



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government  
Services Canada/Réception des soumissions  
Travaux publics et Services gouvernementaux  
Canada

Pacific Region

401 - 1230 Government Street

Victoria, B.C.

V8W 3X4

Bid Fax: (250) 363-3344

## INVITATION TO TENDER

## APPEL D'OFFRES

**Tender 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.

### Soumission 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 et sur toute feuille ci-annexée, au(x) prix indiqué(s).

### Comments - Commentaires

### Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

### Issuing Office - Bureau de distribution

Public Works and Government Services Canada -  
Pacific Region

401 - 1230 Government Street

Victoria, B. C.

V8W 3X4

<b>Title - Sujet</b> Marine Fenders	
<b>Solicitation No. - N° de l'invitation</b> EZ108-201003/A	<b>Date</b> 2019-09-03
<b>Client Reference No. - N° de référence du client</b> EZ108-201003	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$XLV-176-7798
<b>File No. - N° de dossier</b> XLV-9-42091 (176)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2019-09-19</b>	
<b>Time Zone</b> <b>Fuseau horaire</b> Pacific Daylight Saving Time PDT	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Godin, Andre	<b>Buyer Id - Id de l'acheteur</b> xl176
<b>Telephone No. - N° de téléphone</b> (250) 216-2504 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> Public Works and Government Services Canada See herein	

Instructions: See Herein

Instructions: Voir aux présentes

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

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Requirement**

PWGSC – Esquimalt Graving Dock has a requirement for the supply and delivery of six (6) foam filled marine fenders to Esquimalt Graving Dock facility in Esquimalt, British Columbia. The marine fenders must meet the specific requirements of Annex A.

All the deliverables must be received on or before January 31, 2020.

### **1.2 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 from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### **1.3 Trade Agreements**

The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA), and the Canadian Free Trade Agreement (CFTA).

### **1.4 epost Connect service**

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information.

## 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) (<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 (2019-04-04) 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.

Bid Receiving Public Works and Government Services Canada  
Pacific Region  
401 - 1230 Government Street  
Victoria, BC V8W 3X4

[TPSGC.RPReceptiondessoumissions-PRBidReceiving.PWGSC@tpsgc-pwgsc.gc.ca](mailto:TPSGC.RPReceptiondessoumissions-PRBidReceiving.PWGSC@tpsgc-pwgsc.gc.ca) - Bids will be not be accepted if emailed directly to this email address. This email is to initiate an ePost Connect conversation, as detailed in the Standard Instructions.

**Note:** Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions 2003, or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

Bid Fax: (250) 363-3344

### 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing 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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered 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 **British Columbia**.

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

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Buyer ID - Id de l'acheteur

xl1v176

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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

### 3.1 Bid Preparation Instructions

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

- Section I: Technical Bid – Two (2) hard copies;
- Section II: Financial Bid – One (1) hard copy;
- Section III: Certifications – One (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 corresponds 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) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and 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 demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

Bidder shall submit the following with their Technical Proposal:

- 1) Copies of the manufacturer's catalog data including reaction, energy and percent compression curves, shop drawings and/or schematics, dimensions, material specifications, and method of manufacture.
- 2) Certificates of compliance certifying that materials meet the requirements Annex A.
- 3) Bidders should cross reference each of the articles in the specification within their technical proposals to prove that their product meets all of the technical requirements.

#### 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.

##### 3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex D Electronic Payment Instruments, to identify which ones are accepted. If Annex D, Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

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### **3.1.2 Exchange Rate Fluctuation**

C3011T (2013-11-06), Exchange Rate Fluctuation

#### **Section III: Certifications**

Bidders must submit the certifications and additional information 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 Financial Evaluation**

SACC *Manual* Clause [A0220T](#) (2014-06-26), Evaluation of Price

### **4.2 Basis of Selection**

A bid must comply with all requirements of the bid solicitation to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.



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## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

#### 5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 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 available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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

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

### 6.1 Security Requirements

There is no security requirement applicable to the Contract.

### 6.2 Requirement

The Contractor must provide the items detailed under 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) (<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 (2018-02-21), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 6.4 Term of Contract

#### 6.4.1 Delivery Date

All the deliverables must be received on or before January 31, 2020.

#### 6.4.2 Delivery Points

Delivery of the requirement will be made to:

PWGSC – Engineering Assets  
Esquimalt Graving Dock  
825 Admirals Road, Victoria, BC V9A 2P1  
Canada

#### 6.4.3 Shipping Instructions – Delivered Duty Paid

Goods must be consigned and delivered to the destination specified in the contract:  
Incoterms 2000 "DDP Delivered Duty Paid" – Victoria, BC.

### 6.5 Authorities

#### 6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Andre Godin  
Public Services and Procurement Canada Acquisitions Branch  
Directorate: Marine Acquisitions  
Address: 401 – 1230 Government Street  
Victoria, BC  
Canada V8W 3X4  
Telephone: 250-216-2504  
E-mail address: andre.godin3@pwgsc-tpsgc.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 the Contract is provided upon contract award.

Name: TBD  
Title: TBD  
Organization: TBD  
Address: TBD  
Telephone: TBD  
Facsimile: TBD  
E-mail: TBD

The Technical Authority named above 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 concerning the 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 Representative

*Bidder is to complete the table below and submit it with their bid.*

Contact for:	Name	Telephone	Email
Contracting issues			
Technical issues			
Invoicing issues			

## 6.6 Payment

### 6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit prices, as specified in Annex B for a cost of \$\_\_\_\_\_. Customs duties are included 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 Single Payment

SACC Manual clause H1000C (2008-05-12), Single Payment

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**6.6.3 Electronic Payment of Invoices – Contract** *(If applicable)*

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);

**6.7 Invoicing Instructions**

The Contractor must submit invoices in accordance with the section of the General Conditions titled Invoice Submission.

**Invoice is to be made out to:**

PWGSC – Engineering Assets  
Esquimalt Graving Dock  
825 Admirals Road, Victoria, BC V9A 2P1  
Canada

**Electronic invoice is to be sent for verification to:**

[PAC.MARINE@pwgsc-tpsgc.gc.ca](mailto:PAC.MARINE@pwgsc-tpsgc.gc.ca)

Please note the file number in the subject line of the email.

**6.8 Certifications and Additional Information**

**6.8.1 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

**6.9 Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in \_\_\_\_\_.

**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) the general conditions 2010A (2018-06-21), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Requirement;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated \_\_\_\_\_.

**6.11 Insurance**

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

## **ANNEX A - REQUIREMENT**

### **SPECIFICATION FOR NET LESS, SMOOTH SIDED FOAM FILLED MARINE FENDERS**

#### **PART ONE – GENERAL**

##### **1.1 DESCRIPTION OF WORK**

- 1.1.1 This specification covers the supply of six (6) net less, sling type, smooth sided, super high capacity, off the shelf, commercial marine fenders engineered in accordance with the requirements herein.
- 1.1.2 Vendor must supply six (6) foam filled fenders.
- 1.1.3 Fenders must be supplied DDP (Delivered Duty Paid) to the site at the Esquimalt Graving Dock, Victoria, BC, Canada.
- 1.1.4 Delivery must be on or before 31 January 2020.
- 1.1.5 Cranes, riggers and rigging will be supplied by the Consignee at destination to unload the transport vehicle at no charge to Vendor. Personal details of the transport driver must be provided to the Project Authority named in the Contract, a minimum of 24 hours prior to the arrival of the transport vehicle to the destination.

##### **1.2 INSTALLATION**

- 1.2.1 There is no requirement on the part of the Vendor for installation of the fender or provision of any installation hardware.

##### **1.3 REFERENCE DOCUMENTS**

###### **1.3.1 AMERICAN SOCIETY FOR TESTING AND MATERIALS**

- 1.3.1.1 ASTM A123 /A123M– Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- 1.3.1.2 ASTM A153/A153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- 1.3.1.3 ASTM D412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
- 1.3.1.4 ASTM D470 – Standard Test Methods for Crosslinked Insulations and Jackets for Wire and Cable.
- 1.3.1.5 ASTM D624 – Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

- 1.3.1.6 ASTM D1052 – Standard Test Method for Measuring Rubber Deterioration-Cut Growth Using Ross Flexing Apparatus.
- 1.3.1.7 ASTM D1630 – Standard Test Method for Rubber Property-Abrasion Resistance.
- 1.3.1.8 ASTM D1667 – Standard Specification for Flexible Cellular Materials - Poly(Vinyl Chloride) Foam (Closed-Cell).
- 1.3.1.9 ASTM D2240 – Standard Test Method for Rubber Property-Durometer Hardness.
- 1.3.1.10 ASTM D3575 – Standard Test Methods for Flexible Cellular Materials Made From Olefin Polymers.

#### **1.4 OPERATING ENVIRONMENT**

- 1.4.1 Fenders will be located against poured concrete jetty (wharf) faces, in the splash zone, and may be partially submerged in seawater.
- 1.4.2 Components of the fender system could be subject to direct oil liquids at temperatures exceeding +35 C, and ambient air temperatures between -20 to 35 °C (14 to 86 °F).

### **PART TWO – PRODUCTS**

#### **2.1 DESIGN CRITERIA**

- 2.1.1 Fender must have a smooth skinned cylindrical mid-body with no protrusions and conical shaped ends terminating in an end fitting on the cylinders centerline at each end. The diameter and length dimensions are as specified. The fittings at either end must be connected to the fender material so as to transfer the load without damage to the fender body and must terminate in a swivel eye and shackle fitting which allows the end fitting to rotate freely on the axis of the fender. The end fitting must be designed to transmit the ultimate load of the connecting shackle to the fender.
- 2.1.2 Fenders to be resistant to temperature, sunlight, seawater, petroleum products, cleaning agents, and sewage. The above circumstances and conditions must not decrease fender material properties.
- 2.1.3 Fenders to be buoyant and highly resistant to puncture.

#### **2.1 DIMENSIONS**

- 2.2.1 Size to be Industry Standard 4 foot diameter by 20 feet long

#### **2.2 COLOR**

- 2.2.1 Fender skin color must be grey or black throughout the entire thickness.
- 2.2.2 Galvanized hardware must be unpainted.

## **2.3 FOAM FILLED FENDERS**

### **2.4.1 Configuration**

2.4.1 Fenders must have smooth skinned cylindrical mid-bodies with conical or hemispherical shaped ends terminating in an end fitting on the cylinder's centerline at each end. If conical ends are provided, they must have an angle of 60 to 75 degrees, when measured from the central axis of the fender. The fittings at either end must be connected through the center of the fender by a chain, must terminate in a clevis fitting sized for the indicated shackle and must swivel to allow the end fitting to rotate freely on the axis of the fender. End fitting must be designed as small as possible to transmit the ultimate load of the shackle to the fender end fitting must be sized so as not to contact loading surfaces when the fender is compressed to 30 % of its original diameter (70 % compression). The interior of the fender must be filled with energy absorbing closed-cell foam as specified. The use of chipped or particulate foam is not acceptable.

### **2.4.2 Foam Core**

2.4.2.1 The energy absorbing foam core must be a closed-cell cross-linked polyethylene foam with the following properties:

- 2.4.2.1.1 Density, ASTM D1667, 52 to 104 kg/m<sup>3</sup> (3.3 to 6.5 lbs/ft<sup>3</sup>).
- 2.4.2.1.2 Tensile strength, ASTM D3575 or ASTM D412, 550 kPa (80 psi) minimum.
- 2.4.2.1.3 Elongation (ultimate), ASTM D3575 or ASTM D412, 40 % minimum.
- 2.4.2.1.4 Water absorption percent volume after 24 hour exposure, ASTM D1667, 5% maximum.
- 2.4.2.1.5 Continuous service temperature, -54 to 49 °C (-65 to 120 °F).
- 2.4.2.1.6 25 % compressive set, ASTM D1667, 8 % maximum; or
- 2.4.2.1.7 50 % compressive set, ASTM D3575, 12 % maximum.

### **2.4.3 Fender Skin**

2.3.3.1 The outer fender skin must be minimum 25mm (1") thick and constructed of elastomer as specified. Filament reinforcing is required. Twelve separate filament reinforcing wraps must be applied as specified. The filament wraps must be evenly distributed in the inner 80 to 90 % of the coating thickness. The outer 10 to 20 % of elastomer must have no filament reinforcing. The elastomer and filaments must be applied in a continuous manner to assure adhesion between the various layers. The connection of the skin to the end fittings must be designed and sized to transmit twice the safe tensile capacity of the chain into the fender skin.

### **2.3.3.2 Elastomer**

2.3.3.2.1 The elastomer used in the fender skin must be 100 % PTMEG (polytetramethyleneether glycol) polyether urethane elastomer, ultraviolet stabilized with 2.5 % carbon black or equivalent, with the following unreinforced properties:

- 2.3.3.2.1.1 Shore A hardness, ASTM D2240, 80 to 95.
- 2.3.3.2.1.2 Tensile strength, ASTM D412, 19.3 MPa (2800 psi) minimum.
- 2.3.3.2.1.3 Elongation (ultimate), ASTM D412, 300 % minimum.
- 2.3.3.2.1.4 Tear strength, ASTM D470, 1.25 kg/mm (70 lbs/inch) minimum.

2.3.3.2.1.5 Flex life (Ross), ASTM D1052, 200,000 cycles minimum.

2.3.3.2.1.6 Abrasion resistance (NBS), ASTM D1630, 100 minimum.

#### **2.4.3.3 Filament Wrap**

2.4.3.3.1 Each wrap must extend along the entire longitudinal axis of the fender and must also encase the fender end fittings and secure them to the fender body.

#### **2.4.4 Internal Hardware**

2.4.4.1 The internal chain connecting the two end fittings and the two end fittings must be galvanized in accordance with ASTM A123/A123M or ASTM A153/A153M as appropriate. The chain and end clevis fitting must have a minimum ultimate tensile capacity of 640,000 N (144,000 lbs.).

2.4.4.2 The internal chain and end clevis fitting must have a minimum ultimate tensile capacity of 578,000 N (130,000 lbs.). Shackles must be 32 mm (1-¼") and must have a minimum ultimate tensile capacity of 289,000 N (65,000 lbs.).

#### **2.4.5 Connecting Hardware**

2.4.5.1 The swivel and shackles must be galvanized in accordance with ASTM A123/A123M or ASTM A153/A153M, as appropriate. The hardware must be as follows:

2.4.5.2 Shackle: Type IVA, Class 3, Grade A. For Class 3 shackles, the bolt or pins must be secured in place with stainless steel (Type 316) cotter pins or locking pins.

2.4.5.3 Swivel: Type VII, Class 2. All connecting bolts and pins must be of mild steel, matching the properties of the shackle bow.

#### **2.4.6 Performance Requirements**

2.4.6.1 Energy absorption at 60% deflection: Minimum: 400 KN-m (300 ft-kips).

2.4.6.2 Reaction force at 60% deflection: Minimum 800 KN (180 kips), Maximum 845 KN (190 kips).

2.4.6.3 Stated requirement is the rated energy absorption at 60% deflection on performance curve of Energy Absorption vs Percent Compression for the fender

2.4.6.4 The resilient, foam filled marine fenders must be designed so that when compressed across its diameter by two parallel flat plates extending the full length and width of the fender, the fender must absorb 300,265 N-m (221,500 ft-lbs) of energy plus 15% when 60 % compressed (i.e. to a dimension of 40 % of its original diameter) with a corresponding load of not more than 712,000 N (160,000 lbs) plus 15 %. The fender must also be designed to withstand a sustained reaction force of 667,200 N (150,000 lbs.) for a duration of not less than 24 hours each occurrence for at least 200 occurrences during its 10-year predicted life.

## **2.5 FENDER MARKINGS**

2.5.1 Each fender must be identified in readable characters at least 25mm (1") high, either directly or on corrosion and sunlight resistant tags attached permanently to the fender.



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File No. - N° du dossier  
XLV-9-42091

Buyer ID - Id de l'acheteur  
xl1v176  
CCC No./N° CCC - FMS No./N° VME

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2.5.2 The fender markings must include the following:

- 2.5.2.1 Full or abbreviated manufacturer name;
- 2.5.2.2 Fender size, model, or part number designation;
- 2.5.2.3 Fender serial number;
- 2.5.2.4 ASTM designation (including type, grade and class) or ISO number and year, as applicable;
- 2.5.2.5 Rated performance (energy and reaction)

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XLV-9-42091

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xl1v176  
CCC No./N° CCC - FMS No./N° VME

## ANNEX B - BASIS OF PAYMENT

Item	Description	Unit Price	QTY	Extended Total
B1 – Firm Work				
1	Marine Fender, in accordance with Annex A	\$ _____	6	\$ _____
2	Delivery - Incoterms 2000 – Delivered Duty Paid (DDP) to Victoria, BC	LOT		\$ _____
Total – Firm Work				\$ _____

**DELIVERY OFFERED:** \_\_\_\_\_ weeks after contract award.

## ANNEX C - INTEGRITY PROVISIONS – LIST OF NAMES

Please provide list of names of the following entities, according to the ownership nature of the company

1. For a Corporation - each current member of the Bidder's Board of Directors;

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2. For a Partnership, General Partnership or Limited Partnership - the names of all current partners;

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3. For a Sole Proprietorship or an individual doing business under a firm name - the name of the sole proprietor or individual;

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4. For a Joint Venture - the names of all current members of the Joint venture;

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5. For an individual - the full name of the person

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## **ANNEX D - ELECTRONIC PAYMENT INSTRUMENTS**

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ ( ) VISA Acquisition Card;
- ☐ ( ) MasterCard Acquisition Card;
- ☐ ( ) Direct Deposit (Domestic and International);
- ☐ ( ) Electronic Data Interchange (EDI);
- ☐ ( ) Wire Transfer (International Only);

## ANNEX E - BID PACKAGE CHECKLIST

### E1.1 Mandatory Tender Deliverable Check List

Notwithstanding deliverable requirements specified anywhere else within this bid solicitation and its associated Requirement (Annex A), mandatory deliverables that must be submitted with the Bidder's tender to be deemed responsive, are summarized below.

The Bidder must submit a completed Annex E.

The following are mandatory and the Bidder's submission will be evaluated against the requirement as defined herein. The Bidder must be determined to be compliant on each item to be considered responsive.

No	Reference to Solicitation	Description	Condition	Document provided	Reference to Bid (Section, Page no., etc.)
1	Front page	Invitation to Tender document part 1 page 1 completed and signed;	Mandatory with the bid	<input type="checkbox"/>	
2	Part 3, Section I	Technical Bid	Mandatory with the bid	<input type="checkbox"/>	
3	Part 3, Section I	Technical Bid: Copies of the manufacturer's catalog data including reaction, energy and percent compression curves, shop drawings and/or schematics, dimensions, material specifications, and method of manufacture.	Mandatory with the bid	<input type="checkbox"/>	
4	Part 3, Section I	Technical Bid: Certificates of compliance certifying that materials meet the requirements specified in annex A.	Mandatory with the bid	<input type="checkbox"/>	
5	Annex B	Basis of Payment, Completed	Mandatory with the bid	<input type="checkbox"/>	

### E1.2 Supporting Deliverable Requirements

If the following information which supports the bid is not submitted with the Bid; it may be requested by the Contracting Authority, and it must be provided within 48 hours of the written request:

No	Reference to Solicitation	Description	Condition	Document provided	Reference to Bid (Section, Page no., etc.)
1	Article 6.5.3	Contractor's Representatives, table completed	48 hrs of written request	<input type="checkbox"/>	
2	Annex C, article 5.1.1	Integrity Provisions – List of Names, completed	48 hrs of written request	<input type="checkbox"/>	
3	Annex D	Electronic Payment Instruments, completed	48 hrs of written request	<input type="checkbox"/>	