

**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**

1550 D'Estimauville Avenue
1550, Avenue d'Estimauville
Québec
Québec
G1J 0C7

FAX pour soumissions: (418) 648-2209

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet 2 Cyclic Corrosion Test Chambers	
Solicitation No. - N° de l'invitation 31206-135240/A	Date 2013-10-07
Client Reference No. - N° de référence du client 31206-135240	
GETS Reference No. - N° de référence de SEAG PW-\$BAL-001-15636	
File No. - N° de dossier BAP-3-36166 (001)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-11-18	
Time Zone Fuseau horaire Heure Normale du l'Est HNE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Tremblay, Marial	Buyer Id - Id de l'acheteur bal001
Telephone No. - N° de téléphone (418) 677-4000 (4159)	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Conseil national de recherches Canada (CNRC) National Research Council Canada (NRC) 501, boulevard de l'Université est Saguenay (Québec) G7H 8C3	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

TPSGC/PWGSC
BFC Bagotville, CP 380
CFB Bagotville, PO Box 380
Bâtiment 71, local 115
Building 71, Room 115
Alouette
Québec
G0V1A0

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

2 CYCLIC CORROSION TEST CHAMBERS

NATIONAL RESEARCH COUNCIL CANADA (NRC) SAGUENAY SITE

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION 4

 1.1 Security Requirement 4

 1.2 Requirement 4

 1.3 Debriefings 4

PART 2 - BIDDER INSTRUCTIONS 5

 2.1 Standard Instructions, Clauses and Conditions 5

 2.2 Submission of Bids 5

 2.3 Enquiries - Bid Solicitation 6

 2.4 Applicable Laws 6

PART 3 - BID PREPARATION INSTRUCTIONS 7

 3.1 Bid Preparation Instructions 7

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION 9

 4.1 Evaluation Procedures 9

 4.1.1 Technical Evaluation 9

 4.1.1.1 Mandatory Technical Criteria 9

 4.1.2 Financial Evaluation 11

 4.2 Basis of Selection - Mandatory Technical Criteria 11

PART 5 - CERTIFICATIONS 12

 5.1 Mandatory Certifications Required Precedent to Contract Award 12

 5.1.1 Code of Conduct and Certifications - Related documentation 12

 5.1.2 Federal Contractors Program for Employment Equity - Bid Certification ... 12

PART 6 - RESULTING CONTRACT CLAUSES 13

 6.1 Security Requirement 13

 6.2 Requirement 13

 6.3 Standard Clauses and Conditions 13

 6.3.1 General Conditions 13

 6.4 Term of Contract 13

 6.4.1 Delivery Period 13

6.5 Authorities	14
6.5.1 Contracting Authority	14
6.5.2 Technical Authority	14
6.5.3 Contractor's Representatives	15
6.6 Payment	15
6.6.1 Basis of Payment - Firm Unit Prices and Firm Lot Prices	15
6.6.2 SACC Manual Clauses	16
6.7 Invoicing Instructions	16
6.8 Certifications	16
6.8.1 Compliance	16
6.9 Applicable Laws	16
6.10 Priority of Documents	17
6.11 Electrical Equipment	17
6.12 Shipping Instructions - Delivery at Destination	17
ANNEX " A " - REQUIREMENT	18
A.1 Annexe "A"	18
ANNEX " B " - BASIS OF PAYMENT	19
B.1 Pricing	19
B.1.1 Cyclic Corrosion Test Chambers and Their Accessories	19
B.1.2 Optional goods	21
ANNEX " C " - PRESENTATION OF YOUR BID	22

PART 1 - GENERAL INFORMATION

1.1 Security Requirement

There is no security requirement associated with the requirement.

1.2 Requirement

The requirement is detailed under Article 6.2 of the resulting contract clauses.

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Your proposal can be transmitted by fax to # 418-648-2209 or by mail to the following address:

→ Bid Receiving Unit
Public Works and Government Services Canada (PWGSC)
1550 D'Estimauville Avenue
Quebec City, Quebec, Canada, G1J 0C7

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of Quebec.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I : Technical Bid (1 hard copy)

Section II : Financial Bid (1 hard copy)

Section III : Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponding to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>).

To assist Canada in reaching its objectives, bidders are encouraged to:

- (1) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- (2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

Exchange Rate Fluctuation

SACC Manual Clause C3010T (2013-04-25) Exchange Rate Fluctuation.

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

The bid must meet the mandatory technical criteria specified below. Bidders must provide the necessary documentation to support compliance with this requirement.

Bids which fail to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately.

Mandatory Technical Criteria	
(1)	<p>Although bidders must propose a main chamber meeting all technical specifications and components outlined in Annex "A"; at the bid closing date, bids will be evaluated on the following five (5) preselected technical specifications: 3.1; 3.5; 3.7; 3.8; and 3.15.</p> <p>Refer to Annex "A" for a complete description of these technical specifications preselected according to their respective number.</p> <p>➔ To explain and demonstrate how they propose to meet the requirements of this request, Bidders must submit with their bid, a copy of complete specifications and technical notes of the products offered. If the documents submitted with your bid (specifications and technical notes of the products offered) does not show that your products meet the preselected technical specifications, your bid will be declared non-responsive.</p> <p>Canada will evaluate only the documentation provided with a bidder's bid.</p>

Mandatory Technical Criteria

- (2) Bidders must propose products which must not be a prototype or test unit but a standard proven product of the manufacturer and contain reliable state-of-the-art technology.

In order to demonstrate that this is a standard proven product of the manufacturer and contain reliable state-of-the-art technology, bidders must provide with their bid, a list of two (2) valid projects. You can provide a project by each of the two chambers required or 2 projects for one of the two chambers, both possibilities are acceptable.

For a project to be considered valid, it is necessary that the product specified in this project:

- (a) be a similar product as requested in this document - the product will be considered similar if it meets all the preselected technical specifications described in mandatory technical criterion # 4.1.1.1 (1) at page 9; and
- (b) was sold between years 2012 and 2010. A product sold in 2013 or 2009, 2008, 2007, and so on, will not be considered a valid project.

→ Bidders should submit with their bid, the following information:

- (i) the brand name and model of the product sold,
- (ii) the date of sale,
- (iii) technical details of the product sold [refer to paragraph (a) above], and
- (iv) the user information: which should include organization name, address, contact, telephone, fax, and the e-mail address.

The information may be verified with the user to check and certify the accuracy of the information.

If the user is not available or the information contained in the list do not match the above requirements, the bid will be declared non-responsive (at least two valid projects).

Mandatory Technical Criteria	
(3)	Bidders must bid on the two cyclic corrosion test chambers required. Any bid received to supply only one single cyclic corrosion test chamber will be rejected and declared non-responsive.
(4)	Bidders must be able to deliver the goods within a maximum period of fifteen (15) weeks after the award of Contract. Any bid stating a delivery period more than fifteen (15) weeks after the award of Contract, will be declared non-responsive. ➔ Although delivery is required within a maximum period of fifteen (15) weeks after contract award, the best delivery can be offered after the award of the contract is: _____ weeks

4.1.2 Financial Evaluation

The total price of each bid will be established using the following criteria:

- (a) Bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded. For evaluation purposes, bids received in a foreign currency will be converted to Canadian funds using the appropriate rate of exchange using the rate quoted by the Bank of Canada as being in effect on date of bid closing.
- (b) Bidders must submit their prices DDP destination; Delivered Duty Paid.

4.2 Basis of Selection - Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price (section B.1.1 of Annex "B" only) will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

5.1 Mandatory Certifications Required Precedent to Contract Award

5.1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

5.1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Human Resources and Skills Development Canada (HRSDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

Notice: Numbering will be revised at contract award

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirement

There is no security requirement associated with the requirement.

6.2 Requirement

The Contractor must supply 2 cyclic corrosion test chambers, in accordance with the requirement at Annex "A".

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010A (2013-04-25), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Delivery Period

All the deliverables must be received within a period _____ weeks after the contract is awarded (To be completed by PWGSC at contract award - Refer to mandatory technical criterion # 4 on page 11 which is to be completed by bidders).

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is Marial Tremblay

Supply Specialist

Telephone: (418) 677-4000, Ext.: 4159

E-mail address: marial.tremblay@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Technical Authority

The Technical Authority for NRC is :

(to be completed at contract award by PWGSC)

Name:

Address:

Tel.:

Fax:

E-mail:

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters related to technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representatives

Name and telephone number of the person responsible for :

(a) Contract Manager:

Name: _____

Title: _____

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

(b) Delivery Follow up:

Name: _____

Title: _____

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

6.6 Payment

6.6.1 Basis of Payment - Firm Unit Prices and Firm Lot Prices

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm unit prices and firm lot prices, as specified in Annex " B " for a cost of \$_____ (to be completed at contract award by PWGSC). Customs duties are subject to exemption, and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 SACC Manual Clauses

Number	Date	Title
C2000C	2007-11-30	Taxes - Foreign-based Contractor
C2602C	2008-05-12	Customs Duties Exempt (National Research Council of Canada)
H1001C	2008-05-12	Multiple Payments

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:

The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

6.8 Certifications

6.8.1 Compliance

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of Quebec.

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) 2010A (2013-04-25), General Conditions - Goods (Medium Complexity);
- (c) Annex "A" - Requirement
- (d) Annex "B" - Basis of Payment; and
- (e) the Contractor's bid dated _____, as amended _____ (to be completed at contract award by PWGSC).

6.11 Electrical Equipment

All electrical equipment supplied under the Contract must be certified or approved for use in accordance with the Canadian Electrical Code, Part 1, before delivery, by a certification organization accredited by the Standards Council of Canada. Shipping Instructions -

6.12 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered Delivered Duty Paid (DDP) NRC-Saguenay, Chicoutimi, Quebec, Canada, Incoterms 2000 for shipments from a commercial contractor.

Solicitation No. - N° de l'invitation

31206-135240/A

Client Ref. No. - N° de réf. du client

31206-135240

Amd. No. - N° de la modif.

File No. - N° du dossier

BAP-3-36166

Buyer ID - Id de l'acheteur

ba1001

CCC No./N° CCC - FMS No/ N° VME

ANNEX " A " - REQUIREMENT

A.1 Annexe "A"

Annex " A " attached hereto is to be inserted at this point and forms part of this document.

ANNEX " B " - BASIS OF PAYMENT

B.1 Pricing

Before submitting prices, please refer to clause **6.6 Payment**.

B.1.1 Cyclic Corrosion Test Chambers and Their Accessories

Please indicate the brand name and model of products offered, and complete the last column of the following table:

Item	Description	Quantity	Unit	Firm Lot Price
1	<p>Cyclic Corrosion Test Chamber of 400 to 700 litres and its accessories</p> <ul style="list-style-type: none"> as per the technical specifications and accessories described in Annex A. <p>→ Brand Name Offered: _____</p> <p>→ Model Offered: _____</p>	1	Lot	\$
2	<p>Cyclic Corrosion Test Chamber of 900 to 1400 litres and its accessories</p> <ul style="list-style-type: none"> as per the technical specifications and accessories described in Annex A. <p>→ Brand Name Offered: _____</p> <p>→ Model Offered: _____</p>	1	Lot	\$
3	<p>Electrical Certificate</p> <ul style="list-style-type: none"> certified or approved under clause <u>6.11 Electrical Equipement</u> of this document. 	1	Lot	\$

Solicitation No. - N° de l'invitation

31206-135240/A

Amd. No. - N° de la modif.

File No. - N° du dossier

BAP-3-36166

Buyer ID - Id de l'acheteur

bal001

CCC No./N° CCC - FMS No/ N° VME

Client Ref. No. - N° de réf. du client

31206-135240

Item	Description	Quantity	Unit	Firm Lot Price
4	Delivery Charges of Both Chambers <ul style="list-style-type: none">goods delivered to NRC-Saguenay, Chicoutimi, Quebec, Canada; according to clause <u>6.12 Shipping Instructions - Delivery at Destination</u> of this document.	1	Lot	\$
5	Documents of Both Chambers <ul style="list-style-type: none">as per Article <u>4. Documentation</u> of Annex A.	1	Lot	\$
Total Value of the Contract =				\$

B.1.2 Optional goods

- (a) It is not mandatory to bid on the following optional goods.
- (b) Please note that we will not consider the firm unit prices of optional goods during the evaluation of bids.
- (c) If any optional goods have been tendered, bidders grant to Canada the irrevocable option to acquire these optional goods when issuing the contract.
- (d) Please complete the last two columns of the following table:

Item	Description	Qty	Unit	Firm Unit Price	Total Price
1	Electronic condensate measurement system collected during testing in salt fog mode, commonly called a "catchpot". <ul style="list-style-type: none">• Including delivery charges as per clause 6.12.	2	Each	\$	\$
2	Electronic system for monitoring and controlling the salt fog flow rate. The system must also enable the continuous, remote reading of the temperature and humidity conditions inside the cyclic corrosion test chamber. <ul style="list-style-type: none">• Including delivery charges as per clause 6.12.	2	Each	\$	\$

ANNEX " C " - PRESENTATION OF YOUR BID

Below is a checklist of the contents of your bid. This list is not an exhaustive list, it remains the Bidder's responsibility to prepare its bid in accordance with the instructions contained in the Request For Proposal (RFP) and provide a comprehensible and sufficiently detailed bid, including all requested pricing details, that will permit a complete evaluation in accordance with the criteria set out in the RFP.

Page 1	Bidders should include with their bid, the first sheet of this RFP properly completed and signed. Refer to 2003 Standard Instructions mentioned in clause 2.1 Standard Instructions, Clauses and Conditions .
Page 5	Bidders must submit their bid only to the address indicated in clause 2.2 Submission of Bids .
Pages 9 to 11	Bids of Bidders must meet the mandatory technical criteria described in clause 4.1.1.1 Mandatory Technical Criteria .
Page 12	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. Refer to clause 5.1.1 Code of Conduct and Certifications - Related documentation .
Page 15	Bidders should submit with their bid, clause 6.5.3 Contractor's Representatives properly completed.
Pages 19 to 21	Bidders must include with their bid, Annex "B" - Basis of Payment duly completed.



Conseil national de recherches
Canada

National Research Council
Canada

Site Saguenay
Centre des technologies
de l'aluminium

Saguenay Site
Aluminium Technology
Centre

CNRC · NRC

Annex “A” - Requirement

Cyclic Corrosion Test Chambers

Reference No.: R685240

Table of Contents

1. PURPOSE	2
2. DELIVERABLES.....	<u>2</u>
3. MANDATORY TECHNICAL SPECIFICATIONS.....	<u>2</u>
5. DOCUMENTATION	<u>5</u>
5. OTHER REQUIREMENTS.....	<u>5</u>
5. DELIVERY AND INSTALLATION	<u>5</u>

1. PURPOSE

The National Research Council (NRC) of Canada's Aluminium Technology Centre (ATC) wishes to purchase two (2) cyclic corrosion test chambers to be used for the following purposes:

- 1.1. Conduct environmental durability tests on diverse materials by submitting them to a variety of salt fog, saturated humidity, controlled humidity and temperature conditions;
- 1.2. Determine the environmental durability of structural joints assembled by adhesive or welding.

2. DELIVERABLES

- 2.1. Two (2) environmental chambers and their accessories, in accordance with the technical specifications below.

3. MANDATORY TECHNICAL SPECIFICATIONS

Physical characteristics

- 3.1. Two (2) distinct cyclic corrosion test chambers are required. The inside dimensions required for each chamber are as follows:
Chamber #1: Chamber capacity of 400 to 700 litres
Chamber #2: Chamber capacity of 900 to 1,400 litres.
- 3.2. The interior of the cyclic corrosion test chambers must be made entirely of polymer materials.
- 3.3. A window must allow viewing of the samples inside the chamber from the outside.

All of the technical specifications described below apply to the two (2) cyclic corrosion test chambers.

Power supply

- 3.4. The main power supply for the cyclic corrosion test chambers must meet one of the following specifications:
- 120/208V / 3-phase / 60-cycle **or**
 - 347/600V / 3-phase / 60-cycle **or**
 - Supply a transformer of the appropriate type and capacity for adapting the cyclic corrosion test chambers to the above electrical characteristics.

Salt fog, humidity and temperature conditions

- 3.5. Each of the cyclic corrosion test chambers must be capable of functioning under the four (4) following conditions within the value ranges defined below:

Condition	Temperature	Humidity
Saturated humidity	Ambient to min. 55°C	Fixe 95-100 %RH
Salt fog	Ambient to min. 50°C	Not applicable
Air drying	Ambient to min. 70°C	Not controlled
Controlled humidity	Capacity to achieve all of the temperature/humidity combinations within the following ranges: <ul style="list-style-type: none">• 30–60°C and 30–80% RH• 35–55°C and 30–90% RH	

- 3.6. Each cyclic corrosion test chamber must be equipped with a salt fog pre-humidification system.

Control of the apparatus

- 3.7. The cyclic corrosion test chambers must be programmable by the user within the limits defined at item 3.6, so that the cycles adapted to clients' needs can be operationalized.
- 3.8. The cyclic corrosion test chambers must have a digital display panel that provides continuous information on the temperature and humidity conditions in the chamber, as well as the target conditions specified by the device.
- 3.9. The cyclic corrosion test chambers must have a graphic display panel that shows, at minimum, for the last 96 hours of operation, the temperature and humidity conditions read by the sensors, compared with the target temperature and humidity conditions specified by the device.

- 3.10. The cyclic corrosion test chambers must self-purge automatically before the door is opened to prevent salt fog from dispersing into the laboratory.
- 3.11. The cyclic corrosion test chambers must enable the programming of a stop point for the corrosion procedure under way.

Accessories

- 3.12. Each cyclic corrosion test chamber must be supplied with a saline solution tank of a minimum capacity of 80 litres. A minimum of five (5) saline solution filters must be supplied with each chamber, if the use of a filter is required.
- 3.13. Each cyclic corrosion test chamber must be supplied with a minimum of six (6) sample holders with notches made at an angle of $20^{\circ} \pm 5^{\circ}$. The sample holders must be capable of being moved in the chamber and removed for cleaning when necessary.
- 3.14. Each cyclic corrosion test chamber must be equipped with an access port measuring a minimum of 50 cm^2 for connecting samples inside the chamber to external measuring devices.
- 3.15. A system for recovering and processing salt fog vapour must be supplied with each cyclic corrosion test chamber. The system must prevent the release of salt fog into the laboratory. It must also prevent the need to use an exhaust vent, which would discharge the saline vapours outside the building.
- 3.16. Each of the cyclic corrosion test chambers must be equipped with a communication port so that they can be connected to a computer to control the chamber in the event that control software is purchased in the future from the manufacturer of the cyclic corrosion test chamber.

4. DOCUMENTATION

4.1. The following documents, one (1) in printed or electronic format for each of the cyclic corrosion test chambers, must be provided (in French or English, but preferably in both languages) together with the delivery of the cyclic corrosion test chambers to the NRC Saguenay site:

- 1- User manual, including all the applicable health and safety procedures;
- 2- Service and maintenance manual.

5. OTHER REQUIREMENTS

5.1. The Contractor must provide technical assistance by telephone or e-mail during NRC-Saguenay working hours (Monday to Friday between 8:00 a.m. and 4:30 p.m.).

6. DELIVERY AND INSTALLATION

6.1. The two (2) cyclic corrosion test chambers must be delivered to the following address:

Aluminium Technology Centre
National Research Council Canada
Saguenay Site
501 De l'Université Blvd. East
Saguenay, QC G7H 8C3
Canada

6.2. The cyclic corrosion test chambers must be installable by NRC personnel along with competent plumbing and electrical companies near the NRC-Saguenay site.