

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

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

**11 Laurier St. / 11, rue Laurier**

### Place du Portage , Phase III

## Core 0B2 / Noyau 0B2

## Gatineau

Québec

**K1A 0S5**

**Bid Fax: (819) 997-9776**

## Request For a Standing Offer Demande d'offre à commandes

National Master Standing Offer (NMSO)

Offre à commandes principale et nationale (OCPN)

Canada, as represented by the Minister of Public Works and Government Services Canada, hereby requests a Standing Offer on behalf of the Identified Users herein.

Le Canada, représenté par le ministre des Travaux Publics et Services Gouvernementaux Canada, autorise par la présente, une offre à commandes au nom des utilisateurs identifiés énumérés ci-après.

## Comments - Commentaires

**Vendor/Firm Name and Address**

Raison sociale et adresse du fournisseur/de l'entrepreneur

**Issuing Office - Bureau de distribution**

Marine Machinery and Services / Machineries et services maritimes

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau

Québec

K1A 0S5

<b>Title - Sujet</b> DIVERSES COMPOSANTES ET ASSEMBLAGES	
<b>Solicitation No. - N° de l'invitation</b> F7047-140073/A	<b>Date</b> 2015-01-29
<b>Client Reference No. - N° de référence du client</b> F7047-140073	<b>GETS Ref. No. - N° de réf. de SEAG</b> PW-\$\$ML-027-24944
<b>File No. - N° de dossier</b> 027ml.F7047-140073	<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 2015-03-12</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Standard Time EST
<b>Delivery Required - Livraison exigée</b> See Herein	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Tamaro, Daniel	<b>Buyer Id - Id de l'acheteur</b> 027ml
<b>Telephone No. - N° de téléphone</b> (819)956-5319 ( )	<b>FAX No. - N° de FAX</b> (819)956-0897
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>  Specified Herein Précisé dans les présentes	
<b>Security - Sécurité</b> This request for a Standing Offer does not include provisions for security. Cette Demande d'offre à commandes ne comprend pas des dispositions en matière de sécurité.	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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See attached.

## VARIOUS COMPONENTS AND ASSEMBLIES FOR MOORING AIDS TO NAVIGATION

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## **VARIOUS COMPONENTS AND ASSEMBLIES FOR MOORING AIDS TO NAVIGATION**

### **PART 1 - GENERAL INFORMATION**

#### **1.1 Introduction**

The Request for Standing Offers (RFSO) is divided into six parts plus attachments and annexes, as follows:

- |        |   |
|--------|---|
| Part 1 | General Information: provides a general description of the requirement;   |
| Part 2 | Offeror Instructions: provides the instructions applicable to the clauses and conditions of the RFSO;   |
| Part 3 | Offer Preparation Instructions: provides offerors with instructions on how to prepare their offer to address the evaluation criteria specified;   |
| Part 4 | Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria which must be addressed in the offer, and the basis of selection;   |
| Part 5 | Certifications: includes the certifications to be provided;   |
| Part 6 | 6A, Standing Offer, and 6B, Resulting Contract Clauses:<br><br>6A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions;<br><br>6B, includes the clauses and conditions which will apply to any contract resulting from a call-up made pursuant to the Standing Offer. |

The Annexes include the Statement of Work, the Mooring Hardware for Aids to Navigation - Technical specification, the Serrated Cast Iron Anchors & Sinkers – Technical Specification, the Basis of Payment - Parts Catalogue and Price List, the Federal Contractors Program for Employment Equity – Certification, the Reporting Requirements, the Financial Evaluation, the Claim for Exchange Rate Adjustments and any other annexes.

#### **1.2 Summary**

The CCG has a requirement for various components and assemblies for mooring aids to navigation. It consists of such items as chains, bridles, shackles, counterweights, sinkers and miscellaneous components required to moor floating aids to navigation installed and maintained throughout the various regions of the Country by the Department of Fisheries and Oceans (Canadian Coast Guard).

The period of the Standing Offer(s) will be for a one year period from the issuance date of the Standing Offer with an option to extend for an additional year.

The Requirement is subject to the provisions of the World Trade Organization - Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Agreement on Internal Trade (AIT).

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As per the Integrity Provisions under section 01 of Standard Instructions [2006](#), offerors must provide a list of all owners and/or Directors and other associated information as required. Refer to section [4.21](#) of the Supply Manual for additional information on the Integrity Provisions.

### **1.3 Debriefings**

Offerors may request a debriefing on the results of the request for standing offers process. Offerors should make the request to the Standing Offer Authority within 15 working days of receipt of the results of the request for standing offers process. The debriefing may be in writing, by telephone or in person.

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## **PART 2 - OFFEROR INSTRUCTIONS**

### **2.1 Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the Request for Standing Offers (RFSO) 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.

Offerors who submit an offer agree to be bound by the instructions, clauses and conditions of the RFSO and accept the clauses and conditions of the Standing Offer and resulting contract(s).

The 2006 (2014-09-25) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

#### **2.1.1 Condition of Material**

SACC Manual Clause M1004T (2011-05-16) Condition of Material

### **2.2 Submission of Offers**

Offers 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 Request for Standing Offers.

### **2.3 Enquiries - Request for Standing Offers**

All enquiries must be submitted in writing to the Standing Offer Authority no later than five (5) calendar days before the Request for Standing Offers (RFSO) closing date. Enquiries received after that time may not be answered.

Offerors should reference as accurately as possible the numbered item of the RFSO to which the enquiry relates. Care should be taken by offerors 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 offerors do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all offerors. Enquiries not submitted in a form that can be distributed to all offerors may not be answered by Canada.

### **2.4 Applicable Laws**

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Offerors may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their offer, 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 offerors.

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## **PART 3 - OFFER PREPARATION INSTRUCTIONS**

### **3.1. Offer Preparation Instructions**

Canada requests that offerors provide their offer in separately bound sections as follows:

- Section I:        Technical Offer one (1) hard copy
- Section II:       Financial Offer one (1) hard copy
- Section III:      Certifications one (1) hard copy

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

Canada requests that offerors follow the format instructions described below in the preparation of their offer.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to that of the Request for Standing Offers.

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, offerors 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 Offer**

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

#### **Section II: Financial Offer**

Offerors must submit their financial offer in accordance with Annex D Basis of Payment - Parts Catalogue and Price List. The total amount of Applicable Taxes must be shown separately.

##### **3.1.1 Payment by Credit Card**

Canada requests that offerors complete one of the following:

- (a)    (   )    Government of Canada Acquisition Cards (credit cards) will be accepted for payment of call-ups against the standing offer.

The following credit card(s) are accepted:  
VISA \_\_\_\_\_



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Master Card \_\_\_\_\_

- (b) ( ) Government of Canada Acquisition Cards (credit cards) will not be accepted for payment of call-ups against the standing offer.



The Offeror is not obligated to accept payment by credit card.

Acceptance of credit cards for payment of call-ups will not be considered as an evaluation criterion.

### 3.1.2 Firm Prices

The Offeror is required to submit firm prices that will apply for the entire period of the Standing Offer.

### 3.1.3 Exchange Rate Fluctuation Risk Mitigation

1. The Bidder may request Canada to assume the risks and benefits of exchange rate fluctuations. If the Bidder claims for an exchange rate adjustment, this request must be clearly indicated in the bid at time of bidding. The Bidder must submit form [PWGSC-TPSGC 450](#) , Claim for Exchange Rate Adjustments with its bid, indicating the Foreign Currency Component (FCC) in Canadian dollars for each line item for which an exchange rate adjustment is required.
2. The FCC is defined as the portion of the price or rate that will be directly affected by exchange rate fluctuations. The FCC should include all related taxes, duties and other costs paid by the Bidder and which are to be included in the adjustment amount.
3. The total price paid by Canada on each invoice will be adjusted at the time of payment, based on the FCC and the exchange rate fluctuation provision in the contract. The exchange rate adjustment will only be applied where the exchange rate fluctuation is greater than 2% (increase or decrease).
4. At time of bidding, the Bidder must complete columns (1) to (4) on form [PWGSC-TPSGC 450](#) , for each line item where they want to invoke the exchange rate fluctuation provision. Where bids are evaluated in Canadian dollars, the dollar values provided in column (3) should also be in Canadian dollars, so that the adjustment amount is in the same currency as the payment.
5. Alternate rates or calculations proposed by the Bidder will not be accepted for the purposes of this exchange rate fluctuation provision

#### 3.1.3.1 Initial exchange rate

The initial exchange rate is the noon rate as published by the Bank of Canada on the solicitation closing date.

#### 3.1.3.2 The exchange rate for adjustment purposes

The exchange rate for adjustment purposes is the noon rate as published by the Bank of Canada on the direct shipment date, as indicated on the Canada Customs Coding Form, CBSA Form B3-3 (or equivalent Canadian Customs Coding Form).

#### 3.1.3.3 Quality Assurance

Firm prices must include the cost for certification of all goods delivered.

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### **Section III: Certifications**

Offerors must submit the certifications required under Part 5.

## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

### **4.1 Evaluation Procedures**

- (a) Offers will be assessed in accordance with the entire requirement of the Request for Standing Offers including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the offers.

#### **4.1.1 Technical Evaluation**

##### **4.1.1.1 Mandatory Technical Criteria**

Products must be equivalent in form, fit, function and quality to the items specified in the bid solicitation in accordance with Annex A – Statement of Work, Annex B – Mooring Hardware for aids to navigation – Technical Specification and Annex C - Serrated Cast Iron Anchors & Sinkers – Technical Specification.

#### **4.1.2 Financial Evaluation**

##### **4.1.2.1 Evaluation of Price**

The price of the offer will be evaluated in Canadian dollars, Applicable Taxes excluded, DDP destination, Canadian customs duties and excise taxes included.

##### **4.1.2.2 Firm Price**

The Offeror is required to submit firm prices that will apply for the entire period of the Standing Offer.

The Offeror must complete both columns A and B of Annex "D" Basis of Payment - Parts Catalogue and Price List and Annex "G" Financial Evaluation.

##### **4.1.2.3 Financial Evaluation**

The Financial Evaluation criteria is described in Annex " G" – Financial Evaluation

### **4.2 Basis of Selection**

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 on an, item by item basis / an assembly basis / a lot basis, will be recommended for award of a contract as per Annex D - Basis of Payment - Parts Catalogue and Price List. For any given line item, should the price difference between the lowest offerer of one Coast and the lowest offerer for the other Coast be less than 5%, then the lowest offerer for that line item will be recommended for issuance of a standing offer for that line item for both Coasts.

Up to four (4) standing offers could be issued. A fifth could be issued should significant savings be made on certain items.

Some line items may be removed from the Parts Catalogue and Price list should the bid prices not represent fair value.

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In the event of identical low bids the Standing Offer Authority will use one of the Supply Manuals solutions proposed article 5.65 Identical Low Bids - Best Value

#### **4.2.1 SACC Manual Clause**

M0222T (2013-04-25) Evaluation of Price

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## PART 5 - CERTIFICATIONS

Offerors must provide the required certifications and associated information to be issued a standing offer.

The certifications provided by offerors to Canada are subject to verification by Canada at all times. Canada will declare an offer non-responsive, will have the right to set-aside a standing offer, or will declare a contractor in default in carrying out any of its obligations under any resulting contracts, if any certification made by the Offeror is found to be untrue whether made knowingly or unknowingly during the offer evaluation period, during the Standing Offer period, or during the contract period.

The Standing Offer Authority will have the right to ask for additional information to verify the Offeror's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Standing Offer Authority may render the Offer non-responsive, may result in the setting aside of the Standing Offer or constitute a default under the Contract.

### 5.1 Certifications Precedent to Issuance of a Standing Offer

The certifications listed below should be completed and submitted with the offer, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Standing Offer Authority will inform the Offeror of a time frame within which to provide the information. Failure to comply with the request of the Standing Offer Authority and to provide the certifications within the time frame provided will render the offer non-responsive.

#### 5.1.1 Integrity Provisions - Associated Information

By submitting an offer, the Offeror certifies that the Offeror and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Offer of Standard Instructions 2006. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

#### 5.1.2 Federal Contractors Program for Employment Equity - Standing Offer Certification

By submitting an offer, the Offeror certifies that the Offeror, and any of the Offeror's members if the Offeror is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from [Employment and Social Development Canada-Labour's](#) website.

Canada will have the right to declare an offer non-responsive, or to set-aside a Standing Offer, if the Offeror, or any member of the Offeror if the Offeror is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of issuing of a Standing Offer or during the period of the Standing Offer.

Canada will also have the right to terminate the Call-up for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list during the period of the Contract.

The Offeror must provide the Standing Offer Authority with a completed Annex E - [Federal Contractors Program for Employment Equity - Certification](#), before the issuance of a Standing Offer. If the Offeror is a Joint Venture, the Offeror must provide the Standing Offer Authority with a completed Annex E - Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

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### 5.1.3 Additional Certifications Precedent to Issuance of a Standing Offer

#### 5.1.3.1 Mandatory Chain and Mooring Hardware Technical Criteria Checklist

Reference	Item	Criterion	Verification Method	Offeror certifies that all technical dimensions, tolerances, material notes and certifications will be complied with
Data Sheet 101	Standard Chain	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 102	Standard Chain End Link	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 103	Long Link Chain	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 104	Bridle Ring	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 105	Sinker / Anchor Link	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 301	Bridle Shackle	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 302	Bow Shackle	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 401	Clinch Shackle	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 501	Swivel	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 601	Kenter 'Detachable Link'	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	
Data Sheet 701	Counterweight	Overall dimension, tolerances and material notes	Lloyds Certificate of conformance	

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## PART 6 - STANDING OFFER AND RESULTING CONTRACT CLAUSES

### A. STANDING OFFER

#### 6.1 Offer

**6.1.1** The Offeror offers to fulfill the requirement in accordance with the Statement of Work at Annex "A", the mooring hardware for aids to navigation – Technical Specification at Annex "B", and the Serrated Cast Iron Anchors & Sinkers – Technical Specification at Annex "C" and the Basis of Payment – Parts Catalogue and Price List at Annex D. Annex "A", "B", "C" and "D" are attached to this Request for Standing Offers.

#### 6.2 Security Requirements

**6.2.1** There is no security requirement applicable to this Standing Offer.

#### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Standing Offer and resulting contract(s) 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

2005 (2014-09-25) General Conditions - Standing Offers - Goods or Services, apply to and form part of the Standing Offer.

##### 6.3.2 Standing Offers Reporting

The Offeror must compile and maintain records on its provision of goods, services or both to the federal government under contracts resulting from the Standing Offer. This data must include all purchases, including those paid for by a Government of Canada Acquisition Card.

The Offeror must provide this data in accordance with the reporting requirements detailed in Annex "F". If some data is not available, the reason must be indicated. If no goods or services are provided during a given period, the Offeror must still provide a "nil" report.

The data must be submitted on a quarterly basis to the Standing Offer Authority.

The quarterly reporting periods are defined as follows:

1st quarter: April 1 to June 30;

2nd quarter: July 1 to September 30;

3rd quarter: October 1 to December 31;

4th quarter: January 1 to March 31.

The data must be submitted to the Standing Offer Authority no later than fifteen (15) calendar days after the end of the reporting period.

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## **6.4 Term of Standing Offer**

### **6.4.1 Period of the Standing Offer**

The period for making call-ups against the Standing Offer is from \_\_\_\_\_ to \_\_\_\_\_.

(The Standing Offer Authority will insert the start and end date at contract award)

### **6.4.2 Extension of Standing Offer**

If the Standing Offer is authorized for use beyond the initial period, the Offeror offers to extend its offer for an additional one (1) year period, from \_\_\_\_\_ to \_\_\_\_\_ under the same conditions and at the rates or prices specified in the Standing Offer, or at the rates or prices calculated in accordance with the formula specified in the Standing Offer.

(The Standing Offer Authority will insert the start and end date at contract award)

The Offeror will be advised of the decision to authorize the use of the Standing Offer for an extended period by the Standing Offer Authority thirty (30) days before the expiry date of the Standing Offer. A revision to the Standing Offer will be issued by the Standing Offer Authority.

## **6.5. Authorities**

### **6.5.1 Standing Offer Authority**

The Standing Offer Authority is:

Name: Daniel Tamaro  
Supply Officer  
Public Works and Government Services Canada  
Acquisitions Branch  
Directorate: Marine Systems Directorate  
Address: 11 Laurier Street,  
Portage III, 6C2,  
Gatineau QC K1A 0S5  
Telephone: 819-956- 5319  
Facsimile: 819-956-0897  
E-mail address: [Daniel.tamaro@tpsgc-pwgsc.gc.ca](mailto:Daniel.tamaro@tpsgc-pwgsc.gc.ca)

The Standing Offer Authority is responsible for the establishment of the Standing Offer, its administration and its revision, if applicable. Upon the making of a call-up, as Contracting Authority, he is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

### **6.5.2 Project Authority**

The Project Authority for the Standing Offer is:

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_

Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_\_



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Facsimile: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
E-mail address: \_\_\_\_\_

(The Standing Offer Authority will insert the Project authority information at contract award)

The Project Authority is the representative of the department or agency for whom the Work will be carried out pursuant to a call-up under the Standing Offer and is responsible for all the technical content of the Work under the resulting Contract.

And;

The Project Authority for the call-ups against the Standing Offer will be identified in the call-ups against the Standing Offer

### 6.5.3 Offeror's Representative

Name: \_\_\_\_\_  
Title: \_\_\_\_\_

Telephone: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
Facsimile: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
E-mail address: \_\_\_\_\_

(The Standing Offer Authority will insert the offeror's representative's information at contract award)

### 6.6 Identified Users

The Identified Users authorized to make call-ups against the Standing Offer include any government department, agency or Crown corporation listed in Schedules I, I.1, II, III, of the Financial Administration Act, R.S., 1985, c. F-11.

### 6.7 Call-up Procedures

Call-ups will be issued for priced Item(s) in the Basis of Payment - Parts Catalogue and Price List, Annex "D".

### 6.8 Call-up Instrument

The Work will be authorized or confirmed by the Identified User(s) using form PWGSC-TPSGC 942, Call-up Against a Standing Offer

### 6.9 Limitation of Call-ups

#### 6.9.1 For the Identified Users

Individual call-ups against the Standing Offer issued by the identified users must not exceed \$80,000.00 (Applicable Taxes included).

#### 6.9.2 Standing Offer Authority

Individual call-ups against the standing offer of more than \$ 80,000.00 (Applicable Taxes included) shall be authorized by the Standing Offer Authority.

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## 6.10 Financial Limitation

The total cost to Canada resulting from call ups against the Standing Offer must not exceed the sum of \$2,000,000 (*Applicable Taxes excluded*) unless otherwise authorized in writing by the Standing Offer Authority. The Offeror must not perform any work or services or supply any articles in response to call ups which would cause the total cost to Canada to exceed the said sum, unless an increase is so authorized.

(The Standing Offer Authority will insert the amount not to be exceeded at contract award)

The Offeror must notify the Standing Offer Authority as to the adequacy of this sum when 75 percent of this amount has been committed, or three (3) months before the expiry date of the Standing Offer, whichever comes first. However, if at any time, the Offeror considers that the said sum may be exceeded, the Offeror must promptly notify the Standing Offer Authority.

## 6.11 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 call up against the Standing Offer, including any annexes;
- b) the articles of the Standing Offer;
- c) the general conditions 2005 (2014-09-25), General Conditions - Standing Offers - Goods or Services
- d) the general conditions 2010A (2014-11-27) General Conditions - Goods (Medium Complexity)
- e) Annex "A", Statement of Work;
- f) Annex "B", Mooring Hardware for Aids to Navigation – Technical Specification;
- g) Annex "C", Serrated Cast Iron Anchors & Sinkers – Technical Specification;
- h) Annex "D", Basis of Payment - Parts Catalogue and Price List;
- i) Annex "E", Federal Contractors Program for Employment Equity - Certification; and
- j) The Offeror's offer dated \_\_\_\_\_.

(The Standing Offer Authority will insert the date of Offer as specified by the Offeror in his Offer).

## 6.12 Certifications

### 6.12.1 Compliance

The continuous compliance with the certifications provided by the Offeror with its offer and the ongoing cooperation in providing associated information are conditions of issuance of the Standing Offer (SO). Certifications are subject to verification by Canada during the entire period of the SO and of any resulting contract that would continue beyond the period of the SO. If the Offeror does not comply with any certification, fails to provide the associated information, or if it is determined that any certification made by the Offeror in its offer is untrue, whether made knowingly or unknowingly, Canada has the right to terminate any resulting contract for default and set aside the Standing Offer.

## 6.13 Applicable Laws

The Standing Offer and any contract resulting from the Standing Offer must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

(The Standing Offer Authority will insert the Province or territory as specified by the Offeror in his Offer)

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## **B. RESULTING CONTRACT CLAUSES**

The following clauses and conditions apply to and form part of any contract resulting from a call-up against the Standing Offer.

### **6.1 Statement of Work**

The Contractor must perform the Work described in the call-up against the Standing Offer.

### **6.2 Standard Clauses and Conditions**

#### **6.2.1 General Conditions**

2010A (2014-11-27) General Conditions - Goods (Medium Complexity)

(The Standing Offer Authority will insert the following clause if *payment by credit cards is accepted by the offeror*).

Section 16 Interest on Overdue Accounts, of 2010A, General Conditions - Goods (Medium Complexity) will not apply to payments made by credit cards.

### **6.3 Term of Contract**

#### **6.3.1 Delivery Date**

Delivery must be completed in accordance with the call-up against the Standing Offer.

### **6.4 Payment**

#### **6.4.1 Basis of Payment - Firm Unit Price(s) or Firm Lot Price(s)**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit price(s) or firm lot price(s), as specified in Annex "D". 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.

#### **6.4.2 Limitation of Price**

SACC Manual clause C6000C (2011-05-16) Limitation of Price

#### **6.4.3 Multiple Payments**

SACC Manual Clauses H1001C (2008-05-12) Multiple Payments

#### **6.4.4 Taxes - Foreign-based Contractor**

SACC Manual Clauses C2000C (2007-11-30) Taxes - Foreign-based Contractor

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#### 6.4.5 Payment by Credit Card

(The Standing Offer Authority will insert the following text if the bidder accepts payment of invoices by credit card as specified by the Offeror in his Offer).

The following credit card is accepted: \_\_\_\_\_.

**OR**

The following credit cards are accepted: \_\_\_\_\_ and \_\_\_\_\_.

#### 6.5 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. In addition to the requirement of the general conditions 2010A 10 - Invoice Submission, each invoice must be supported by:
  - (a) a copy of the Lloyd's testing certificates;
  - (b) a copy of the Lloyd's material certificates; and
  - (c) A copy of the PWGSC-TPSGC 450 (if applicable)
  - (d) any other document as specified in the Contract/Call up.
3. Invoices must be distributed as follows:
  - (a) The original and one (1) copy must be forwarded to the Regional Base indicated on the Call-up, for certification and payment.
  - (b) [DFOinvoicing-MPfacturation@dfo-mpo.gc.ca](mailto:DFOinvoicing-MPfacturation@dfo-mpo.gc.ca); and
  - (c) One (1) copy must be forwarded to the Standing Offer Authority identified under the section entitled "Authorities" of the Contract.

#### 6.6 Insurance

SACC Manual clause [G1005C](#) (2008-05-12), Insurance

#### 6.7 SACC Manual Clauses

B7500C (2006-06-16) Excess Goods

#### 6.8 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

## 6.9 Exchange Rate Fluctuation Adjustment

1. The foreign currency component (FCC) is defined as the portion of the price or rate that will be directly affected by exchange rate fluctuation. The FCC should include all related taxes, duties and other costs paid by the Bidder and which are to be included in the adjustment amount.
2. For each line item where a FCC is identified, Canada assumes the risks and benefits for exchange rate fluctuation, as shown in the Basis of Payment. For such items, the exchange rate fluctuation amount is determined in accordance with the provision of this clause.
3. The total price paid by Canada on each invoice will be adjusted at the time of payment, based on the FCC and the exchange rate fluctuation provisions in the contract. The exchange rate adjustment amount will be calculated in accordance with the following formula:  
$$\text{Adjustment} = \text{FCC} \times \text{Qty} \times (i_1 - i_0) / i_0$$
where formula variables correspond to:

### FCC

Foreign Currency Component (per unit)

$i_0$


Initial exchange rate (CAN\$ per unit of foreign currency [e.g. US\$1])

$i_1$

exchange rate for adjustments (CAN\$ per unit of foreign currency [e.g. US\$1])

Qty

quantity of units

4. The initial exchange rate is typically set as the noon rate as published by the Bank of Canada on the solicitation closing date.
5. For goods, the exchange rate for adjustment will be the noon rate as published by the Bank of Canada on the date the goods were delivered. For services, the exchange rate for adjustment will be the noon rate on the last business day of the month for which the services were performed. For advance payments, the exchange rate for adjustment will be the noon rate on the date the payment was due. The most recent noon rate will be used for non-business days.
6. The Contractor must indicate the total exchange rate adjustment amount (either upward, downward or no change) as a separate item on each invoice or claim for payment submitted under the Contract. Where an adjustment applies, the Contractor must submit with their invoice form [PWGSC-TPSGC 450](http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html)  <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html> - f2, Claim for Exchange Rate Adjustments.
7. The exchange rate adjustment will only be applied where the exchange rate fluctuation is greater than 2% (increase or decrease), calculated in accordance with column 8 of form [PWGSC-TPSGC 450](http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html) <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html> - f2 (i.e.  $(i_1 - i_0) / i_0$ ).
8. Canada reserves the right to audit any revision to costs and prices under this clause.

### 6.9.1 Initial exchange rate

The initial exchange rate is the noon rate as published by the Bank of Canada on the solicitation closing date.

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### **6.9.2 The exchange rate for adjustment purposes**

The exchange rate for adjustment purposes is the noon rate as published by the Bank of Canada on the direct shipment date, as indicated on the Canada Customs Coding Form, CBSA Form B3-3 (or equivalent Canadian Customs Coding Form).

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**ANNEX "A"**

**STATEMENT OF WORK**

See attached.

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**ANNEX "B"**

**MOORING HARDWARE FOR AIDS TO NAVIGATION – TECHNICAL SPECIFICATION**

**See attached.**



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**ANNEX "C"**

**SERRATED CAST IRON ANCHORS & SINKERS – TECHNICAL SPECIFICATION**

**See attached.**

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## ANNEX "D"

### BASIS OF PAYMENT- PARTS CATALOGUE AND PRICE LIST

<i>Catalogue No.</i>	<i>Use with chain #</i>	<i>Description</i>	<i>Unit</i>	<i>Weight Kg</i>	<i>Price Maritime</i>	<i>Price Pacific</i>
<b>101</b>	<b>101</b>	<b>Standard Buoy Chain; Dwg 101, U2 Steel;</b>				
101-14	14	Standard Buoy Chain, 14 mm	meter			
101-20	20	Standard Buoy Chain, 20 mm	meter			
101-26	26	Standard Buoy Chain, 26 mm	meter			
101-32	32	Standard Buoy Chain, 32 mm	meter			
101-38	38	Standard Buoy Chain, 38 mm	meter			
<b>102</b>	<b>102</b>	<b>Standard Chain End- Link; Dwg 102, U2 Steel;</b>				
102-18	14	Standard Buoy Chain, 14 mm, END-LINK Installed	Each			
102-24	20	Standard Buoy Chain, 20 mm, END-LINK Installed	Each			
102-32	26	Standard Buoy Chain, 26 mm, END-LINK Installed	Each			
102-38	32	Standard Buoy Chain, 32 mm, END-LINK Installed	Each			
102-46	38	Standard Buoy Chain, 38 mm, END-LINK Installed	Each			
<b>103</b>	<b>103</b>	<b>Long link Chain; Dwg 103; U2 Steel;</b>				
103-14	14	Long Link Chain, 14 mm	meter			
103-20	20	Long Link Chain, 20 mm	meter			
103-26	26	Long Link Chain, 26 mm	meter			
103-32	32	Long Link Chain, 32 mm	meter			
103-38	38	Long Link Chain, 38 mm	meter			
<b>104</b>	<b>104</b>	<b>Bridle Ring, DWG 104; U2; to suit XX mm chain</b>				
104-20	14	Bridle Ring, 14 mm, Installed	Each			
104-28	20	Bridle Ring, 20 mm, Installed	Each			
104-36	26	Bridle Ring, 26 mm, Installed	Each			
104-45	32	Bridle Ring, 32 mm, Installed	Each			
104-53	38	Bridle Ring, 38 mm, Installed	Each			

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<b>301</b>	<b>301</b>	<b>Buoy Bridle Shackle; Dwg 301; U2; to suit XX mm chain</b>				
301-18	14	Buoy Bridle Shackle, 14 mm	Each			
301-24	20	Buoy Bridle Shackle, 20 mm	Each			
301-32	26	Buoy Bridle Shackle, 26 mm	Each			
301-38	32	Buoy Bridle Shackle, 32 mm	Each			
301-46	38	Buoy Bridle Shackle, 38 mm	Each			
<b>301 Pins</b>	<b>301 Pins</b>	<b>Buoy Bridle Shackle, PINS ONLY</b>				
301-18P	14	Buoy Bridle Shackle, 14 mm, PIN ONLY	Qty100			
301-24P	20	Buoy Bridle Shackle, 20 mm, PIN ONLY	Qty100			
301-32P	26	Buoy Bridle Shackle, 26 mm, PIN ONLY	Qty100			
301-38P	32	Buoy Bridle Shackle, 32 mm, PIN ONLY	Qty100			
301-46P	38	Buoy Bridle Shackle, 38 mm, PIN ONLY	Qty100			
<b>301-CK</b>	<b>301- CK</b>	<b>Buoy Bridle Shackle, Cotter Key</b>				
301-CK1	301- CK1	Buoy Bridle Shackle, Cotter Key, CK1	Qty100			
301-CK2	301- CK2	Buoy Bridle Shackle, Cotter Key, CK2	Qty100			
301-CK3	301- CK3	Buoy Bridle Shackle, Cotter Key, CK3	Qty100			
<b>302</b>	<b>302</b>	<b>BOW KEY SHACKLE; Dwg 302; U2; to suit XX mm chain</b>				
302-18	14	Bow Key Shackle, 14 mm	Each			
302-24	20	Bow Key Shackle, 20 mm	Each			
302-32	26	Bow Key Shackle, 26 mm	Each			
302-38	32	Bow Key Shackle, 32 mm	Each			
302-46	38	Bow Key Shackle, 38 mm	Each			

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<b>401</b>	<b>401</b>	<b>CLINCH SHACKLE; Dwg 401; U2; to suit XX mm chain</b>				
401-20	14	Clinch Shackle, 14 mm	Each			
401-28	20	Clinch Shackle, 20 mm	Each			
401-36	26	Clinch Shackle, 26 mm	Each			
401-45	32	Clinch Shackle, 32 mm	Each			
401-53	38	Clinch Shackle, 38 mm	Each			
<b>501</b>	<b>501</b>	<b>Swivel with End Links; Dwg 501; U2; to suit XX mm Chain</b>				
501-18	14	Swivel with End Link, 14 mm, Installed	Each			
501-24	20	Swivel with End Link, 20 mm, Installed	Each			
501-32	26	Swivel with End Link, 26 mm, Installed	Each			
501-38	32	Swivel with End Link, 32 mm, Installed	Each			
501-46	38	Swivel with End Link, 38 mm, Installed	Each			
<b>701</b>	<b>701</b>	<b>CounterWeight, Dwg 701; Cast Iron &amp; U2 Steel;</b>				
701-0025	-	CounterWeight, 25 Kg	Each	25.0		
701-0050	-	CounterWeight, 50 Kg	Each	50.0		
701-0075	-	CounterWeight, 75 Kg	Each	75.0		
701-0100	-	CounterWeight, 100 Kg	Each	100.0		
701-0200	-	CounterWeight, 200 Kg	Each	200.0		
701-0400	-	CounterWeight, 400 Kg	Each	400.0		
701-0750	-	CounterWeight, 750 Kg	Each	750.0		
701-1000	-	CounterWeight, 1000 Kg	Each	1,000.0		

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<b>703</b>	<b>703</b>	<b>Serrated Sinkers; Dwg 703; Cast Iron &amp; U2 Steel;</b>				
703-0060	-	Serrated Sinkers, 60 Kg	Each	60.0		
703-0100	-	Serrated Sinkers, 100 Kg	Each	100.0		
703-0200	-	Serrated Sinkers, 200 Kg	Each	200.0		
703-0400	-	Serrated Sinkers, 400 Kg	Each	400.0		
703-0600	-	Serrated Sinkers, 600 Kg	Each	600.0		
703-0800	-	Serrated Sinkers, 800 Kg	Each	800.0		
703-1000	-	Serrated Sinkers, 1000 Kg	Each	1,000.0		
703-1500	-	Serrated Sinkers, 1500 Kg	Each	1,500.0		
703-2000	-	Serrated Sinkers, 2000 Kg	Each	2,000.0		
703-3000	-	Serrated Sinkers, 3000 Kg	Each	3,000.0		
703-3500	-	Serrated Sinkers, 3500 Kg	Each	3,500.0		
703-4000	-	Serrated Sinkers, 4000 Kg	Each	4,000.0		
<b>704</b>	<b>704</b>	<b>Serrated Anchors; Dwg 704; Cast Iron &amp; U2 Steel;</b>				
704-0100	-	Serrated Anchors, 100 Kg	Each	100.0		
704-0200	-	Serrated Anchors, 200 Kg	Each	200.0		
704-0400	-	Serrated Anchors, 400 Kg	Each	400.0		
704-0600	-	Serrated Anchors, 600 Kg	Each	600.0		
704-0800	-	Serrated Anchors, 800 Kg	Each	800.0		
704-1000	-	Serrated Anchors, 1000 Kg	Each	1,000.0		
704-2000	-	Serrated Anchors, 2000 Kg	Each	2,000.0		
704-3000	-	Serrated Anchors, 3000 Kg	Each	3,000.0		
704-3500	-	Serrated Anchors, 3500 Kg	Each	3,500.0		
704-4000	-	Serrated Anchors, 4000 Kg	Each	4,000.0		

Note: Chain, Shackle, Pin and Swivel weight estimate are required but are not part of the Evaluation

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## ANNEX "E" to PART 5 - REQUEST FOR STANDING OFFERS

### FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

I, the Offeror, by submitting the present information to the Standing Offer Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare an offer non-responsive, or may set-aside a Standing Offer, or will declare a contractor in default, if a certification is found to be untrue, whether during the offer evaluation period, during the Standing Offer period, or during the contract period. Canada will have the right to ask for additional information to verify the Offeror's certifications. Failure to comply with any request or requirement imposed by Canada may render the Offer non-responsive, may result in the Standing Offer set-aside or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\) – Labour's](#) website.

Date: \_\_\_\_\_ (YYYY/MM/DD) (If left blank, the date will be deemed to be the RFSO closing date.)

Complete both A and B.

A. Check only one of the following:

- ☐ A1. The Offeror certifies having no work force in Canada.
- ☐ A2. The Offeror certifies being a public sector employer.
- ☐ A3. The Offeror certifies being a [federally regulated employer](#) being subject to the [Employment Equity Act](#).
- ☐ A4. The Offeror certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

A5. The Offeror has a combined workforce in Canada of 100 or more employees; and

- ☐ A5.1. The Offeror certifies already having a valid and current [Agreement to Implement Employment Equity](#) (AIEE) in place with ESDC-Labour.

OR

- ☐ A5.2. The Offeror certifies having submitted the [Agreement to Implement Employment Equity](#) (LAB1168) to ESDC-Labour. As this is a condition to issuance of a standing offer, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- ☐ B1. The Offeror is not a Joint Venture.

OR

- ☐ B2. The Offeror is a Joint venture and each member of the Joint Venture must provide the Standing Offer Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

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## **ANNEX "F"**

### **REPORTING REQUIREMENTS**

**Suppliers must report on a quarterly basis on the call-up/contract activities. Such reports may contain, but are not limited to, the following information:**

- i. the standing offer number;**
- ii. the supplier name;**
- iii. the reporting period;**
- iv. the call-up/contract number for each call-up/contract, including amendments;**
- v. the client department;**
- vi. the contracting authority;**
- vii. the date of the call-up/contract;**
- viii. the call-up/contract period;**
- ix. the line items acquired/services provided;**
- x. the value of the call-up/contract, Goods or Services Tax/Harmonized Sales Tax included, as applicable.**

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**ANNEX "G"**

**FINANCIAL EVALUATION**

<b>Evaluation by Assembly</b>								
<i>Catalogue No.</i>	<i>Description (English)</i>	<i>Unit</i>	<i>Price Maritime</i>			<i>Price Pacific</i>		
<b>Evaluation Mooring Hardware, 14 mm</b>			<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>	<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>
101-14	Standard Buoy Chain, 14 mm	meter		110			110	
102-18	Standard Buoy Chain, 14 mm, END-LINK Installed charges below	Each		8			8	
104-20	Bridle Ring, 14 mm, Installed charges below	Each		1			1	
501-18	Swivel with End Link, 14 mm, Installed charges below	Each		1			1	
				<b>Total</b>			<b>Total</b>	

<i>Catalogue No.</i>	<i>Description (English)</i>	<i>Unit</i>	<i>Price Maritime</i>			<i>Price Pacific</i>		
<b>Evaluation Mooring Hardware, 20 mm</b>			<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>	<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>
101-20	Standard Buoy Chain, 20 mm	meter		110			110	
102-24	Standard Buoy Chain, 20 mm, END-LINK Installed charges below	Each		8			8	
104-28	Bridle Ring, 20 mm, Installed charges below	Each		1			1	
501-24	Swivel with End Link, 20 mm, Installed charges below	Each		1			1	
				<b>Total</b>			<b>Total</b>	



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Evaluation by Assembly								
<i>Catalogue No.</i>	<i>Description (English)</i>	<i>Unit</i>	<i>Price Maritime</i>			<i>Price Pacific</i>		
Evaluation Mooring Hardware, 26 mm			<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>	<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>
101-26	Standard Buoy Chain, 26 mm	meter		110			110	
102-32	Standard Buoy Chain, 26 mm, END-LINK Installed charges below	Each		8			8	
104-36	Bridle Ring, 26 mm, Installed charges below	Each		1			1	
501-32	Swivel with End Link, 26 mm, Installed charges below	Each		1			1	
				<b>Total</b>			<b>Total</b>	

<i>Catalogue No.</i>	<i>Description (English)</i>	<i>Unit</i>	<i>Price Maritime</i>			<i>Price Pacific</i>		
Evaluation Mooring Hardware, 32 mm			<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>	<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>
101-32	Standard Buoy Chain, 32 mm	meter		110			110	
102-38	Standard Buoy Chain, 32 mm, END-LINK Installed charges below	Each		8			8	
104-45	Bridle Ring, 32 mm, Installed charges below	Each		1			1	
501-38	Swivel with End Link, 32 mm, Installed charges below	Each		1			1	
				<b>Total</b>			<b>Total</b>	

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Evaluation by Assembly								
<i>Catalogue No.</i>	<i>Description (English)</i>	<i>Unit</i>	<i>Price Maritime</i>			<i>Price Pacific</i>		
Evaluation Mooring Hardware, 38 mm			<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>	<i>Unit Price</i>	<i>QTY</i>	<i>Subtotal</i>
101-26	Standard Buoy Chain, 38 mm	meter		110			110	
102-32	Standard Buoy Chain, 38 mm, END-LINK Installed charges below	Each		8			8	
104-36	Bridle Ring, 38 mm, Installed charges below	Each		1			1	
501-32	Swivel with End Link, 38 mm, Installed charges below	Each		1			1	
				<b>Total</b>			<b>Total</b>	

<i>Catalogue No.</i>	Use with chain #	<i>Description (English)</i>	<i>Unit</i>	<i>QTY</i>	<i>Price Maritime</i>	<i>Price Pacific</i>
<b>103</b>	<b>103</b>	<b>Long link Chain; Dwg 103; U2 Steel;</b>				
103-14	14	Long Link Chain, 14 mm	meter	1		
103-20	20	Long Link Chain, 20 mm	meter	1		
103-26	26	Long Link Chain, 26 mm	meter	1		
103-32	32	Long Link Chain, 32 mm	meter	1		
103-38	38	Long Link Chain, 38 mm	meter	1		

<i>Catalogue No.</i>	Use with chain #	<i>Description (English)</i>	<i>Unit</i>	<i>QTY</i>	<i>Price Maritime</i>	<i>Price Pacific</i>
<b>301</b>	<b>301</b>	<b>Buoy Bridle Shackle; Dwg 301; U2; to suit XX mm chain</b>				
301-18	14	Buoy Bridle Shackle, 14 mm	Each	1		
301-24	20	Buoy Bridle Shackle, 20 mm	Each	1		
301-32	26	Buoy Bridle Shackle, 26 mm	Each	1		
301-38	32	Buoy Bridle Shackle, 32 mm	Each	1		
301-46	38	Buoy Bridle Shackle, 38 mm	Each	1		

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<b>Catalogue No.</b>	Use with chain #	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>301 Pins</b>	<b>301 Pins</b>	<b>Buoy Bridle Shackle, PINS ONLY</b>				
301-18P	14	Buoy Bridle Shackle, 14 mm, PIN ONLY	Qty100	1		
301-24P	20	Buoy Bridle Shackle, 20 mm, PIN ONLY	Qty100	1		
301-32P	26	Buoy Bridle Shackle, 26 mm, PIN ONLY	Qty100	1		
301-38P	32	Buoy Bridle Shackle, 32 mm, PIN ONLY	Qty100	1		
301-46P	38	Buoy Bridle Shackle, 38 mm, PIN ONLY	Qty100	1		

<b>Catalogue No.</b>	Use with chain #	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>301-CK</b>	<b>301-CK</b>	<b>Buoy Bridle Shackle, Cotter Key</b>				
301-CK1	301-CK1	Buoy Bridle Shackle, Cotter Key, CK1	Qty100	1		
301-CK2	301-CK2	Buoy Bridle Shackle, Cotter Key, CK2	Qty100	1		
301-CK3	301-CK3	Buoy Bridle Shackle, Cotter Key, CK3	Qty100	1		

<b>Catalogue No.</b>	Use with chain #	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>302</b>	<b>302</b>	<b>BOW KEY SHACKLE; Dwg 302; U2; to suit XX mm chain</b>				
302-18	14	Bow Key Shackle, 14 mm	Qty100	1		
302-24	20	Bow Key Shackle, 20 mm	Qty100	1		
302-32	26	Bow Key Shackle, 26 mm	Qty100	1		
302-38	32	Bow Key Shackle, 32 mm	Qty100	1		
302-46	38	Bow Key Shackle, 38 mm	Qty100	1		

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<b>Catalogue No.</b>	<b>Use with chain #</b>	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>401</b>	<b>401</b>	<b>CLINCH SHACKLE; Dwg 401; U2; to suit XX mm chain</b>				
401-20	14	Clinch Shackle, 14 mm	Each	1		
401-28	20	Clinch Shackle, 20 mm	Each	1		
401-36	26	Clinch Shackle, 26 mm	Each	1		
401-45	32	Clinch Shackle, 32 mm	Each	1		
401-53	38	Clinch Shackle, 38 mm	Each	1		

<b>Catalogue No.</b>	<b>Use with chain #</b>	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>701</b>	<b>701</b>	<b>CounterWeight, Dwg 701; Cast Iron &amp; U2 Steel;</b>				
701-0025	-	CounterWeight, 25 Kg	Each	1		
701-0050	-	CounterWeight, 50 Kg	Each	1		
701-0075	-	CounterWeight, 75 Kg	Each	1		
701-0100	-	CounterWeight, 100 Kg	Each	1		
701-0200	-	CounterWeight, 200 Kg	Each	1		
701-0400	-	CounterWeight, 400 Kg	Each	1		
701-0750	-	CounterWeight, 750 Kg	Each	1		
701-1000	-	CounterWeight, 1000 Kg	Each	1		

<b>Catalogue No.</b>	<b>Use with chain #</b>	<b>Description (English)</b>	<b>Unit</b>	<b>QTY</b>	<b>Price Maritime</b>	<b>Price Pacific</b>
<b>703</b>	<b>703</b>	<b>Serrated Sinkers; Dwg 703; Cast Iron &amp; U2 Steel;</b>				
703-0060	-	Serrated Sinkers, 60 Kg	Each	1		
703-0100	-	Serrated Sinkers, 100 Kg	Each	1		
703-0200	-	Serrated Sinkers, 200 Kg	Each	1		
703-0400	-	Serrated Sinkers, 400 Kg	Each	1		
703-0600	-	Serrated Sinkers, 600 Kg	Each	1		
703-0800	-	Serrated Sinkers, 800 Kg	Each	1		
703-1000	-	Serrated Sinkers, 1000 Kg	Each	1		
703-1500	-	Serrated Sinkers, 1500 Kg	Each	1		
703-2000	-	Serrated Sinkers, 2000 Kg	Each	1		
703-3000	-	Serrated Sinkers, 3000 Kg	Each	1		
703-3500	-	Serrated Sinkers, 3500 Kg	Each	1		
703-4000	-	Serrated Sinkers, 4000 Kg	Each	1		

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<b>704</b>	<b>704</b>	<b>Serrated Anchor; Dwg 704; Cast Iron &amp; U2 Steel;</b>				
704-0100	-	Serrated Anchor, 100 Kg	Each	1		
704-0200	-	Serrated Anchor, 200 Kg	Each	1		
704-0400	-	Serrated Anchor, 400 Kg	Each	1		
704-0600	-	Serrated Anchor, 600 Kg	Each	1		
704-0800	-	Serrated Anchor, 800 Kg	Each	1		
704-1000	-	Serrated Anchor, 1000 Kg	Each	1		
704-2000	-	Serrated Anchor, 2000 Kg	Each	1		
704-3000	-	Serrated Anchor, 3000 Kg	Each	1		
704-3500	-	Serrated Anchor, 3500 Kg	Each	1		
704-4000	-	Serrated Anchor, 4000 Kg	Each	1		

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**ANNEX "H"**

CLAIM FOR EXCHANGE RATE ADJUSTMENTS

See attached.



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

[EKME # 3353133](#)

Canadian  
Coast Guard

Garde côtière  
canadienne

# *Moorings Hardware for Aids to Navigation*



*Canadian Coast Guard*  
*Statement of Work*

Canada 

**Published under the Authority of:**

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Second Edition – January 2015

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**Record of Amendments**

#	Date	Description	Initials
1	25 April, 2007	First Edition	-
2	January 9, 2015	Second Edition	MP

**Approvals**

A/Office of Primary Interest (OPI)	Marius Parent	Approved: _____
		Date: January 9, 2015
Manager, Aids to Navigation (ITS)	Henry Latchman	Approved: _____
		Date: January 9, 2015
Director, Maritime and Civil Infrastructure (MCI) and Environmental Response (ER) Integrated Technical Services	Fernando Mojica	Approved: _____
		Date: January 9, 2015



## **1.0 INTRODUCTION**

The Canadian Coast Guard (CCG) has a requirement for various components and assemblies for mooring aids to navigations. It consists of such items as chains, bridles, shackles, counterweights, sinkers and miscellaneous components required to moor floating aids to navigation installed and maintained throughout the various regions of the country.

### **1.1 SPECIFICATIONS**

The components shall meet the requirements of the following DFO-MPO documents and reference document as listed:

- Mooring Hardware for Aids to Navigation, Technical Specification, R10.0, Nov. 2014. EKME#2349523.
- Serrated Cast Iron Anchors & Sinkers, Technical Specification, R10.0 Nov. 2014. EKME#2349511
- Lloyd's Register Rules for the Manufacture, Testing and Certification of Materials (July 2014).

## **2.0 SCOPE OF WORK**

### **2.1 REQUIREMENTS**

The Canadian Coast Guard (CCG) has a requirement for mooring hardware in dimensions of 14, 20, 26, 32 and 38mm. The Bidders must be able to provide the called out in the specifications of paragraph 1.2 above, and others documents listed in this SOW, a list of these documents are in Chapter 3 appendix A.

The Bidders will provide CCG chain assembly as design and in quantity as specify by CCG, hardware can also be order per unit in specific quantity.

Complete your submission by completing the Excel file: MECTS- # 3355790-Mooring\_Hardware Chain Bid\_Evaluation\_Annex\_C & D.XLS. The price must reflect the place of delivery and include the cost of delivery. This Excel file also contains the rules for the selection of the winner(s).

### **2.2 QUANTITIES**

Table 1 was realised with data from fiscal year (FY) 2013-14. This is CCG's estimate of annual requirement for various chain assemblies and single hardware. These quantities will be used for purposes of evaluating proposals only. This is not a commitment by CCG to order the quantities of hardware shown but this is CCG's estimate of its future requirements.

**Scope of Work**

Note: To reduce inspection costs and transportation for CCG and bidder; the quantities ordered in the past have been made to use maximum capacity of containers tonnage, and are planning to do the same in the future.

**Table 1: Annual quantity estimates (FY 2013-14)**

Chain Assembly standard (27.5 meters of chain with 2 end links)		
Description	Quantity (units)	Weight (MT)
Chain, Nominal Dia. (mm): 14, 20, 26, 32, 38	1400	400
Hardware, Serrated Cast Iron, Anchors and Sinkers		
Description	Quantity (units)	Weight (MT)
Long Link Chain (103), Bridle Ring (104), Buoy Bridle Shackle (301), Bridle Key Shackle (302), Clinch Shackle (401), Swivel (501), Nominal Dia. (mm) : 14, 20, 26, 32, 38	10,500	25
Description	Quantity (units)	Weight (MT)
Buoy counterweight, anchors and sinkers 25 – 1000 kg, (701, 703, and 704).	250	50
Buoy counterweight, anchors and sinkers 1000 – 4000 kg, (701, 703, and 704).	30	65

## 2.3 DELIVERY

### Location

The bidder must indicate in its bids if the price varies depending on delivery location: East Coast, Dartmouth and West Coast, Victoria (details below). When CCG will issue a PO, the delivery location is identify, cost being already fixed. Delivery will be done using flatbed trailer.

East coast	BIO - Bedford Institute of Oceanography 1 Challenger Dr., Burnside, Dartmouth, Nova Scotia, B2Y 4A2
West coast	Department of Fisheries and Oceans 25 Huron St, Victoria, British Columbia, V8V 4V9

### Time (delivery)

The bidder must indicate in its bids the estimated time required (average) to deliver the material following the issuance of the purchase order (PO), he should specify if delivery time varies from one coast (east/west) to another.

## **2.4 QUALITY ASSURANCE**

The Manufacturer shall maintain a Quality Assurance inspection system to ensure that only acceptable material or services are presented to the Crown.

The Manufacturer shall have an existing, effective Quality Assurance (QA) system certified to ISO 9001:2000 or equivalent. The bidder shall submit a copy of their QA Registration Certificate or make their Quality Assurance Manual(s) available to the Technical Authority and Inspection Authorities.

## **2.5 TESTING, CERTIFICATION AND INSPECTION**

All components and assemblies shall be tested and inspected by the manufacturer prior to shipment and in conformance with the requirements of Lloyd's Register Rules, and Mooring Hardware listed section 1, and tests from Technical Specification listed below. Certificates are to be provided with shipping documents.

Serrated Cast Iron Anchors & Sinkers, Technical Specification (TS)

- C.1.1 Free Fall Impact Test
- C.1.2 Hammer Blow Test

## **2.6 MATERIAL CERTIFICATES**

The contractor shall furnish to CCG, Lloyd's material certificates from the steel mill for each heat of steel used in the manufacture of mooring components listed in the Technical Specification. The certificate shall indicate the heat number, steel grade, chemical composition, yield stress, tensile strength, elongation and quantity of steel represented by the certificate. These material certificates shall be provided to the CCG prior to the final inspection.

## **2.7 TRACEABILITY**

The contractor shall maintain the traceability of steel throughout the manufacturing, testing and inspection process for all mooring components. Each mooring component shall be traceable to the heat of steel from which it was made through the batch number.

## **2.8 FINAL INSPECTION**

All mooring components shall be presented for final visual inspection at destination. The preparation for inspection, the handling of materials and the carrying out of specified tests shall be the responsibility of CCG. The final inspection is not intended to limit or replace inspections or tests normally performed by the contractor and/or manufacturer to ensure product quality.

## **2.9 PACKAGING**

All chains having a bar diameter larger than 26mm, shall be bundled to ensure safe handling and delivery. All other chains and fittings shall be shipped in Flexible Intermediate Bulk Container (*Big-bag FIBC*). Bundling material and FIBCs shall become the property of the Coast Guard. The shipment shall be packaged in a manner that will facilitate a safe unloading at destination by standard lifting equipment; maximum weight for bag is 2.5 MT.

## **2.10 MARKING**

FIBC and bundles shall be tagged with metal or plastic tags. Both shall indicate the name and address of the consignee, contract number, contract item number, lot number, batch number, quantity, size, grade of material and name of manufacturer\contractor.

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## Appendix A

### A.1 DOCUMENTS TO BE SUPPLY

Documents to be joined with the bid or with the items at delivery.

Description	When
<a href="#">2.4 Copy of Quality Assurance (QA) system certified to ISO 9001:2000 or equivalent.</a>	With Bid
<a href="#">2.5 Certificate component stress tests and dimensions.</a>	At delivery
<a href="#">2.5 Certificate Free Fall Impact and Hammer blow tests</a>	At delivery

### A.2 MANDATORY MOORING HARDWARE CRITERIA CHECKLIST

Reference	Item	Criterion	Verification Method	Met/Not Met
Data Sheet 101	Standard Chain	Overall dimension, tolerances and material notes	SOC	
Data Sheet 102	Standard Chain End Link	Overall dimension, tolerances and material notes	SOC	
Data Sheet 103	Long Link Chain	Overall dimension, tolerances and material notes	SOC	
Data Sheet 104	Bridle Ring	Overall dimension, tolerances and material notes	SOC	
Data Sheet 105	Sinker / Anchor Link	Overall dimension, tolerances and material notes	SOC	
Data Sheet 301	Bridle Shackle	Overall dimension, tolerances and material notes	SOC	
Data Sheet 302	Bow Shackle	Overall dimension, tolerances and material notes	SOC	
Data Sheet 401	Clinch Shackle	Overall dimension, tolerances and material notes	SOC	
Data Sheet 501	Swivel	Overall dimension, tolerances and material notes	SOC	
Data Sheet 601	<i>Kenter</i> 'Detachable Link'	Overall dimension, tolerances and material notes	SOC	
Data Sheet 701	Counterweight	Overall dimension, tolerances and material notes	SOC	



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

Canadian  
Coast Guard

Garde côtière  
canadienne

57-013-000-EU-TE-003

# *Mooring Hardware for Aids to Navigation*



*Canadian Coast Guard*  
*Technical Specification*

**Published under the Authority of:**

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Fisheries and Oceans Canada  
Canadian Coast Guard  
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2.0	July 2011	First Release	TM
3.0	Sept 2012	Updated shackle drawing to show Cotter Key Head width	TM
4.0	Oct 2012	Revisional changes to TDS drawing date	TM
5.0	April 2013	Revisional changes to Anchor/Sinker Link	TM
6.0	Nov 2014	Minor Formatting changes to some drawings	TM
10.0	Nov 2014	Updated to version 10.0	TM

### Approvals

Office of Primary Interest (OPI)	Antonio. Maso	Approved:	
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		Date:	Nov 15, 2014
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Director General, Integrated Technical Services	Michel Cécire	Approved:	
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## **Document Management**

### **1. Authority**

This document is issued by the Director General, Integrated Technical Services, CCG's National Technical Authority under delegation from the Deputy Minister, Fisheries and Oceans and the Commissioner of the Canadian Coast Guard.

### **2. Responsibility**

- a) Director, MCI & ER is responsible for:
  - i) the creation and promulgation of the document; and
  - ii) the identification of an Office of Primary Interest (OPI) who is responsible for the coordination and the content of the document.
- b) The OPI is responsible for:
  - i) the validity and accuracy of the content;
  - ii) the availability of this information;
  - iii) the update as needed;
  - iv) the periodical revision; and
  - v) the follow-up of all requests, comments and/or suggestions received by the originator.

### **3. Inquiries and/or Revision Requests**

All inquiries regarding this document, including suggestions for revision and requests for interpretation shall be addressed to the OPI:

Position Title: Manager, Maritime and Civil Infrastructure  
Address: 200 Kent, Street, 7W106  
Ottawa, ON  
K1A 0E6

All requests should:

- i) be clear and concise; and
- ii) reference the specific Chapter, Section, Figure or Table.

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## Chapter 1      GENERAL

---

### 1.1      PURPOSE

This specification states the requirements of the Department of Fisheries and Oceans, Canadian Coast Guard for Mooring Hardware for use on Aids to Navigation for Marine Navigational Purposes.

### 1.2      PRIORITY OF DOCUMENTS

In the event of any conflict in documents or drawings associated with ordering requirements, the following order of priorities shall prevail:

- a)      the contract;
- b)      the specification; and
- c)      the drawings.

In the event of any conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been specified.

### 1.3      REFERENCED DOCUMENTS

The documents listed in this section are form a part of this specification to the extent referenced herein. This section does not include documents cited in other sections of this specification recommended for additional information or as examples. While every effort has been made to ensure completeness of the list, document users are cautioned that they must meet all specified requirements cited in Chapter 2 and Chapter 3 of this specification.

- |   |                        |   |
|---|------------------------|---|
| 1 | Lloyds Register        | Lloyd's Register Rules and Regulations Rules for the Manufacture, Testing and Certification of Materials (July 2006.) |
| 2 | 57-013-000-EU-TE-003 1 | Serrated Cast Iron Anchors and Sinkers  |

## **1.4 REFERENCED DRAWINGS**

The hardware shall be sized and formed in accordance with the relevant Drawing(s) listed below.

- 1 Annex A Technical Data Sheets (TDS) - forms a part of this specification.

## **1.5 SOURCE OF DOCUMENTS**

Documents may be obtained from the following sources:

### **1.5.1 Canadian Government Documents**

Canadian General Standards Board (CGSB)  
CGSB Sales Centre  
Place du Portage III - 6B1,  
11 Laurier Street,  
Gatineau, (Quebec) K1A 1G6

### **1.5.2 Industry Documents**

Canadian Standards Association (CSA)  
5060 Spectrum Way, Suite 100  
Mississauga, Ontario L4W 5N6

International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)  
20 ter Rue Schnapper  
78100 St Germain-en-Laye  
France

Lloyd's Register Rules and Regulations,  
Rules for the Manufacture, Testing and Certification of Materials  
71 Fenchurch St, London  
United Kingdom

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## **Chapter 2      REQUIREMENTS**

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### **2.1      GENERAL**

All components and assemblies shall be manufactured in accordance with the latest edition of Lloyd's Register Rules and Regulations for the Classification of Ships, Part 2, Rules for the Manufacture, Testing and Certification of Materials, Chapter 10, Equipment for Mooring and Anchoring, Section 2 Stud Link Chain Cables for Ships, as applicable for Grade U2 steel.

Accordingly all components and assemblies for mooring aids to navigation shall be manufactured by a Lloyd's Register Approved Manufacturer of Cable and Fittings for Cable, being approved for Grade U2 chain cable and fittings.

The technical requirements for the various components used for mooring assemblies are provided in the Technical Data Sheets (TDS) attached in Annex 'A' of this document.

### **2.2      CERTIFICATES OF CONFORMANCE**

In accordance with the Lloyd's Registry the manufacturer is to confirm, by issuance of a Certificate of Conformity that all chain and hardware shall conform to this specification, drawings and standards. The certificate shall also include the following original information:

- Mill Certificate, for stock steel used / Certificate,
- Heat Treatment Thermal History Report / Certificate,
- Tensile Test Report / Certificate ,
- Brinell Hardness Test Report / Certificate.

Separate reports / certificates supplied must be traceable to the Certificate of Conformity.



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## **Chapter 3      DESIGN**

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### **3.1      CHAINS AND BRIDLES**

The contractor shall design, construct and maintain the equipment for the manufacturing of chain and bridles and all assemblies shall be assembled from the components described in the TDS in Annex A.

### **3.2      SHACKLES AND SWIVELS**

Shackles, swivels and mechanical joining links shall be in accordance with the applicable TDS. In addition they shall meet the requirements set out in the subparagraphs that follow.

Swivels are to be formed by upset forging and welding a solid sleeve onto the swivel pin. Welded swivel design and fabrication process must conform to the Lloyd's Registry (LR) Rules Part 2 and pre-approved by the CCG (Technical authority). Swivels shall be of the shapes, dimensions and tolerances shown on the TDS and shall rotate freely. Threading and pinning will not be accepted.

### **3.3      COUNTERWEIGHTS**

Counterweights shall be manufactured to meet the requirements of the TDS and must conform to LR Rules Part 2.

### **3.4      COTTER KEYS**

Cotter Keys shall be made from Stainless Steel type 316.

### **3.5      FINISH**

All sharp edges and burrs must be removed.

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## **Chapter 4      QUALITY ASSURANCE, INSPECTION & TESTING**

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All components and assemblies shall be manufactured using the Lloyd's Register Manufacturer rules and accordingly the manufacturer shall have a certified quality assurance program in place per Part 2 of the rules.

### **4.1      INSPECTION AND TESTING**

The Contractor shall perform all inspections and tests necessary to ensure that the hardware submitted to the Coast Guard conform to the requirements of this specification. All components and assemblies shall be Proof Load and Breaking Load tested in accordance with the requirements of LR Rules, Part 2, Chapter 10, Sections 2.9, 2.10, and 2.11 and for chain end link, Section 2.14.6.

### **4.2      MATERIALS**

All materials used in the manufacture of components and assemblies shall comply with the requirements of LR Rules Part 2, Chapter 10, Section 2, for Grade U2 steel.

### **4.3      DIMENSIONS AND TOLERANCES**

All components and assemblies shall meet the dimension and tolerance requirements of LR Rules Part 2, Chapter 10, Sections 2.12 and 2.15 or as indicated on the drawing.

### **4.4      IDENTIFICATION**

All components and assemblies shall be stamped in accordance with the requirements of LR Rules, Part 2, Chapter 10, Section 2.16. In addition the following markings shall be legibly stamped with 5 mm high lettering indicating the following:

- Manufacturer ID (ABCD) in raised cast letters in Arial Font
- Batch Number (BN:(XXXX))
- Year of Manufacture (i.e. 2014)

### **4.5      CERTIFICATION**

All components and assemblies shall be provided with certification in accordance with the Section 2.2 herein and the requirements of LR Rules Part 2, Chapter 10, Section 2.17.

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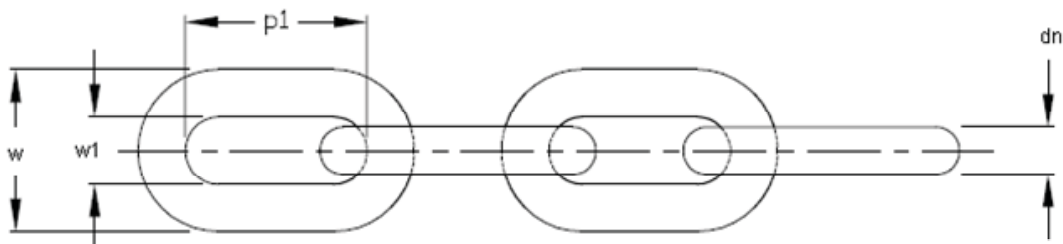
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## **Annex A      TECHNICAL DATA SHEETS (TDS)**

---

<b>TDS #</b>	<b>Description</b>
101	<b>Standard Chain</b>
102	<b>Standard Chain End Link</b>
103	<b>Long Link Chain</b>
104	<b>Bridle Ring</b>
105	<b>Sinker / Anchor Link</b>
301	<b>Bridle Shackle</b>
302	<b>Bow Shackle</b>
401	<b>Clinch Shackle</b>
501	<b>Swivel</b>
601	<b>Kenter ‘Detachable Link’</b>
701	<b>Counterweight</b>

**TECHNICAL DATA SHEET**  
**Mooring Components**



Standard Chain							
Catalog Number	Dimension (mm)				Proof and Breaking Loads (kN)		
	Bar Diameter	Pitch of Chain	Inside Width	Outside Width	Safe Working Load	Proof Load	Breaking Load
	dn	p1	w1	w(ref)			
101-14	14	56	20	48	18	45	90
101-20	20	80	28	68	37	93	185
101-26	26	104	36	88	62	155	310
101-32	32	128	45	109	93	233	465
101-38	38	152	53	129	130	325	650
101-44	44	176	62	150	172	430	860
101-50	50	200	70	170	220	550	1100

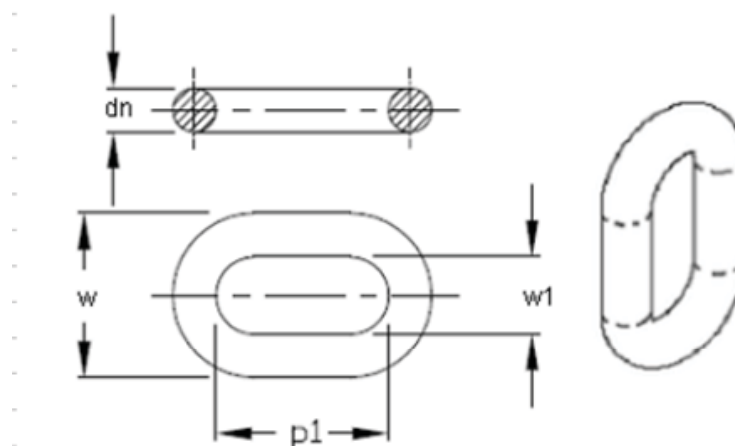
**Dimensional Notes:**

- Fabrication tolerances dimensions:  $\pm 2.5\%$   
All measurements are to be taken after proof testing.

**Material Notes:**

- Remove all sharp edges and burrs
- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 101</b>
<b>Standard Chain</b>	<b>Sheet 1 of 1</b>
	<b>Rev 2014.09.25</b>

**TECHNICAL DATA SHEET****Mooring Components**

Standard Chain End Link								
Catalog Number	For use with chain diameter	Dimensions (mm)				Proof and Breaking Loads (kN)		
		Bar Diameter	Pitch of Chain	Inside Width	Outside Width	Safe Working Load	Proof Load	Breaking Load
		dn	p1	w1	w(ref)			
102-18	14	18	72	23	59	18	45	90
102-24	20	24	96	31	79	37	93	185
102-32	26	32	128	42	106	62	155	310
102-38	32	38	152	49	125	93	233	465
102-46	38	46	184	60	152	130	325	650
102-53	44	53	212	69	175	172	430	860
102-60	50	60	240	78	198	220	550	1100

**Dimensional Notes:**

- Fabrication tolerances dimensions:  $\pm 2.5\%$

All measurements are to be taken after proof testing.

**Material Notes:**

- Remove all sharp edges and burrs

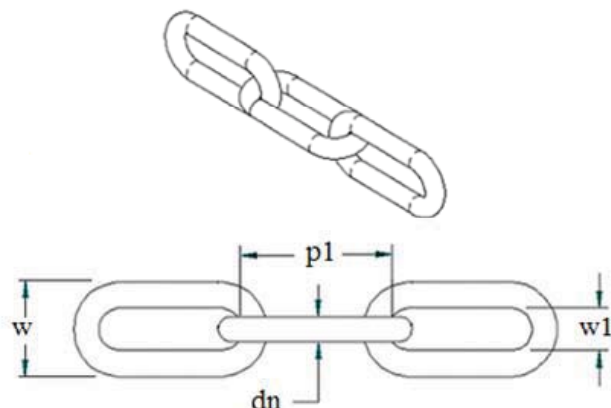
- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 102</b>
<b>Standard Chain End-Link</b>	<b>Sheet 1 of 1</b>
	<b>Rev 2014.09.25</b>



## TECHNICAL DATA SHEET

### Mooring Components



Long Link Chain							
Catalog Number	Dimensions (mm)				Proof and Breaking Loads (kN)		
	Bar Diameter dn	Pitch of Chain p1	Inside Width w1	Outside Width w (ref)	Safe Working Load	Proof Load	Breaking Load
103-14	14	98	20	48	18	45	90
103-20	20	140	28	68	37	93	185
103-26	26	182	36	88	62	155	310
103-32	32	224	45	109	93	233	465
103-38	38	266	53	129	130	325	650
103-44	44	308	62	150	172	430	860
103-50	50	350	70	170	220	550	1100

#### Dimensional Notes:

- Fabrication tolerances dimensions:  $\pm 2.5\%$   
All measurements are to be taken after proof testing.

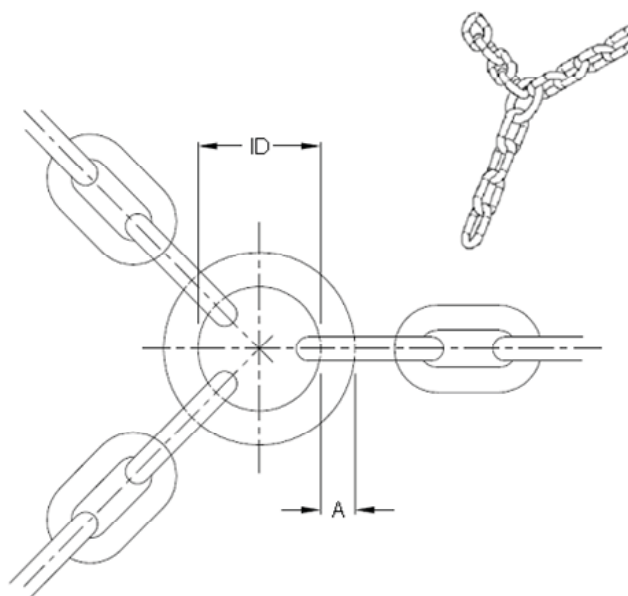
#### Material Notes:

- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 103</b>
<b>Long Link Chain</b>	<b>Sheet 1 of 1</b>
	<b>Rev 2014.09.25</b>

## TECHNICAL DATA SHEET

### Mooring Components



Bridle Ring						
Dimensions (mm)				Proof and Breaking Loads (kN)		
Catalog Number	For use with chain diameter	Bar Diameter	Inside Ring Diameter	Safe Working Load	Proof Load	Breaking Load
		A	ID			
104-20	14	20.0	70	18	45	90
104-28	20	28.0	100	37	93	185
104-36	26	36.0	130	62	155	310
104-45	32	45.0	160	93	233	465
104-53	38	53.0	190	130	325	650
104-62	44	62.0	220	172	430	860
104-70	50	70.0	250	220	550	1100

#### Dimensional Notes:

- Fabrication tolerances dimensions:  $\pm 2.5\%$
- All measurements are to be taken after proof testing.
- kN = Kilonewton

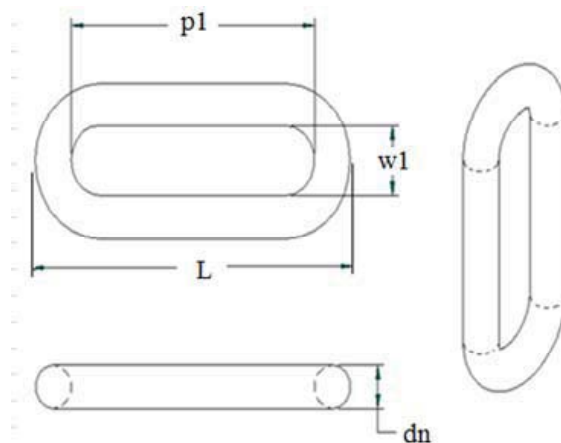
#### Material Notes:

- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 104</b>
<b>Bridle Ring</b>	<b>Sheet 1 of 1</b>
	<b>Rev 2014.09.25</b>

## TECHNICAL DATA SHEET

### Mooring Components



Catalog Number	Dimensions (mm)				Proof and Breaking Loads (kN)		
	Bar Diameter	Pitch	Inside Width	Outside Length	Safe Working Load	Proof Load	Breaking Load
	dn	p1	w1	L (ref)			
105-14	14	140	38	168	18	45	90
105-26	26	250	80	302	62	155	310
105-32	32	380	76	444	93	233	465
105-38	38	350	100	426	130	325	650
105-44	44	565	100	653	172	430	860
105-50	50	600	120	700	220	550	1100
105-60	60	835	120	955	310	775	1550

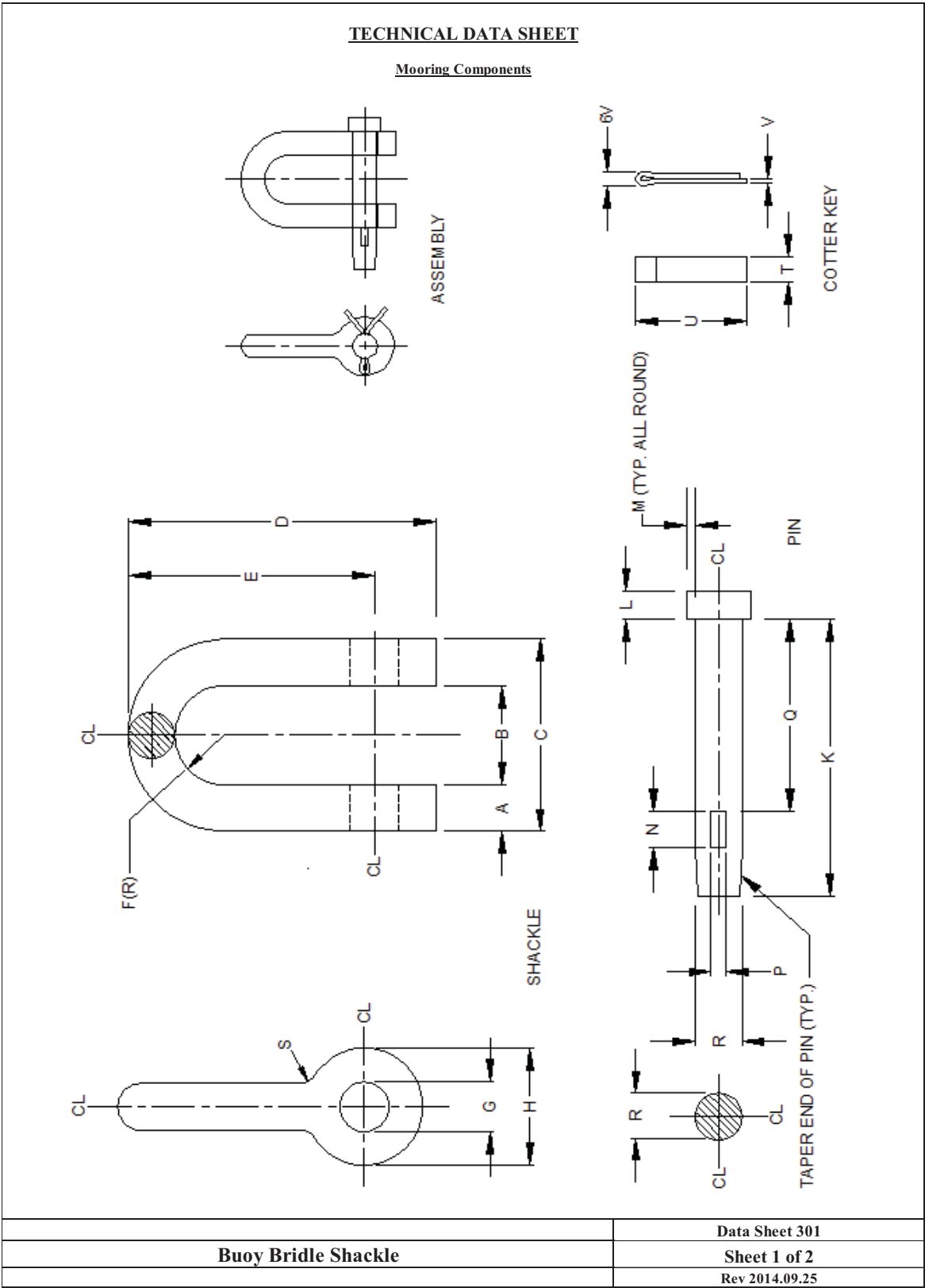
#### Dimensional Notes:

- Fabrication tolerances dimensions:  $\pm 2.5\%$
- All measurements are to be taken after proof testing.

#### Material Notes:

- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 105</b>
<b>Sinker/Anchor Link</b>	<b>Sheet 1 of 1</b>
	<b>Rev 2014.09.25</b>



## TECHNICAL DATA SHEET

### Mooring Components

Shackle Assembly												
Shackle												
Dimensions (mm)										Proof and Breaking Loads (kN)		
Catalog Number	For use with chain diameter	Bar Size A	B	C	D	E	F	G (dia)	H (dia)	Safe Working Load	Proof Load	Breaking Load
301-18	14	18	44	80	120	98	22	19	40	18	45	90
301-20	16	20	56	95	150	125	28	21	50	24	60	120
301-24	20	24	65	113	180	150	33	25	60	37	93	185
301-32	26	32	80	149	230	190	43	33	80	62	155	310
301-38	32	38	85	156	250	202	50	39	95	93	233	465
301-46	38	46	120	196	330	272	60	47	115	130	325	650
301-53	44	53	140	246	380	312	70	54	135	172	430	860
301-60	50	60	160	280	430	355	80	61	150	220	550	1100
Pins										Cotter Keys		
Dimensions (mm)										Dimensions (mm)		
Catalog Number	K	L	M	N	P	Q	R(dia)	S(dia)	Catalog Number	T	U	V
301-18P	120	19	6	24	8	80	18	18	301-CK1	20	90	2
301-20P	140	19	6	24	10	95	20	20	301-CK2	20	90	4
301-24P	160	19	6	24	12	113	24	24				
301-32P	195	22	8	24	12	149	32	32				
301-38P	225	22	8	30	12	156	38	38	301-CK3	26	110	4
301-46P	270	36	8	30	16	196	46	46				
301-53P	308	36	10	30	16	246	53	53				
301-60P	350	36	10	30	16	280	60	60				

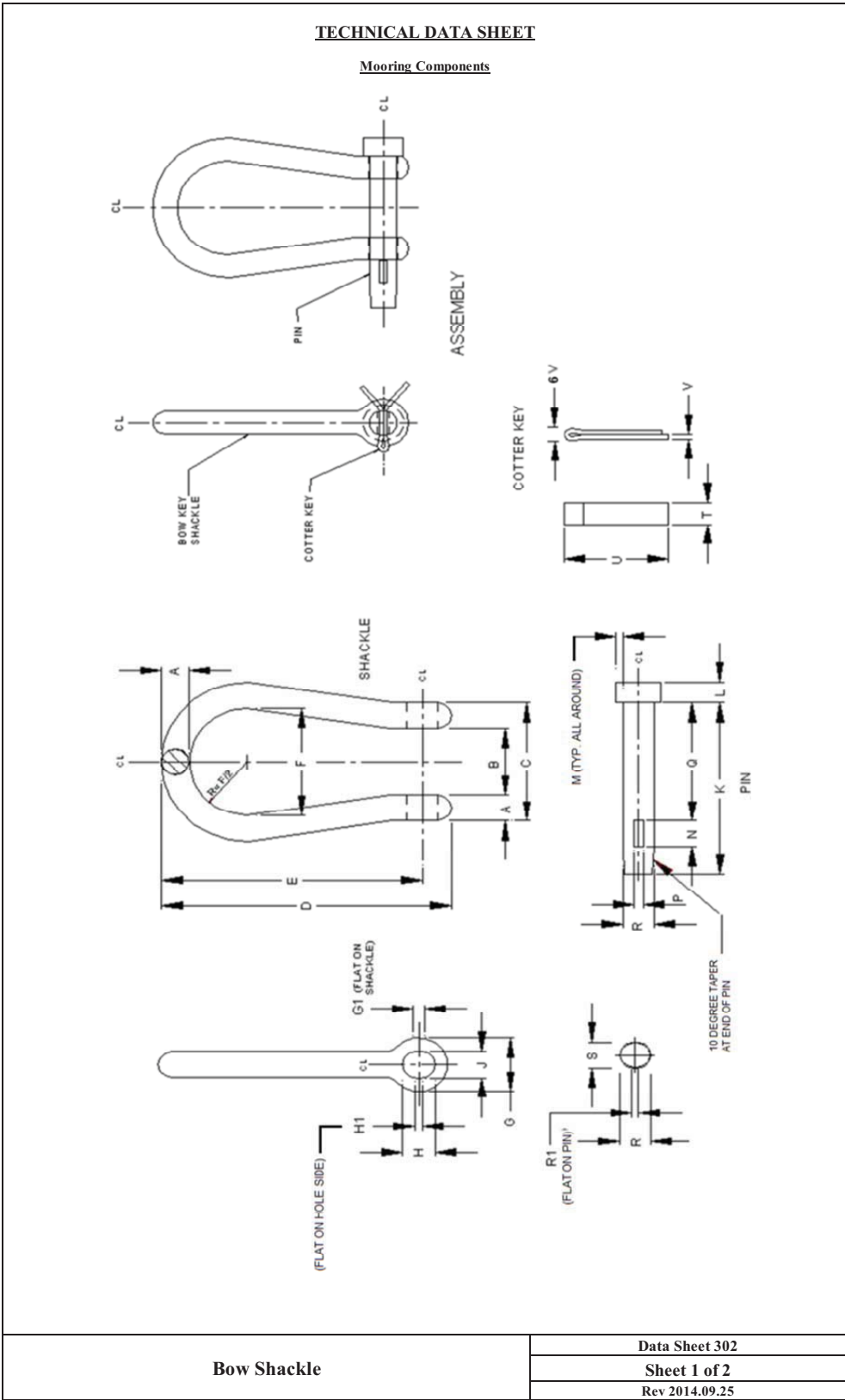
#### Dimensional Notes:

- Shackle assembly includes Pin and matching Cotter Key
- Pin must pass freely through holes in shackle during assembly
- Remove all sharp edges and burrs
- Pins shall be straight with no curvature. Head and pin body shall be concentric
  - Bar Size A: + 5%, - 0%
  - Pin diameter G: + 0%, - 2.5%
  - Hole diameter C: + 2.5%, - 0%
  - Other dimensions:  $\pm 2.5\%$

#### Material Notes:

- All shackles and pins shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.
- Welded pin construction will not be accepted

	Data Sheet 301
<b>Buoy Bridle Shackle</b>	<b>Sheet 2 of 2</b>
	Rev 2014.09.25



## TECHNICAL DATA SHEET

### Mooring Components

Shackle Assembly															
Shackle															
	Dimensions (mm)												Proof and Breaking Loads (kN)		
Catalog Number	For use with chain diameter	Bar Size											Safe Working Load	Proof Load	Breaking Load
A	B	C	D	E	F	G	G1	H	H1	J					
302-18	14	18	54	90	200	178	94	44	6	26	5	21	18	45	90
302-20	16	20	58	98	250	226	98	48	6	27	5	23	24	60	120
302-24	20	24	62	110	260	226	100	50	6	29	5	24	37	93	185
302-32	26	32	56	120	272	240	100	64	6	37	6	31	62	155	310
302-38	32	38	64	140	320	281	105	78	13	48	13	35	93	233	465
302-46	38	46	58	150	340	294	105	92	19	59	19	40	130	325	650
302-53	44	53	64	170	380	326	110	108	21	69	21	45	172	430	860
302-60	50	60	70	90	430	367	110	126	24	75	24	54	220	550	1100
Pins										Cotter Keys					
Dimensions (mm)										Dimensions (mm)					
Catalog Number	K	L	M	N	P	Q	R	R1		Catalog Number	T	U	V		
302-18P	135	12	6	24	8	90	25	5		302-CK1	20	90	2		
302-20P	140	12	6	24	10	98	26	5							
302-24P	160	12	6	30	12	110	28	5							
302-32P	170	12	8	30	12	120	36	6		302-CK2	26	110	3		
302-38P	190	12	8	30	12	140	47	13							
302-46P	205	19	8	36	12	150	58	19							
302-53P	225	19	10	36	12	170	68	21		302-CK3	32	140	4		
302-60P	250	19	10	36	12	190	74	24							

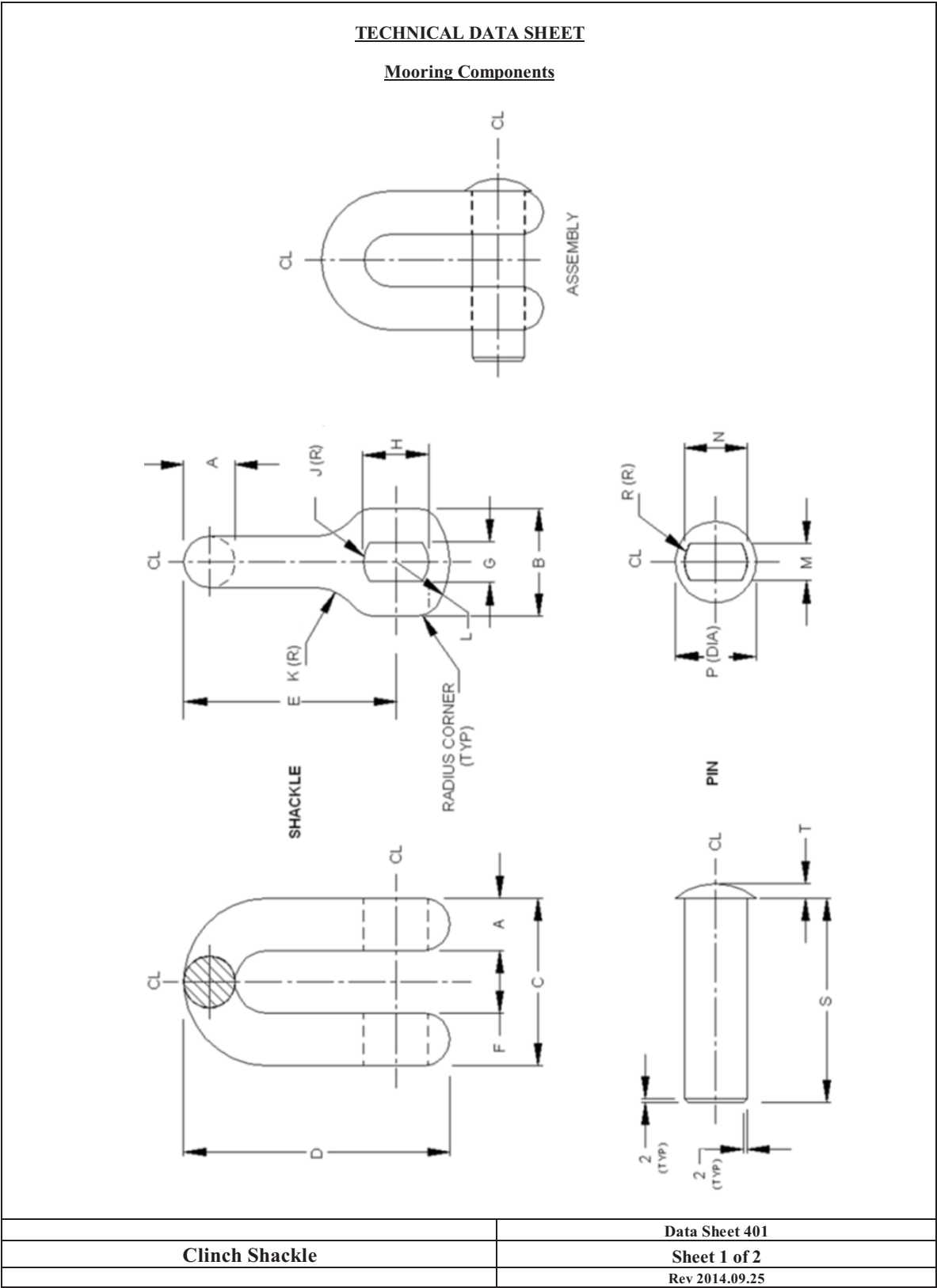
#### Dimensional Notes:

- Shackle assembly includes Pin and matching Cotter Key
- Dimension tolerances:
  - Bar Size A: + 5%, - 0%
  - Pin diameter G: + 0%, - 2.5%
  - Hole diameter C: + 2.5%, - 0%
  - Other dimensions: ± 2.5%
- Pin must pass freely through holes in shackle during assembly
- Remove all sharp edges and burrs
- Pins shall be straight with no curvature. Head and pin body shall be concentric

#### Material Notes:

- All shackles and pins shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.
- Welded pin construction will not be accepted

	<b>Data Sheet 302</b>
<b>Bow Shackle</b>	<b>Sheet 2 of 2</b>
	<b>Rev 2014.09.25</b>





## TECHNICAL DATA SHEET

### Mooring Components

Shackle Assembly															
Shackle															
Catalog Number	For use with chain diameter	Dimensions (mm)											Proof and Breaking Loads (kN)		
		Bar Size											Safe Working Load	Proof Load	Breaking Load
		A	B	C	D	E	F	G	H	J (rad)	K (rad)	L			
401-20	14	20	40	64	100	78	24	16	25	13	17	22	18	45	90
401-28	20	28	58	90	145	116	34	22	35	18	25	29	37	93	185
401-36	26	36	75	116	190	149	44	28	45	23	32	41	62	155	310
401-45	32	45	92	144	235	183	54	34	55	28	39	52	93	233	465
401-53	38	53	110	170	275	216	64	41	65	33	47	59	130	325	650
401-62	44	62	127	198	320	250	74	47	75	38	54	70	172	430	860
401-70	50	70	144	224	365	289	84	53	85	43	62	76	220	550	1100

Pins						
Dimensions (mm)						
Catalog Number	M	N	P (dia)	R (dia)	S	T
401-20P	15	24	34	12	84	6
401-22P	16	27	35	13	91	6
401-28P	21	34	44	17	110	8
401-36P	27	44	54	22	136	8
401-45P	33	54	66	27	164	9
401-53P	40	64	76	32	190	9
401-62P	46	74	92	37	218	13
401-70P	52	84	102	42	244	13

#### Dimensional Notes:

- Dimension tolerances:

Bar Size A: + 5%, - 0%

Pin diameter G: + 0%, - 2.5%

Hole diameter C: + 2.5%, - 0%

Other dimensions: ± 2.5%

- Pin must pass freely through holes in shackle during assembly

- Pins shall be straight with no curvature. Head and pin body shall be concentric

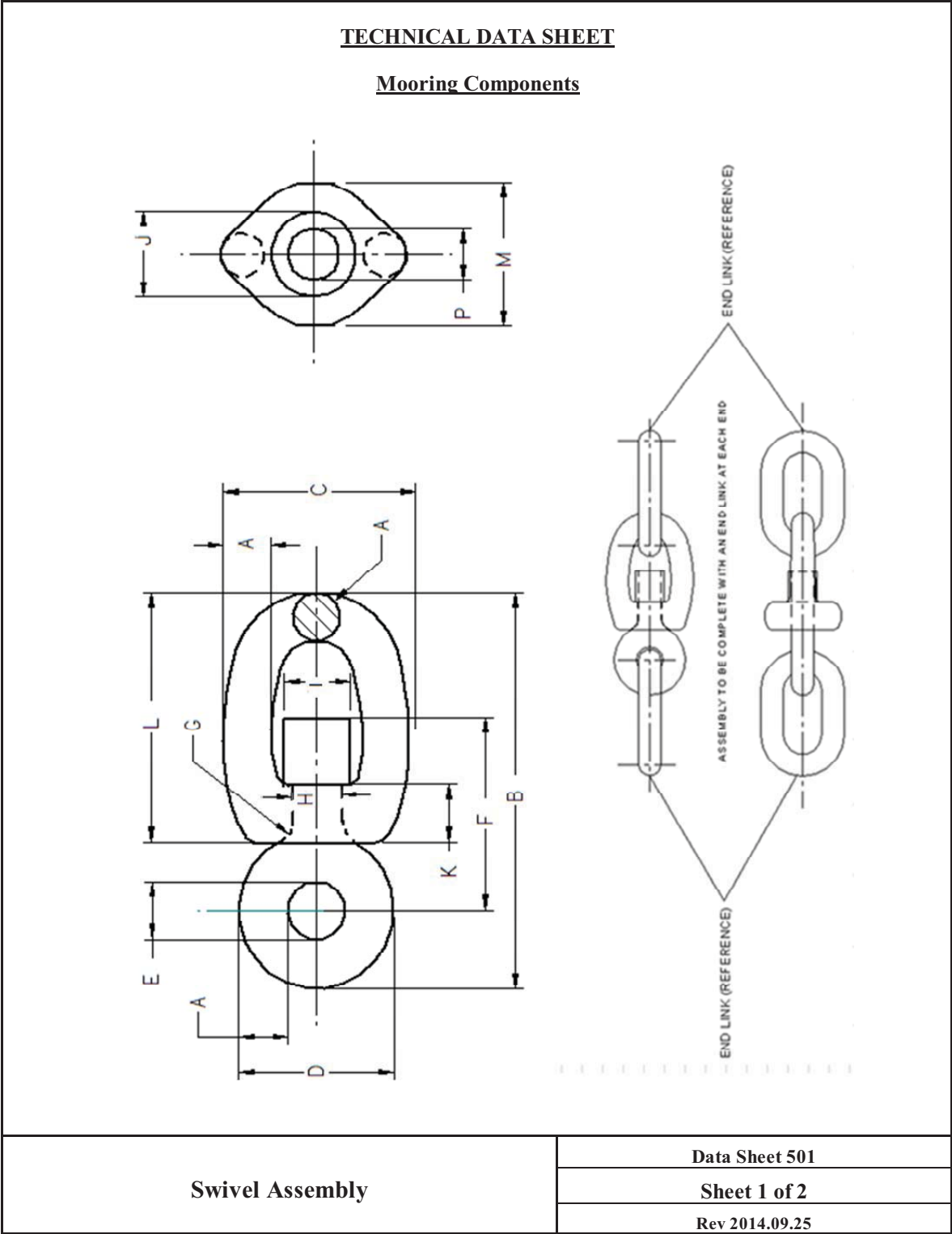
- Remove all sharp edges and burrs

#### Material Notes:

- Welded pin construction will not be accepted

- All shackles and pins shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 401</b>
<b>Clinch Shackle</b>	<b>Sheet 2 of 2</b>
	<b>Rev 2014.09.25</b>



## TECHNICAL DATA SHEET

### Mooring Components

Swivel Assembly												
Swivel												
Dimensions (mm)												
Catalog Number	For use with chain diameter	Bar Size A	B	C	D (dia)	E	F	G (rad)	H (dia)	J (dia)	K	L
501-18	14	18	151	70	62	26	73	13	18	41	23	96
501-20	16	20	168	78	69	29	81	14	20	46	25	106
501-24	20	24	230	93	80	32	97	16	24	48	30	127
501-32	26	32	269	124	104	40	129	17	32	60	40	170
501-38	32	38	319	148	122	46	154	18	38	68	48	202
501-46	38	46	387	179	146	54	186	19	46	78	58	244
501-53	44	53	445	206	169	63	214	19	53	90	67	281
501-60	50	60	504	233	192	72	242	25	60	102	76	318
Dimensions (mm)										Proof and Breaking Loads (kN)		
Catalog Number	M(dia)	I	P(dia)				End Link.			Safe Working Load	Proof Load	Breaking Load
501-18	54	25	21				102-18			18	45	90
501-20	60	29	23				102-20			24	60	120
501-24	72	33	27				102-24			37	93	185
501-32	96	45	35				102-32			62	155	310
501-38	115	51	41				102-38			93	233	465
501-46	139	59	49				102-46			130	325	650
501-53	160	70	56				102-53			172	430	860
501-60	181	77	63				102-60			220	550	1100

**Dimensional Notes:**

- Swivel assembly includes two installed end links.

- Dimension tolerances:

Bar Size A: + 5%, - 0%

Other dimensions:  $\pm 2.5\%$

- All Endlinks to conform to Catalogue Number 102.

**Material Notes:**

- The swivel and all links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

- Clearance between eyepiece and swivel shall not exceed 1 mm

- The swivel pin is to be formed by Upsetting or Forged with Eye-Piece.

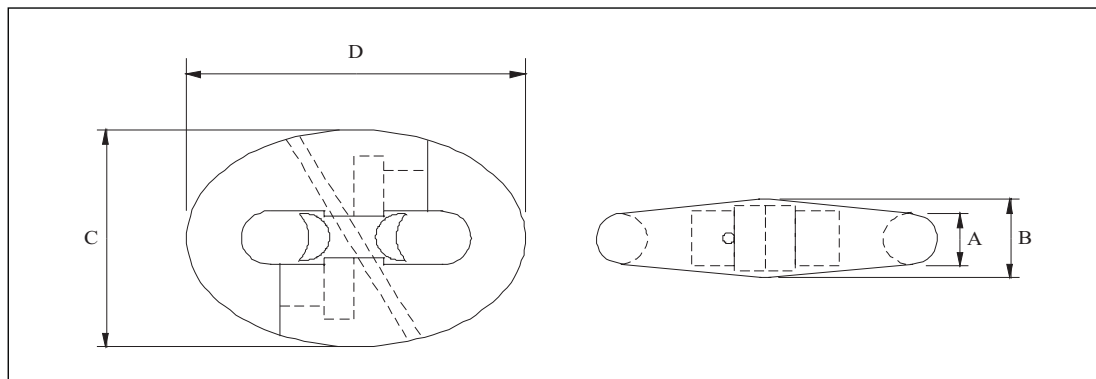
Threading and Pinning will not be acceptable.

- Remove all sharp edges and burrs

	<b>Data Sheet 501</b>
<b>Swivel Assembly</b>	<b>Sheet 2 of 2</b>
	<b>Rev 2014.09.25</b>

## TECHNICAL DATA SHEET

### Mooring Components



Catalog Number	Dimensions (mm)				Proof and Breaking Loads (kN)		
	Bar Size A	B	C	D	Safe Working Load	Proof Load	Breaking Load
601-14	16.8	25.2	70	99	9	45	90
601-20	24	36	100	142	19	93	185
601-26	31.2	46.8	130	184	31	155	310
601-32	38.4	57.6	160	227	47	233	465
601-38	45.6	68.4	189	269	65	325	650
601-44	52.8	79.2	219	312	86	430	860
601-50	60	90	249	354	110	550	1100

#### Dimensional Notes:

- Dimension tolerances:  
Bar Size A: + 5%, - 0%  
Other dimensions:  $\pm 2.5\%$
- Fabrication tolerances dimensions:  $\pm 2.5\%$
- Remove all sharp edges and burrs

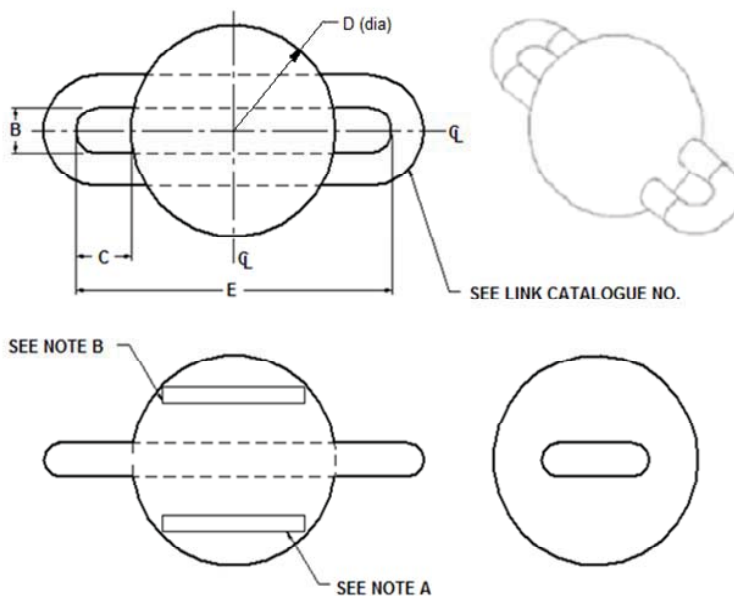
#### Material Notes:

- All links shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.

	<b>Data Sheet 601</b>
<b>"Kenter" Detachable Link</b>	<b>Sheet 1 of 1</b>
	Rev 2014.09.25

## TECHNICAL DATA SHEET

### Mooring Components



Catalog Number	Weight (kg)	Dimensions (mm)				
		Link Catalog No.	B	C	D (ref)	E
701-0025	25	105-32	76	103	174	380
701-0050	50			75	230	
701-0075	75	105-44	100	156	252	565
701-0100	100			140	285	
701-0200	200			98	370	
701-0400	400	105-60	100	186	462	835
701-0750	750			127	580	
701-1000	1000			96.5	642	

#### Dimensional Notes:

- Dimension tolerances:
  - Bar Size A: + 5%, - 0%
  - Weight Tolerance: + 5.0%, - 2.5%
  - Other dimensions: ± 2.5%

#### Material Notes:

- The link shall be manufactured with material meeting the requirements of Lloyd's Register Grade U2 rolled steel bar.
- The balls shall be manufactured with cast iron
- Note A: Manufacturer ID (ABCD), Batch Number (BN (XXXX) and Year Date (ex. 2010 ) in raised cast lettering 25 mm.
- Note B: Mass given in Kilograms in raised cast letters 50 mm high.
- All dimensions to be symmetrical about center lines.

	Data Sheet 701
Counterweight	Sheet 1 of 1
	Rev 2014.09.25



Pêches et Océans  
Canada

Fisheries and Oceans  
Canada

57-013-000-EU-TE-001

Garde côtière  
canadienne

Canadian  
Coast Guard

# *Serrated Cast Iron Anchors & Sinkers*



*Canadian Coast Guard*  
*Technical Specification*

Canada 

**Published under the Authority of:**

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SPECIFICATION

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## Document Management

### 1. Authority

This document is issued by the Director General, Integrated Technical Services, CCG's National Technical Authority under delegation from the Deputy Minister, Fisheries and Oceans and the Commissioner of the Canadian Coast Guard.

### 2. Responsibility

- a) Director, Maritime and Civil Infrastructure (ITS) is responsible for:
  - i) the creation and promulgation of the document; and
  - ii) the identification of an Office of Primary Interest (OPI) who is responsible for the coordination and the content of the document.
- b) The OPI is responsible for:
  - i) the validity and accuracy of the content;
  - ii) the availability of this information;
  - iii) the update as needed;
  - iv) the periodical revision; and
  - v) the follow-up of all requests, comments and/or suggestions received by the originator.

### 3. Inquiries and/or Revision Requests

All inquiries regarding this document, including suggestions for revision and requests for interpretation shall be addressed to the OPI:

Position Title: Manager, Maritime and Civil Infrastructure  
Address: 200 Kent, Street, 7W106  
Ottawa, ON  
K1A 0E6

All requests should:

- i) be clear and concise; and
- ii) reference the specific Chapter, Section, Figure or Table.

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## **Chapter 1    GENERAL**

---

### **1.1        PURPOSE**

This specification states the manufacture, testing and inspection requirements of the Department of Fisheries and Oceans, Canadian Coast Guard for Serrated Cast Iron Anchors & Sinkers for use on Navigational Buoys for Marine Navigational Purposes.

### **1.2        PRIORITY OF DOCUMENTS**

In the event of any conflict in documents or drawings associated with ordering requirements, the following order of priorities shall prevail:

- c)      the contract;
- d)      the specification; and
- e)      the drawings.

In the event of any conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been specified.

### **1.3        REFERENCED DOCUMENTS**

The documents listed in this section form a part of this specification to the extent referenced herein. While every effort has been made to ensure completeness of the list, document users are cautioned that they must meet all specified requirements cited in Chapter 2 and Chapter 3 of this specification.

**Table 1-1:      Referenced Standards for Anchors**

- |   |                 |  |
|---|-----------------|--|
| 1 | Lloyds Register | Lloyd's Register Rules and Regulations, Rules for the Manufacture, Testing and Certification of Materials (July 2014.) |
|---|-----------------|--|

**Table 1-2:      Referenced CCG Standards**

- |   |                      |   |
|---|----------------------|---|
| 1 | 57-013-000-EU-TE-003 | Mooring Hardware for Aids to Navigation |
|---|----------------------|---|

## **1.4 REFERENCED DRAWINGS**

The Anchors & Sinkers shall be sized and formed in accordance with the relevant Drawing(s) listed below

- |   |            |   |
|---|------------|---|
| 1 | Appendix A | HM00002-E010-DO: CCG Serrated Sinkers - forms a part of this specification. |
| 2 | Appendix B | HM00001-E010-DO: CCG Serrated Anchors - forms a part of this specification. |

## **1.5 SOURCE OF DOCUMENTS**

Documents may be obtained from the following sources:

### **1.5.1 Canadian Government Documents**

Canadian General Standards Board (CGSB)	CGSB Sales Centre Place du Portage III - 6B1, 11 Laurier Street, Gatineau, (Quebec) K1A 1G6
---	--

### **1.5.2 Industry Documents**

Canadian Standards Association (CSA)  
5060 Spectrum Way, Suite 100  
Mississauga, Ontario L4W 5N6

International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA)  
20 ter Rue Schnapper  
78100 St Germain-en-Laye  
France

Lloyd's Register Rules and Regulations for the Classification of Ships, Part 2,  
Rules for the Manufacture, Testing and Certification of Materials (LR Rules Part 2)  
71 Fenchurch St, London  
United Kingdom

## **Chapter 2    REQUIREMENTS**

---

### **2.1        GENERAL**

All serrated cast iron anchors and sinkers shall consist of a main cast body and a cold rolled steel lifting link in accordance with the drawings as shown in Appendix A and B.

### **2.2        PATTERN MOULDS**

The Contractor shall design, construct and maintain the pattern moulds for use in fabricating the anchors or sinkers. These mould patterns shapes shall result in anchors or sinkers conforming to the dimensions and tolerances shown on the drawings.

### **2.3        MATERIAL SPECIFICATIONS**

#### **2.3.1     Anchor/ Sinker body**

The anchor or sinker body shall be made from one uniform continuous pour of grey cast iron conforming to the Lloyd's Register Chapter 7, Sections 1,2 & 3. The introduction of wrought steel structural shapes or other foreign material during the casting process with exception of the lifting link shall not be permitted.

#### **2.3.2     Lifting Link**

The lifting link shall be made from new U2 steel round bar material conforming to Lloyd's Register Chapter 3, Section 9.

### **2.4        HEAT TREATMENT**

A Thermal history report shall be produced for the batch. Heat treatment is to be in accordance with the Lloyds rules. The lifting link is to be evenly heated to 200°C prior to the pouring of the cast iron so that no undue shrinkage stresses can arise in the cast iron



## **2.5 CERTIFICATES OF CONFORMANCE**

In accordance with the Lloyd's Register Rules and Regulations the manufacturer is to provide a Certificate of Conformity issued by Lloyd's Register that all sinkers and anchors conform to this specification, drawings and standards. Additionally the manufacturer shall also include the following original information:

- Mill Certificate, for stock steel used (Lifting link only)
- Heat Treatment Thermal History Report (Lifting link only)
- Tensile Test Report / Certificate (Lifting link and casting)
- Brinell Hardness Test Report / Certificate (Lifting link and casting)

Separate reports / certificates supplied must be traceable to the Certificate of Conformity.

A maximum of 25 sinkers of the same size, type and material may be covered by one certificate.

Upon delivery, an Inspector may visually inspect the sinkers; any sinker found not complying with the requirements of this specification may be subject to rejection

## **Chapter 3    DESIGN**

---

### **3.1      ANCHOR/SINKER BODY**

The anchor / sinker body shall be in accordance with the dimensions and tolerances shown on the drawing in Appendix A and B.

### **3.2      ANCHOR/SINKER LIFTING LINK**

The anchor/ sinker shall conform to the dimensions and tolerances shown on the drawing and shall be cast into the anchor body so that the anchor body and anchor link form a single unit. All lifting links shall conform to the dimensions and tolerances as specified in CCG document 57-013-000-EU-TE-003 *Mooring Hardware for Aids to Navigation*.

#### **3.2.1    Impact Strength**

The anchor/sinker lifting link shall be capable of withstanding the impact tests as specified in Appendix C.

### **3.3      WEIGHT**

Each anchor/sinker shall indicate the nominal weights and conform to the tolerances as indicated in Appendix A and B respectively.

### **3.4      SURFACES**

Anchors/sinker surfaces shall be free of adhering sand, scale and any other foreign material. Surfaces shall be smooth and free from defects or protrusions which might adversely affect the serviceability and handling of the anchors. Surfaces may be repaired by grinding where required. Anchors shall not be painted or coated.

### 3.5 CAST MARKINGS

The following markings shall be cast into the anchor / sinker body in raised block letters as indicated on the drawing in Appendix A and B.

- Anchor/Sinker's Nominal Weight (xxxx KG),
- Manufacturer ID (ABCD) in raised cast letters in Arial Font,
- Batch Number (BN:(XXXX))
- Year of Manufacture

Painting or stencilling shall **not** be used.

### 3.6 FINISH

After casting all surface slag and projecting edges are to be removed. All sharp edges are to be ground and the casting left clean and true to shape.

## **Chapter 4      QUALITY ASSURANCE, INSPECTION & TESTING**

---

All components and assemblies shall be manufactured using the Lloyd's Register Manufacturer rules and accordingly the manufacturer shall have a certified quality assurance program in place as per LR Rules.

### **4.1      INSPECTIONS AND TESTS**

The Contractor shall perform all inspections and tests necessary to ensure that the anchors/ sinkers submitted to the Coast Guard conform to the requirements of this specification. The Contractor shall correct all defects found during these inspections and tests, and shall eliminate the cause of the defects from the anchor production process.

### **4.2      MATERIAL INSPECTION**

The Contractor shall ensure that all materials used in the anchors / sinkers conform to the requirements of this specification. At the time of final inspection, the Contracting Officer's Technical Representative, hereafter referred to as the COTR, will verify conformance. Anchors or sinkers built with incorrect materials will be rejected as per Section 2.5.

### **4.3      WEIGHT**

The Contractor shall ensure that each anchor /sinker offered conforms to the requirements of paragraph 3.3.

### **4.4      BATCH TESTING**

The Contractor shall perform an impact test, in the presence of the COTR. The sample of anchors or sinkers will be chosen from the same batch of the same mass. A sample size of up to 20% will be chosen from each batch for each anchor / sinker size chosen at random by the COTR. The Contractor shall perform the test as described in Appendix C.

### **4.5      TRACEABILITY**

The contractor shall maintain the traceability of steel throughout the manufacturing, testing and inspection process for all mooring components. Each mooring component shall be traceable to the heat of steel from which it was made through the batch number.

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## **Chapter 5    PACKAGING AND MARKING**

---

### **5.1        PACKAGING**

The Contractor shall ensure that all the anchors and sinkers arrive at their destination undamaged.

### **5.2        MARKINGS**

All anchors and sinkers shall be tagged with a metal shipping tag indicating the following: name and address of the consignee, contract number, contract item number, lot number, batch number, quantity contained, size, grade of material and name of manufacturer / contractor.

### **5.3        MATERIAL CERTIFICATES**

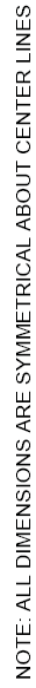
The contractor shall furnish to the COTR, Lloyd's material certificates from the steel mill for each heat of steel used in the manufacture of mooring components. The certificate shall indicate the heat number, steel grade, chemical composition, yield stress, tensile strength, elongation and quantity of steel represented by the certificate. These material certificates shall be provided to the COTR prior to the final inspection.

### **5.4        TEST CERTIFICATES**

The contractor shall furnish to COTR, test certificates of each batch tested in accordance with the Free Fall Impact and Hammer test as specified in Section 5. These test certificates shall be provided to the COTR prior to the final inspection.

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## Appendix A CAST IRON SERRATED SINKERS





REVISION HISTORY										
REV	DESCRIPTION	DATE	APPROVED							

Catalog Number	Weight (kg)	Link Catalog	A	B	C	D	E	F	G	H	I	J
703-0060	60	105-14	60	150		50	300	180	20	35	150	20
703-0100	100			160		57	400	220		40	200	
703-0200	200	105-26	80	195	45	75	500	280	30	50	250	30
703-0400	400			250		90	650	350		65	325	
703-0600	600			285		100	750	400		75	375	
703-0800	800	105-38	120	310	75	116	800	445	50	80	400	60
703-1000	1000			335		130	850	480		85	425	
703-1500	1500			380		140	1000	500		100	500	
703-2000	2000			425		155	1100	600		110	550	
703-3000	3000	105-50	160	490	120	175	1250	690	80	125	625	90
703-3500	3500			505		195	1300	730		130	650	
703-4000	4000			540		200	1350	760		135	675	

NOTES

A: Manufacturer ID (ABCD), Batch Number BN(XXXX), Year Date (eg.2010) in raised 25 mm Arial Font lettering.  
B: Mass of Sinker (KG) in raised 50 mm Arial Font lettering

TOLERANCES

Weight: + 5.0%, -0%.

DRAWN	NAME	DATE	Canadian Coast Guard	Garde cdtiere canadienne
CHECKED	T. Maso	12/13/2010		
ENG APPR				
MG APPR				
CCG Serrated Sinker Assy.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS				
SCALE 2 PL #00X3 PL #000X				
SHEET 2 OF 2				



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First Edition – July 2011

REV		REVISION		DATE		APPROVAL	

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## Appendix C TEST PROCEDURE

The following test shall be performed per each lot.

### C.1.1 Free Fall Impact Test

#### Step 1 - Visual Inspection

Anchors/sinkers shall be visually inspected in the area where the lifting link emerges out of the cast body. The two areas to be inspected shall consist of a 360 degree circumferential check of the lifting link where it emerges out of the cast body. Any significant rust or dirt shall be cleaned prior to inspection.

#### Step 2 – Drop Test and Inspection

Anchors/sinkers shall be dropped from a height of 2 meters onto a hard surface. Two meters measured from underside of unit to top of hard surface\*\*. The anchor/sinker shall be re-examined as defined in step 1 of C.1.1 above

### C.1.2 Hammer Blow Test

#### Step 1 – Hammer Blow test #1

Using a 10lb (4 kg) sledge.

Each anchor/sinker lifting link shall receive a sideways blow delivered perpendicular to the apex of the arc (see figure 1 below). After this hammer blow the lifting link shall be examined as defined in Step 1 of C.1.1 above. The lifting link may bend slightly but must not break nor exhibit cracks after the test.

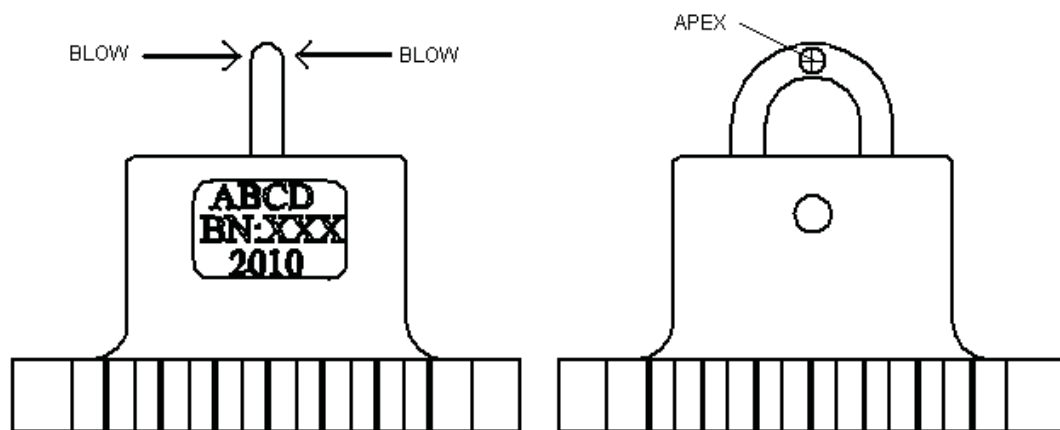


Figure 1: Sideway blow to Apex of lifting link

### **Step 1 – Hammer Blow test #2**

Using the same sledge hammer the lifting link shall again receive a hammer blow on the opposite side of Blow test #1. Once again the lifting link shall be re-examined as defined in Step 1 of C.1.1 above

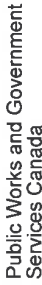
### **C.1.3 Pass / Fail Criteria**

If the lifting eye exhibits any fracturing, cracks, flaws, or deformation during this test it will be rejected. Although bending of the lifting link is permissible, no cracks will be allowed.

If at any point during the testing any portion of the cast body breaks free and is greater then 2.5 % of the total anchor/sinker mass, it will be rejected.

If at the end of the testing the above conditions are not found then the anchor or sinker will be deemed suitable for use and the COTR will issue a certificate of compliancy for these items.

\*\* The hard surface will consist of a minimum 20mm thick steel plate over concrete or asphalt.

Travaux publics et Services  
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**Annex H**  
**/ à F7047-140073**

**Claim for Exchange Rate Adjustments**  
**Demande de rajustement du taux de change**

PWGSC - TPSGC 450 (10/2013)



## Instructions

### Where:

$i_0$  = initial exchange rate (CAN\$ per unit of foreign currency [e.g. US\$1])

$i_1$  = exchange rate for adjustment purposes (CAN\$ per unit of foreign currency [e.g. US\$1])

### Instructions to bidders:

1. Bidders must complete columns (1) to (4) at time of bidding, for each line item where they want to invoke the exchange rate fluctuation provisions.
2. Where bids are evaluated in Canadian dollars, the dollar values provided in column (3) should also be in Canadian dollars, so that the adjustment amount is in the same currency as the payment.

### Instructions for Payment:

1. This form must be submitted with the invoice for payment with respect to all items with an FCC. Complete columns (1) through (7). Columns (8) and (9) will auto complete.
2. Suppliers should submit a separate calculation sheet for each invoice submitted showing the exchange rate adjustment for all line items with an FCC.
3. This form must be provided with all invoices where the exchange rate fluctuates more than 2% (increase or decrease), (i.e.  $\text{abs}[(i_1 - i_0) / i_0] > .02$ ), unless otherwise stated in the contract.

### Étant entendu que :

$i_0$  = Facteur de conversion du taux de change initial (\$ CA par unité de devise étrangère [p. ex. 1 \$ US])

$i_1$  = Taux de change aux fins du rajustement (\$ CA par unité de devise étrangère [p. ex. 1 \$ US])

### Instructions aux soumissionnaires :

1. Les soumissionnaires doivent remplir les colonnes (1) à (4) au moment de présenter leur soumission, pour chacun des produits pour lesquels ils veulent se prévaloir des dispositions relatives à la fluctuation du taux de change.
2. Lorsque les soumissions sont évaluées en dollars canadiens, les montants en dollars indiqués dans la colonne (3) doivent également être en dollars canadiens, de sorte que le montant du rajustement soit indiqué dans la même devise que pour le paiement.

### Instructions relatives au paiement :

1. Le présent formulaire doit accompagner la facture en vue du paiement pour chaque article comportant un montant en monnaie étrangère. Il faut remplir les colonnes (1) à (7). Les colonnes (8) et (9) seront remplies automatiquement.
2. Les fournisseurs doivent présenter une feuille de calcul séparée pour chaque facture et indiquer le rajustement du taux de change pour chaque article comportant un montant en monnaie étrangère.
3. Le présent formulaire doit accompagner toutes les factures pour lesquelles la fluctuation du taux de change est supérieure à 2% (augmentation ou diminution), (c. -à-d.  $\text{abs}[(i_1 - i_0) / i_0] > .02$ ), à moins d'indication contraire dans le contrat.