - .20 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
 - .21 Ventilate area of work as directed by Engineer by use of approved portable supply and exhaust fans as required.
- 1.9. WARRANTY
- .22 Defective joint sealant installation covered under the warranty shall include but not be limited to: joint leakage, hardening, craze cracking, crumbling, melting, bubbling, shrinkage, runs, and sags, change of colour, loss of adhesion and staining of adjoining or adjacent material surfaces.
 - .23 Provide replacement of defective work prior to the end of the warranty period according to the Consultant's recommendations at no additional cost to the Owner.
 - .24 Inspect the sealant installation 60 days before expiry of warranty and correct defects within 15 days of inspection. This inspection shall be performed at no additional cost to the Owner.
2. PRODUCTS
- 2.1. COMPATIBILITY

- .1 Compatibility between components of roofing system is essential. All roofing components which are to be incorporated into the system must be compatible with the designed roofing system.
- .2 At request of the Consultant, provide written declaration from the manufacturer that components/materials to be installed as part of roofing system are compatible and will not reduce the performance of the roofing system or void the Warranty.

2.2. MATERIALS

- .1 Elastomeric Sealants: One part elastomeric, non-sag urethane based sealant. Acceptable products:
 1. Dymonic as manufactured by Tremco Ltd.or approved equal;
- .2 Colour or colours of sealants shall be selected to match the substrate and shall be approved by the Consultant.
- .3 Primers of Surfaces to Receive Sealants: As recommended by the Manufacturer of the sealant.
- .4 Joint Backing: Polyethylene, urethane, neoprene or vinyl, extruded foam recommended by the sealant manufacturer. Circular shape with diameter 25% greater than joint width before installation.

3. EXECUTION

1.2 PROTECTION

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

1.3 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.

1.4 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.

1.5 BACKUP MATERIAL

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

- 1.6 MIXING
 - .1 Mix materials in strict accordance with sealant manufacturer's instructions.
- 1.7 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 Clean-up.
 - .1 Clean adjacent surfaces immediately and leave Work neat and clean.
 - .2 Remove excess and droppings, using recommended cleaners as work progresses.
 - .3 Remove masking tape after initial set of sealant.

End of Section 07 92 00