

Bid Fax: (819) 997-9776

Offre à commandes principale et nationale (OCPN)

Comments - Commentaires

Raison sociale et adresse du fournisseur/de l'entrepreneur

Marine Emergency Response Division/Division des
Interventions en cas d'urgence maritime
Centennial Towers 7th Floor - 7W11
200 Kent Street
Ottawa
Ontario
K1A0S5

Title - Sujet AToN: Plastic Buoys(RFSO)	
Solicitation No. - N° de l'invitation F7047-231212/B	Date 2024-03-28
Client Reference No. - N° de référence du client F7047-231212	GETS Ref. No. - N° de réf. de SEAG PW-\$ERD-008-29331
File No. - N° de dossier 008erd.F7047-231212	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2024-04-30 Heure Avancée de l'Est HAE	
Delivery Required - Livraison exigée See Herein – Voir ci-inclus	
Address Enquiries to: - Adresser toutes questions à: Bakhos, Maya	Buyer Id - Id de l'acheteur 008erd
Telephone No. - N° de téléphone (613)292-3550 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: <div>Specified Herein Précisé dans les présentes</div>	
Security - Sécurité 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

This request for standing offers (RFSO) cancels and supersedes previous RFSO number F7047-231212/A dated December 22, 2023 with a closing of March 1st, 2024 at 2:00p.m EST.

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F7047-231212
Client Ref. No. - N° de réf. du client
F7047-231212-008ERD

Amd. No. - N° de la modif.
File No. - N° du dossier
F7047-231212-008ERD

Buyer ID - Id de l'acheteur
008ERD
CCC No./N° CCC - FMS No./N° VME

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PART 1 – GENERAL INFORMATION

1.1 Introduction

The Request for Standing Offers (RFSO) is divided into seven 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 and Additional Information: includes the certifications and additional information to be provided;
Part 6	Security, Financial and Insurance Requirements: includes specific requirements that must be addressed by offerors; and
Part 7	7A, Standing Offer, and 7B, Resulting Contract Clauses: 7A, includes the Standing Offer containing the offer from the Offeror and the applicable clauses and conditions; 7B, 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 :

- Annex A- the Statement of Work
- Annex B- the Technical Specification of Requirements
- Annex C- the Basis of Payment
- Annex D- Technical Evaluation
- Annex E- the Electronic Payment Instruments
- Annex F- Integrity Provision
- Annex G- Reporting Requirement

1.2 Summary

Public Services and Procurement Canada has a requirement for the supply and delivery of Plastic Buoys upon call-up by individual government department.

The buoy types include:

1. Small Spar with hull diameters of 0.25 to 0.38 metres (see Appendix A.2.1),
2. Small Marker with hull diameters of 0.35 to 0.55 metres (see Appendix A.2.2),

3. Medium Spar with hull diameters of 0.50 to 0.70 metres (see Appendix A.2.3),
4. Medium Marker with hull diameters of 0.70 to 0.80 metres (see Appendix A.2.4),
5. River Buoy with hull diameters of 0.75 to 1.30 metres (see Appendix A.2.5),
6. Low Draft River Buoy with a hull diameter of 1.0 metre (see Appendix A.2.6),
7. Medium-Large Marker with hull diameters of 0.8 to 1.0 metres (see Appendix A.2.6),
8. Large Marker with hull diameters of 1.1 to 1.3 metres (see Appendix A.2.7), and
9. Pillar Buoy with hull diameters of 1.4 to 1.5 metres (see Appendix A.2.8)
10. Funnel Buoy with hull diameters of 0.8 to 1.0 metres (see Appendix A.2.9)

Principal delivery points are those listed in Annex C - Basis of Payment. There may be an occasional request for an alternate location within Canada.

The period for making call-ups against the Standing Offer is from the date of Standing Offer award to 2 (two) years beyond that date, inclusive; and

the period during which the Standing Offer is extended, if Canada chooses to exercise the options set out in the Standing Offer.

See Annex A Statement of Work and Annex B Technical Statement of Requirement for full technical details.

- 1.2.1** The Request for Standing Offers (RFSO) is to establish a National Master Standing Offer for the requirement detailed in the RFSO, to the Identified Users across Canada, excluding locations within Yukon, Northwest Territories, Nunavut, Quebec, and Labrador that are subject to Comprehensive Land Claims Agreements (CLCAs). Any requirement for deliveries to locations within CLCAs areas within Yukon, Northwest Territories, Nunavut, Quebec, or Labrador will have to be treated as a separate procurement, outside of the resulting standing offers.
- 1.2.2** This RFSO allows offerors to use the CPC Connect service provided by Canada Post Corporation to transmit their offers electronically. Offerors must refer to Part 2 of the RFSO entitled Offeror Instructions and Part 3 of the RFSO entitled Offer Preparation Instructions, for further information on using this method.
- 1.2.3** The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), the Canada-United Kingdom Trade Continuity Agreement (Canada-UK TCA), and the Canadian Free Trade Agreement (CFTA). Procedural requirements of the other international trade agreements such as Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) will be fulfilled following compliance to the procedural requirements of the WTO-AGP.

1.3 Security Requirements

There is no security requirement applicable to the Standing Offer.

1.3.1 Environmentally Preferable Packaging

The Bidder/Offeror/Supplier should meet the environmentally preferable packaging specifications for this procurement, as indicated in the Statement of Work (SOW) .

In accordance with the Policy on Green Procurement and the Government of Canada actions on plastic waste in federal operations, the Government of Canada is committed to promoting the procurement of environmentally preferable plastic products and the reduction of associated plastic packaging waste to protect the environment by including environmentally preferable packaging specifications.

All packaging material related to this requirement, except for excluded material and specialized packaging as defined below, should be reusable, returnable, or recyclable in accordance with the definitions set forth in the Supply Manual Glossary.

Excluded material

Environmentally preferable material alternatives in packaging tape are not widely available. As a result, packaging tape is considered to be excluded from the environmentally preferable packaging specifications until the market has progressed and studies become available to determine otherwise.

Specialized packaging

Packaging can be considered "specialized" if the intended use of the packaging requires technical performance specifications with no environmentally preferable alternatives. For example, when transporting hazardous materials, if there is a need for a specific density of materials, or if they must be temperature controlled.

1.4 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.

1.5 Anticipated migration to an e-Procurement Solution (EPS)

Canada is currently developing an online EPS for faster and more convenient ordering of goods and services. In support of the anticipated transition to this system and how it may impact any resulting Standing Offer that is issued under this solicitation, refer to 7.15 Transition to an e-Procurement Solution (EPS).

The Government of Canada's [press release](#) provides additional information.

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 (2023-06-08) Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the RFSO.

Subsection 5.4 of 2006, Standard Instructions - Request for Standing Offers - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days

Insert: 90 days

2.1.1 Technical Difficulties of Offer Transmission

This section applies despite anything to the contrary in this solicitation or the Standard Instructions

Where a Offeror has commenced transmission of its offer through an electronic submission method (i.e. Canada Post Corporation's (CPC) Connect service) in advance of the offer solicitation closing date and time, but due to technical difficulties, Canada was unable to receive or decode the entirety of the offer by the deadline, Canada may nonetheless accept the entirety of the offer received after the offer solicitation closing date and time, provided that the Offeror can demonstrate the following:

- (i) The offeror contacted Canada in advance of the offer solicitation closing date and time to attempt to resolve its technical difficulties; OR
- (ii) The electronic properties of the Offer documentation clearly indicate that all components of the Offer were prepared in advance of the offer solicitation closing date and time.

2.1.2 Completeness of the Offer

After the closing date and time of this offer solicitation, Canada will examine the Offer to determine completeness. The review for completeness will be limited to identifying whether any information submitted as part of the offer can be accessed, opened, and/or decoded. This review does not constitute an evaluation of the content, will not assess whether the Offer meets any standard or is responsive to all solicitation requirements, but will be solely limited to assessing completeness. Canada will provide the Offeror with the opportunity to submit information found to be missing or incomplete in this review within two business days of notice.

Specifically, the offer will be reviewed and deemed to be complete when the following elements have been submitted by the offeror:

1. That certifications and securities required at offer closing are included.
2. That offers are properly signed, that the offeror is properly identified.
3. Acceptance of the terms and conditions of the offer solicitation and resulting contract.
4. That all documents created prior to offer closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.
5. All certifications, declarations and proofs created prior to closing but due to technical difficulties Canada was unable to receive them, have been properly submitted and received by Canada.

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 in the RFSO.

Note: Offerors using Canada Post Corporation's (CPC) Connect service for offers closing at the Bid Receiving Unit in the National Capital Region (NCR) the email address is:

tpsgc.pareceptiondessousmissions-apbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

Note: Offers will not be accepted if emailed directly to this email address. This email address is to be used to open an CPC Connect conversation, as detailed in Standard Instructions [2006](#), or to send offers through an CPC Connect message if the bidder is using its own licensing agreement for CPC Connect service.

Due to the nature of the Request for Standing Offers, transmission of offers by facsimile to PWGSC will not be accepted.

2.3 Enquiries - Request for Standing Offers

All enquiries must be submitted in writing to the Standing Offer Authority no later than (10) 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.

2.5 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential offerors to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages offerors to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:

-
- Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- (c) Offerors should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Offerors should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 3 - OFFER PREPARATION INSTRUCTIONS

3.1 Offer Preparation Instructions

Canada requests that the Offeror submits its offer in accordance with section 08 of the 2006 standard instructions. The CPC Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

Canada requests that the offer be gathered per section and separated as follows:

Section I: Technical Offer
Section II: Financial Offer
Section III: Certifications

Due to the nature of the RFSO, offers transmitted by facsimile will not be accepted.

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

In order to assist Canada in meeting the objectives of the [Policy on Green Procurement](#), when feasible Offerors should prepare and submit their offer as follows:

- 1) Include all environmental certification(s) relevant to your organization (such as ISO 14001, Leadership in Energy and Environmental Design (LEED), Carbon Disclosure Project, etc.).
- 2) Include all third party environmental certification(s) or Environmental Product Declaration(s) (EPD) specific to your product/service (such as Canadian Standards Association (CSA Group), Underwriters Laboratories (ULSolutions); Forest Stewardship Council (FSC), ENERGYSTAR, etc.).

Canada is committed to achieving net zero greenhouse gas (GHG) emissions by 2050 in an effort to position Canada for success in a green economy and to mitigate climate change impacts. As a result, future solicitations may include the following:

- there may be evaluation criteria or other instructions in the solicitation or contract documents related to measuring and disclosing your company's GHG emissions;
- you may be requested or required to join one of the following initiatives to submit a bid, offer or arrangement or if you are awarded the contract:
 - Canada's Net-Zero Challenge;
 - the United Nations Race to Zero;
 - the Science-based Targets Initiative;
 - the Carbon Disclosure Project;
 - the International Organization for Standardization;
- you may be required to provide other evidence of your company's commitment and actions toward meeting net zero targets by 2050.

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 the Annex "C" Basis of Payment

3.1.1 Electronic Payment of Invoices - Offer

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "E" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "E" Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

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

3.1.2 Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All offers including such provision will render the offer non-responsive.

Section III: Certifications Offerors must submit the certifications and additional information 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.
- (c) Canada will use the Phased Offer Compliance Process described below.

4.1.1 Phased Offer Compliance Process

4.1.1.1 (2018-07-19) General

- (a) Canada is conducting the POCP described below for this requirement.
- (b) Notwithstanding any review by Canada at Phase I or II of the POCP, Offerors are and will remain solely responsible for the accuracy, consistency and completeness of their Offer and Canada does not undertake, by reason of this review, any obligations or responsibility for identifying any or all errors or omissions in Offers or in responses by a Offeror to any communication from Canada.

THE OFFEROR ACKNOWLEDGES THAT THE REVIEWS IN PHASE I AND II OF THIS POCP ARE PRELIMINARY AND DO NOT PRECLUDE A FINDING IN PHASE III THAT THE OFFER IS NON-RESPONSIVE, EVEN FOR MANDATORY

REQUIREMENTS WHICH WERE SUBJECT TO REVIEW IN PHASE I OR II AND NOTWITHSTANDING THAT THE OFFER HAD BEEN FOUND RESPONSIVE IN SUCH EARLIER PHASE. CANADA MAY DEEM AN OFFER TO BE NON-RESPONSIVE TO A MANDATORY REQUIREMENT AT ANY PHASE.

THE OFFEROR ALSO ACKNOWLEDGES THAT ITS RESPONSE TO A NOTICE OR A COMPLIANCE ASSESSMENT REPORT (CAR) (EACH DEFINED BELOW) IN PHASE I OR II MAY NOT BE SUCCESSFUL IN RENDERING ITS OFFER RESPONSIVE TO THE MANDATORY REQUIREMENTS THAT ARE THE SUBJECT OF THE NOTICE OR CAR, AND MAY RENDER ITS OFFER NON-RESPONSIVE TO OTHER MANDATORY REQUIREMENTS.

- (c) The POCP does not limit Canada's rights under Standard Acquisition Clauses and Conditions (SACC) 2006 (2020-05-28) Standard Instructions – Goods or Services – Competitive Requirements nor Canada's right to request or accept any information during the solicitation period or after offer solicitation closing in circumstances where the offer solicitation expressly provides for this right, or in the circumstances described in subsection (c).
- (d) Canada will send any Notice or CAR by any method Canada chooses, in its absolute discretion. The Offeror must submit its response by the method stipulated in the Notice or CAR. Responses are deemed to be received by Canada at the date and time they are delivered to Canada by the method and at the address specified in the Notice or CAR. An email response permitted by the Notice or CAR is deemed received by Canada on the date and time it is received in Canada's email inbox at Canada's email address specified in the Notice or CAR. A Notice or CAR sent by Canada to the Offeror at any address provided by the Offeror in or pursuant to the Offer is deemed received by the Offeror on the date it is sent by Canada. Canada is not responsible for late receipt by Canada of a response, however caused.

4.1.1.2 (2018-03-13) Phase I: Financial Offer

- (a) After the closing date and time of this Offer solicitation, Canada will examine the Offer to determine whether it includes a Financial Offer and whether any Financial Offer includes all information required by the solicitation. Canada's review in Phase I will be limited to identifying whether any information that is required under the Offer solicitation to be included in the Financial Offer is missing from the Financial Offer. This review will not assess whether the Financial Offer meets any standard or is responsive to all solicitation requirements.
- (b) Canada's review in Phase I will be performed by officials of the Department of Public Works and Government Services.
- (c) If Canada determines, in its absolute discretion that there is no Financial Offer or that the Financial Offer is missing all of the information required by the Offer solicitation to be included in the Financial Offer, then the Offer will be considered non-responsive and will be given no further consideration.
- (d) For Offers other than those described in c), Canada will send a written notice to the Offerors ("Notice") identifying where the Financial Offer is missing information. A Offeror, whose Financial Offer has been found responsive to the requirements that are reviewed at Phase I, will not receive a Notice. Such Offerors shall not be entitled to submit any additional information in respect of their Financial Offer.
- (e) The Offerors who have been sent a Notice shall have the time period specified in the Notice (the "Remedy Period") to remedy the matters identified in the Notice by providing to Canada, in writing, additional information or clarification in response to the Notice. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the Notice.
- (f) In its response to the Notice, the Offeror will be entitled to remedy only that part of its Financial Offer which is identified in the Notice. For instance, where the Notice states that a required line item has been left blank, only the missing information may be added to the Financial Offer, except that, in those instances where the addition of such information will necessarily result in a change to other calculations previously submitted in its Financial Offer, (for example, the calculation to determine a total price), such necessary adjustments shall be identified by the Offeror and only these adjustments shall be made. All submitted information must comply with the requirements of this solicitation.
- (g) Any other changes to the Financial Offer submitted by the Offeror will be considered to be new information and will be disregarded. There will be no change permitted to any other Section of the Offeror's offer. Information submitted in accordance with the requirements of this solicitation in response to the Notice will replace, in full, only that part of the original Financial Offer as is permitted above, and will be used for the remainder of the offer evaluation process.
- (h) Canada will determine whether the Financial Offer is responsive to the requirements reviewed at Phase I, considering such additional information or clarification as may have been provided by

the Offeror in accordance with this Section. If the Financial Offer is not found responsive for the requirements reviewed at Phase I to the satisfaction of Canada, then the Offer shall be considered non-responsive and will receive no further consideration.

- (i) Only Offers found responsive to the requirements reviewed in Phase I to the satisfaction of Canada, will receive a Phase II review.

4.1.1.3 (2018-03-13) Phase II: Technical Offer

- (a) Canada's review at Phase II will be limited to a review of the Technical Offer to identify any instances where the Offeror has failed to meet any Eligible Mandatory Criterion. This review will not assess whether the Technical Offer meets any standard or is responsive to all solicitation requirements. Eligible Mandatory Criteria are all mandatory technical criteria that are identified in this solicitation as being subject to the POCP. Mandatory technical criteria that are not identified in the solicitation as being subject to the POCP, will not be evaluated until Phase III.
- (b) Canada will send a written notice to the Offeror (Compliance Assessment Report or "CAR") identifying any Eligible Mandatory Criteria that the Offer has failed to meet. A Offeror whose Offer has been found responsive to the requirements that are reviewed at Phase II will receive a CAR that states that its Offer has been found responsive to the requirements reviewed at Phase II. Such Offeror shall not be entitled to submit any response to the CAR.
- (c) A Offeror shall have the period specified in the CAR (the "Remedy Period") to remedy the failure to meet any Eligible Mandatory Criterion identified in the CAR by providing to Canada in writing additional or different information or clarification in response to the CAR. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the CAR.
- (d) The Offeror's response must address only the Eligible Mandatory Criteria listed in the CAR as not having been achieved, and must include only such information as is necessary to achieve such compliance. Any additional information provided by the Offeror which is not necessary to achieve such compliance will not be considered by Canada, except that, in those instances where such a response to the Eligible Mandatory Criteria specified in the CAR will necessarily result in a consequential change to other parts of the Offer, the Offeror shall identify such additional changes, provided that its response must not include any change to the Financial offer.
- (e) The Offeror's response to the CAR should identify in each case the Eligible Mandatory Criterion in the CAR to which it is responding, including identifying in the corresponding section of the original Offer, the wording of the proposed change to that section, and the wording and location in the Offer of any other consequential changes that necessarily result from such change. In respect of any such consequential change, the Offeror must include a rationale explaining why such consequential change is a necessary result of the change proposed to meet the Eligible Mandatory Criterion. It is not up to Canada to revise the Offeror's Offer, and failure of the Offeror to do so in accordance with this subparagraph is at the Offeror's own risk. All submitted information must comply with the requirements of this solicitation.
- (f) Any changes to the Offer submitted by the Offeror other than as permitted in this solicitation, will be considered to be new information and will be disregarded. Information submitted in accordance with the requirements of this solicitation in response to the CAR will replace, in full, only that part of the original Offer as is permitted in this Section.

- (g) Additional or different information submitted during Phase II permitted by this section will be considered as included in the Offer, but will be considered by Canada in the evaluation of the Offer at Phase II only for the purpose of determining whether the Offer meets the Eligible Mandatory Criteria. It will not be used at any Phase of the evaluation to increase any score that the original Offer would achieve without the benefit of such additional or different information. For instance, an Eligible Mandatory Criterion that requires a mandatory minimum number of points to achieve compliance will be assessed at Phase II to determine whether such mandatory minimum score would be achieved with such additional or different information submitted by the Offeror in response to the CAR. If so, the Offer will be considered responsive in respect of such Eligible Mandatory Criterion, and the additional or different information submitted by the Offeror shall bind the Offeror as part of its Offer, but the Offeror's original score, which was less than the mandatory minimum for such Eligible Mandatory Criterion, will not change, and it will be that original score that is used to calculate any score for the Offer.
- (h) Canada will determine whether the Offer is responsive for the requirements reviewed at Phase II, considering such additional or different information or clarification as may have been provided by the Offeror in accordance with this Section. If the Offer is not found responsive for the requirements reviewed at Phase II to the satisfaction of Canada, then the Offer shall be considered non-responsive and will receive no further consideration.
- (i) Only Offers found responsive to the requirements reviewed in Phase II to the satisfaction of Canada, will receive a Phase III evaluation.

4.1.1.4 (2018-03-13) Phase III: Final Evaluation of the Offer

- (a) In Phase III, Canada will complete the evaluation of all Offers found responsive to the requirements reviewed at Phase II. Offers will be assessed in accordance with the entire requirement of the offer solicitation including the technical and financial evaluation criteria.
- (b) A Offer is non-responsive and will receive no further consideration if it does not meet all mandatory evaluation criteria of the solicitation.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

The offeror is to complete Annex "D", Tables A1 and supply supporting documentation that will be used by the evaluators to demonstrate the performance and specifications of their proposed items.

The Phased Offer Compliance Process will apply to all mandatory technical criteria

4.1.1.2 Point Rated Technical Criteria

The offeror is to complete Annex "D", Tables B1 and supply supporting documentation that will be used by the evaluators to demonstrate the performance and specifications of their proposed items.

The Phased Offer Compliance Process **does NOT apply** to the rated technical criteria.

4.1.2 Financial Evaluation

- (a) The price of the offer will be evaluated in Canadian dollars, Applicable Taxes excluded, , Delivered Duty Paid (DDP) Destination Incoterms 2010, and customs duties included.

- (b) Offers will be evaluated for each of the ten categories separately. SO's will be issued on a *by category* basis.
- (c) Offerors can submit pricing on as many or as few categories as they wish by filling out the applicable pricing table(s) found in Annex C (Basis of Payment). In order to be considered for a particular Standing Offer, the offeror must provide a price for each item in the applicable pricing table(s) under that category in which they are offering.
- (d) The financial evaluation will be conducted by calculating the Evaluated Price per Category in accordance with Tables 1 to 10 provided in Annex C, Basis of Payment

Table 1 :

Category 1: $W1=(A*B)+(C*D)+(E*F)+(G*H)+(I*J)+(K*L)+(M*N)+(O*P)+(Q*R)+(S*T)+(U*V)$

This is repeated for W2 to W6

Evaluated Price Category 1 (W7)= the sum of $W1+W2+W3+W4+W5+W6$

Repeated in Table 2 -10

4.2 Basis of Selection

An offer must comply with the requirements of the Request for Standing Offers to be declared responsive. The responsive offer with the highest combined rating of technical merit and price in each category (as set out in Annex C – Basis of Payment) will be recommended for issuance of a standing offer.

4.2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, an offer must:

- comply with all the requirements of the offer solicitation; and
- meet all mandatory criteria; and
- obtain the required minimum of **20** points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of **40** points.

- Offers not meeting (a) or (b) or (c) will be declared non-responsive.
- The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be **50 %** for the technical merit and **50 %** for the price.
- To establish the technical merit score, the overall technical score for each responsive Offer will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of **50 %**.
- To establish the pricing score, each responsive Offer will be prorated against the lowest evaluated price and the ratio of **50 %**.
- For each responsive Offer, the technical merit score and the pricing score will be added to determine its combined rating.

7. Neither the responsive Offer obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive Offer with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three Offers are responsive and the selection of the contractor is determined by a **50/50** ratio of technical merit and price, respectively. The total available points equals 40 and the lowest evaluated price is \$45,000 (45).

The following is an Example of the Best Value Determination method.

Three valid offers are received; each is determined to be compliant to all Mandatory Requirements and is scored in the required management and technical areas.

This Best Value determination is based on a ratio of 50% for Technical Rated Criteria and 50% for the price breakdown factor.

A maximum of 50 points is possible for technical score on each type of buoy. Pricing will be based off the lowest sum of the Evaluated price over year 1, year 2 and option year 1.

Basis of Selection - Highest Combined Rating Technical Merit (50%) and Price (50%)

Pricing Score = Lowest Offer/Offer X)*50
Combined Rating= Technical Merit+ Pricing

The three Offers were scored as presented below:

Criteria	Offer #1	Offer #2	Offer #3
Technical Rated (Max 50 points)	20	25	40
Price (Max 50 points)	\$55 K	\$50 K	\$45 K

Sample Calculation:

		Offer #1	Offer #2	Offeror #3
Overall Technical Score		20/40	25/40	40/40
Offer Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$20/40 \times 50 = 25$	$25/40 \times 50 = 31.25$	$40/40 \times 50 = 50$
	Pricing Score	$45/55 \times 50 = 40.90$	$45/50 \times 50 = 27.5$	$45/45 \times 50 = 50.00$
Combined Rating		65.90	58.75	100
Overall Rating		2nd	3rd	1 st

In this sample calculation the contract would be awarded to Offer # 3- based on the highest total score taking into consideration technical and price

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

The certifications provided by offerors to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare an offer non-responsive, will have the right to set-aside a standing offer, or will declare a contractor in default 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 will render the offer non-responsive, result in the setting aside of the Standing Offer or constitute a default under the Contract.

5.1 Certifications Required with the Offer

Offerors must submit the following duly completed certifications as part of their offer.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.2 Certifications Precedent to the Issuance of a Standing Offer and Additional Information

The certifications and additional information listed below should be submitted with the offer but may be submitted afterwards. If any of these required certifications or additional information 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 provide the certifications or the additional information listed below within the time frame provided will render the offer non-responsive.

5.2.1 Integrity Provisions – Required Documentation

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

5.2.2 Federal Contractors Program for Employment Equity - 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" list) available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - 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 titled [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 Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

PART 6 - SECURITY, FINANCIAL AND INSURANCE REQUIREMENTS

6.1 Security Requirements

There are no security provisions associated with this requirement.

6.2 Insurance Requirements

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

PART 7 - STANDING OFFER AND RESULTING CONTRACT CLAUSES

A.STANDING OFFER

7.1 Offer

The Offeror offers to fulfill the requirement in accordance with the Statement of Work at Annex "A" ,the Technical Statement of Requirement at Annex "B" and the Annex "C" Basis Of Payment

7.2 Security Requirements

There is no security requirement applicable to the Standing Offer.

7.3 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.

7.3.1 General Conditions

[2005](#) (2022-12-01) General Conditions - Standing Offers - Goods or Services, apply to and form part of the Standing Offer.

7.3.2 Standing Offers Reporting

The Offeror must compile and maintain records on its provision of goods and services to Canada under contracts resulting from the Standing Offer. This data must include all purchases done by Canada, including those acquired and paid for by Canada acquisition cards.

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

- first quarter: April 1 to June 30
- second quarter: July 1 to September 30
- third quarter: October 1 to December 31
- fourth quarter: January 1 to March 31

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

7.4 Term of Standing Offer

7.4.1 Period of the Standing Offer

The period for making call-ups against the Standing Offer is from the date of Standing Offer award to 2 (two) years beyond that date, inclusive; and

the period during which the Standing Offer is extended, if Canada chooses to exercise the options set out in the Standing Offer.

7.4.2 Extension of Standing Offer

If the Standing Offer is authorized for use beyond the initial period, the Offeror offers to extend its offer for up to one (1) year period 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 Offeror will be advised of the decision to authorize the use of the Standing Offer for an extended period by the Standing Offer Authority 30 days before the expiry date of the Standing Offer. A revision to the Standing Offer will be issued by the Standing Offer Authority.

7.4.3 Comprehensive Land Claims Agreements (CLCAs)

The Standing Offer (SO) is for the delivery of the requirement detailed in the SO to the Identified Users across Canada, excluding locations within Yukon, Northwest Territories, Nunavut, Quebec, and Labrador that are subject to Comprehensive Land Claims Agreements (CLCAs). Any requirement for deliveries to locations within CLCAs areas within Yukon, Northwest Territories, Nunavut, Quebec, or Labrador will have to be treated as a separate procurement, outside of the standing offer.

7.4.4 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified in the call up against the Standing Offer.

7.4.4.1 Delivery Date

Delivery must be made by the delivery date stated in the call up against the Standing offer.

7.4.4.2 Shipping Instructions - Delivery at Destination

1. Shipment must be consigned to the destination specified herein and delivered DDP Delivered Duty Paid, Destination.
2. The Contractor is responsible for all delivery charges, administration, costs and risk of transport and customs clearance, including the payment of customs duties and taxes.

7.5 Authorities

7.5.1 Standing Offer Authority

The Standing Offer Authority is:

Maya Bakhos
Supply Officer
Public Works and Government Services Canada
Acquisitions Branch
Marine Charter Services Directorate
Marine Emergency Response Division
11 Laurier, Gatineau, QC J8X 4A6
Phone number: (873)-355-3085

E-mail: maya.bakhos@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, the Standing Offer Authority is responsible for any contractual issues relating to individual call-ups made against the Standing Offer by any Identified User.

7.5.2 Project Authority

The Project Authority for the Standing Offer is:

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____ - ____ - _____

Facsimile: ____ - ____ - _____

E-mail address: _____

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.

7.5.3 Offeror's Representative

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: ____ ____ _____

Facsimile: ____ ____ _____

E-mail address: _____

7.6 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.C., 1985, c. F-11.

7.7 Call-up Procedures

The identified user will issue a call-up against a Standing Offer each time goods are required.

7.8 Call-up Instrument

The Work will be authorized or confirmed by the Identified User(s) using the duly completed forms or their equivalents as identified in paragraphs 2 and 3 below, or by using Canada acquisition cards (Visa or MasterCard) for low dollar value requirements.

1. Call-ups must be made by Identified Users' authorized representatives under the Standing Offer and must be for goods or services or combination of goods and services included in the Standing Offer at the prices and in accordance with the terms and conditions specified in the Standing Offer.
2. Any of the following forms could be used which are available through [PWGSC Forms Catalogue](#) website:
 - PWGSC-TPSGC 942 Call-up Against a Standing Offer

7.9 Limitation of Call-ups

Individual call-ups against the Standing Offer must not exceed **\$400,000.00** (Applicable Taxes included).

7.10 Priority of Documents

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

- a) the call up against the Standing Offer, including any annexes;
- b) the articles of the Standing Offer;
- c) the general conditions [2005](#)(2022-12-01), General Conditions - Standing Offers - Goods or Services;
- d) the general conditions [2010A](#) (2022-12-01)
- e) Annex A, Statement of Work ;
- f) Annex B, Technical Statement of Requirement;
- g) Annex C, Basis of Payment ;
- h) the Offeror's offer dated _____.

7.11 Certifications and Additional Information

7.11.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Offeror with its offer or precedent to issuance of the Standing Offer (SO), and the ongoing cooperation in providing additional information are conditions of issuance of the SO and failure to comply will constitute the Offeror in default. 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.

7.11.2 Federal Contractors Program for Employment Equity - Setting aside

The Offeror understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Offeror and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Standing Offer. If the AIEE becomes invalid, the name of the Offeror will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC may result in the setting aside of the Standing Offer.

7.12 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 _____.

7.13 Transition to an e-Procurement Solution (EPS)

During the period of the Standing Offer, Canada may transition to an EPS for more efficient processing and management of individual call-ups for any or all of the SO's applicable goods and services. Canada reserves the right, at its sole discretion, to make the use of the new e-procurement solution mandatory.

Canada agrees to provide the Offeror with at least a three-month notice to allow for any measures necessary for the integration of the Offer into the EPS. The notice will include a detailed information package indicating the requirements, as well as any applicable guidance and support.

If the Offeror chooses not to offer their goods or services through the e-procurement solution, the Standing Offer may be set aside by Canada.

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.

7.1 Statement of Requirement

The Contractor must provide the items detailed in the call-up against the Standing Offer.

7.2 Standard Clauses and Conditions

7.2.1 General Conditions

[2010A](#) (2022-12-01), General Conditions - Goods (Medium Complexity) apply to and form part of the Contract.

7.3 Term of Contract

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

7.3.1 Period of the Contract

The period of the Contract is in accordance with the call-up against the Standing Offer

7.3.2 Delivery Date

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

7.4 Payment

7.4.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm unit prices, as specified in Annex C – Basis of Payment. Customs duties are included and the total amount of applicable taxes must be shown separately.

7.4.2 Electronic Payment of Invoices – Call-up

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

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

7.5 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.

Each invoice must be supported by:

- a. a copy of time sheets to support the time claimed;
 - b. a copy of the release document and any other documents as specified in the Contract;
 - c. a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
 - d. a copy of the monthly progress report.
2. Invoices must be distributed as follows:
The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

7.6 Insurance – No Specific Requirement

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

7.7 SACC Manual Clauses

SACC Manual clause [A1009C](#) (2008-05-12), Work Site Access

SACC Manual clause [B7500C](#) (2006-06-16), Excess Goods

SACC Manual clause [D5328C](#) (2014-06-26), Inspection and Acceptance

7.8 Warranty

7.8.1 Warranty - Modification - General Conditions 2010A

Section 09 entitled *Warranty of general conditions 2010A* is amended by deleting subsection 2 in its entirety and replacing it with the following:

The Contractor must pay the transportation cost associated with returning the Work or any part of the Work to the Contractor's plant for replacement, repair or making good. The Contractor must also pay the transportation cost associated with forwarding the replacement or returning the Work or part of the Work when rectified to the delivery point specified in the Contract or to another location as directed by Canada. If, in the opinion of Canada, it is not expedient to remove the Work from its location, the Contractor must carry out any necessary repair or making good of the Work at that location. In such cases, the Contractor will be responsible for all Costs (including travel and living expenses) incurred in so doing, Canada will not reimburse these Costs.

All other provisions of the warranty section remain in effect.

7.8.2 Warranty Period

Section 9 of general conditions 2010 A is amended by replacing the period of 12 month by revised warranty by 36 months.

All other provisions of the warranty section remain in effect.

7.9 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".



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Safety First, Service Always



ANNEX A STATEMENT OF WORK for Plastic Buoys

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Section 1 INTRODUCTION

1.1 OBJECTIVE

In accordance with the Canadian Coast Guard (CCG) mandate set out in the Canada Shipping Act, 2001, the CCG requires Plastic Buoys to support its short-range Aids to Navigation (AtoN) Program to provide safety in marine transportation and recreational boating. This Statement of Work (SoW) provides the requirements for the means of delivery, ordering, as well as auditing of the production of Plastic Buoys to support AtoN

1.2 BACKGROUND

The CCG deploys and maintains numerous types of buoys as floating aids to navigation (AtoNs) for the purpose of ensuring safety of navigation. Buoys are used to demarcate boundaries of traffic lanes and also to indicate obstacles to navigation, such as underwater rocks and shoals. The objective is to acquire the Plastic Buoys as outlined in Annex B Technical Statement of Requirement (TSoR) to support the AtoN Program as necessary. Fulfillment of this requirement will help to ensure safe and effective vessel transit in Canadian waters.

This Statement of Work (SoW) provides the requirements for the means of delivery, ordering, as well as auditing of the production of Plastic Buoys to support AtoN.

1.3 SCOPE

This Statement of Work (SOW) defines the requirement to develop a Standing Offer Agreement for two years with the option of one year, in order to supply and delivery of plastic navigation buoys. Annex B defines the Technical Statement of Requirements (TSoR) for Plastic Buoys for AtoN.

Section 2 REFERENCE DOCUMENTS

2.1 ANNEXES

The annex that supports this SoW is:

Annex B – Technical Statement of Work (TSoR): Plastic Buoys

Section 3 REQUIREMENTS

3.1 CONTRACT MANAGEMENT

3.1.1 Kick-off Meeting

Offeror(s) must convene and co-chair a one-day Kick-off Meeting within 10 business days of the issuance with the CCG Program Authority for AtoN and the CCG Regions. The CCG Program Authority will be responsible for providing a list of authorized users to be included in the meeting. The kickoff meeting will be conducted via teleconference or videoconference. For planning purposes, this meeting is not expected to last longer than two (2) hours.

At a minimum, the following documents will be reviewed at the kickoff meeting:

- a) Standing Offer (including Annex A and Annex B);

To facilitate a review, the Offeror(s) must provide an electronic copy of the format at least three (3) business days prior to the kickoff meeting.

The Offeror(s) must provide CCG Program Authority for AtoN with the kickoff meeting minutes for review and acceptance, no more than three (3) business days after the kickoff meeting occurs. At a minimum, these minutes must include the following information:

- a) A list of attendees;
- b) Narrative summation of each issue discussed;
- c) List of action items, if any; and
- d) A schedule of all planned activities.

3.1.2 Shipment Reporting

The Offeror(s) must notify the authorized user who placed the order, five (5) business days prior to each shipment leaving the Offeror(s)' or manufacturer's facility. This written notification must be provided electronically. As part of this notification, the Offeror(s) must specify an estimated delivery window to each delivery location, and provide the means for the authorized user(s) to track each shipment during transit (e.g. International Maritime Organization number, freight tracking number).

3.1.3 Issues Reporting

The Offeror must notify the authorized user who placed the order and the Program Authority for AtoN upon identifying or being informed of any issue that may impact the successful execution of Contract work. The Offeror(s) must document this issue in writing within two (2) business days of identification, and provide this discourse to the authorized user who placed the order and the Program Authority for AtoN electronically. This written discourse must also establish the appropriate measure(s) that the Offeror will use to mitigate the overall risk to the Contract work.

3.1.4 General Considerations

The Offeror must ensure that all tests and inspections defined in Annex B are conducted before shipment. CCG reserves the right to inspect all manufacturing or distribution sites to ensure quality control of the product. CCG will provide a minimum of ten (10) calendar days' notice before any inspection.

The Offeror must notify the CCG of each production run at least thirty (30) business days before the run. The Offeror must provide all results of tests and inspections.

3.1.5 Documentation

The Offeror must provide the CCG with all pertinent documentation defined in Annex B.

For reference, this documentation includes:

- a) The technical requirement for each buoy (Section 2 of Annex B);
- b) Deliverables (Appendix A of Annex A (SOW));
- c) Buoy performance Requirements (Appendix A of Annex B); and
- d) Standards (Appendix B of Annex B).

All documentation must be provided electronically to the CCG no more than ten (10) business days prior to the kick-off meeting.

All Plastic Buoys are subject to final inspection and acceptance by the CCG upon receipt. Final inspections do not limit or replace the testing and inspections required by the Offeror to ensure a quality product.

3.2 SHIPPING AND PACKAGING

3.2.1 Delivery Locations

Delivery may be to any one of the locations identified below:

Atlantic Region

CG St. John's Base, Newfoundland
280 Southside Road
St. John's, NL A1E 0A3;

CCG Dartmouth, Nova Scotia
50 Discovery Dr
Dartmouth, NS B3B 1A6;

CCG Charlottetown, Prince Edward Island
185 John Yeo Drive, Unit 2
Charlottetown, PEI C1A 7M8;

Central Region St Lawrence

CCG Québec City, Québec
101 Boulevard Champlain
Québec City, QC G1K 4H9;

CCG Sorel Base,
15, rue Prince
Sorel, QC, J3P 4J4;

PLASTIC BUOYS FOR AIDS TO NAVIGATION
Requirements

Central Region Great Lakes

CCG Parry Sound, Ontario
28 Waubeek Street
Parry Sound, ON P2A 1B9;

CCG Prescott Base, Ontario
401 King Street
Prescott, ON K0E 1T0;

Arctic Region

CCG Hay River Base
42037 MacKenzie Hwy
Hay River, NT, X0E 0R9;

Western Region

CCG Victoria Base, British Columbia
25 Huron Street
Victoria, BC V8V 9V1;

CCG Seal Cove Base
2501 Seal Cove Road
Prince Rupert, BC, V8J 3R1;

CCG Selkirk Base
632 Main St.
Selkirk, MB, R1A 2C3.

3.2.2 Packing/Shipping

All goods must be preserved and packaged in such a way as to ensure complete delivery at the destination, without damage or deterioration from shipping, handling, or storage hazards. The Offeror must provide the CCG Region with a hard copy of the bill of lading which will include the details from the 942 Call-Up.

In accordance with the Zero Waste Strategy by the Canadian Council of Ministers of the Environment, single-use plastics shall be minimized, and, when cost-permissive, products used for bundling should be recyclable material.

Each shipment must be packaged to facilitate safe unloading at the destination with standard lifting equipment (i.e., forklifts and overhead cranes). No container must exceed a weight of 2.5 metric tonnes.

APPENDIX A – DELIVERABLES

A.1 DELIVERABLES

A.1.1 Documentation

Manufacturers are required to supply the following information in both French and English language. All deliverables shall be in electronic PDF format. These requirements may be reduced at the discretion of CCG.

Deliverable at call up: A user manual for each buoy type describing, as a minimum, the following:

- Actual mill/material certificates for used materials;
- Water tightness test results;
- Proof test results of the lifting assembly (i.e., tested at twice the SWL);
- Inspection checklist confirming workmanship and compliance with physical and functional requirements
- Recommended/required deployment, storage and retrieval procedures if applicable;
- Recommended/required maintenance procedures;
- Fastener torques for any bolted assembly, if applicable;
- Repair procedures for the welding of cracked plastic hulls;
- Immersion charts in units of mass per vertical displacement [kg/cm];
- Recommended/required anchors sizes;
- Minimum and Maximum recommended mooring mass (using air weights of mass).

Deliverable with the bid submission: All engineering calculations shall be performed by a professionally accredited Naval Architect, Marine Engineer or Professional Engineer. A technical data package for each buoy type describing, as a minimum, the following:

- Engineering drawings including the design waterline, centre of gravity, meta-centric height, centre of buoyancy, weight-in-air and height from water line to top of buoy including appendages for both fresh and salt water; location and detail for all markings (e.g. height);
- Table of the required values as listed in Appendix A of Annex B (TSOR) and the corresponding actual design values;
- Parts lists if applicable;
- Radar reflector details, if applicable;
- Static and dynamic loading survival;
- Visual range calculations or test results;
- Radar range calculations or test results;
- Stability and buoyancy calculations;
- Chromaticity Colour test for each colour.
- Certificate confirming no banned substances;
- Sample mill/material certificates for all proposed materials, if warranted;
- Structural analysis of the lifting assembly and attachments;
- Abrasion test results for proposed plastic shell;
- Colour fastness test results for the proposed plastic; and

A.1.2 Supporting Documentation

The documents and accessories in this section must accompany all buoys delivered. The documents must be bilingual and in electronic format.

Table 14: Documents and accessories to be provided on delivery

Reference Number	Criteria Description	Requirement or Value
1.	Spare parts list	A list of spare parts of the buoys must be available and provided on delivery. Price of spare parts must be included. One list per delivery address.
2.	Maintenance	<ol style="list-style-type: none">1. A maintenance schedule must be available and provided on delivery.2. Recommended/required maintenance procedures.3. Repair procedures for the welding of cracked plastic hulls;4. Fastener torques for any bolted assembly, if applicable.
3.	Buoy Behaviour	<ol style="list-style-type: none">1. Immersion charts in units of mass per vertical displacement [kg/cm].2. Recommended/required anchors sizes.3. Minimum and Maximum recommended mooring mass (using air weights of mass).

A.1.3 Packaging

The following information must be affixed to the outer surface of the packaging:

- Name of the company
- Model number and colour

A.1.4. Acceptance of Deliveries

The CCG reserves the right to refuse, on delivery, any product that does not meet the required technical specifications.



Plastic Buoys

Technical Specification of Requirements Annex B





Title of Manual

CCG/Plastic Buoys

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*Disponible en français: Bouées côtières ou
portuaires en plastique de taille moyenne—
Spécification sur le rendement*

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Abbreviations

Abbreviation	Definition
CCG	Canadian Coast Guard
cd	Candelas
DFO	Fisheries and Oceans Canada
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IEC	International Electrotechnical Commission
IHO	International Hydrographic Organization
IP	Ingress Protection
kg	Kilograms
LED	Light Emitting Diode
lx	Lux
m	Meters
MIL STD	US Military Standard
nm	Nautical miles
NOTMAR	Notice to mariners
SCOLL	Self-Contained LED Lantern
TR	Technical Requirement
TSoR	Technical Specification of Requirements

1. INTRODUCTION

1.1. Purpose

As a part of services provided to the public, the Canadian Coast Guard (CCG) deploys and maintains numerous types of buoys as floating aids to navigation (AtoNs) for the purpose of ensuring safety of navigation. Buoys are used to demarcate boundaries of traffic lanes and also to indicate obstacles to navigation, such as underwater rocks and shoals.

This specification states the requirements for the Canadian Coast Guard's '**Commercial Off The Shelf**' (COTS) plastic buoys for marine navigational purposes. In keeping with the CCG's concept of extending the service cycle for buoys, the goal for periodic service is a 5-year schedule. This specification is applicable to the supply of the following plastic buoys of the following sizes:

1. *Small Spar* with hull diameters of 0.25 to 0.38 metres (see Appendix A.2.1),
2. *Small Marker* with hull diameters of 0.35 to 0.55 metres (see Appendix A.2.2),
3. *Medium Spar* with hull diameters of 0.50 to 0.70 metres (see Appendix A.2.3),
4. *Medium Marker* with hull diameters of 0.70 to 0.80 metres (see Appendix A.2.4),
5. *River Buoy* with hull diameters of 0.75 to 1.30 metres (see Appendix A.2.5),
6. *Low Draft River Buoy* with a hull diameter of 1.0 metre (see Appendix A.2.6),
7. *Medium-Large Marker* with hull diameters of 0.8 to 1.0 metres (see Appendix A.2.7),
8. *Large Marker* with hull diameters of 1.1 to 1.3 metres (see Appendix A.2.8), and
9. *Pillar Buoy* with hull diameters of 1.4 to 1.5 metres (see Appendix A.2.9)
10. *Funnel Buoy* with hull diameters of 0.8 to 1.0 metres (see Appendix A.2.10)

This specification addresses the following issues:

- Operational requirements including environmental conditions, operational service, operational criteria and stability requirements.
- Technical requirements including materials, design, structural capabilities, colours and markings.
- Appendix A, which provides detailed performance requirements for the various categories of plastic buoys.

2. TECHNICAL REQUIREMENTS

2.1. General

Buoys covered within this specification are typically capable of unattended operation for 5 years with no preventive maintenance, other than periodic cleaning of external surfaces.

These buoys are typically resistant to the rigors of normal handling during deployment and retrieval operations as well as damage from incidental contact from vessels and floating debris. The colour on the visible portion of the buoy is homogenous and stable for the life of the buoy and all its components (e.g. radar reflector, adhesives, all structure, fittings, lifting and mooring eyes) endure for the life of the buoy.

2.1.1. Buoy Categories

To satisfy the various operational requirements of the Canadian Coast Guard ten (10) buoy categories will be required as defined in detail in Appendix A of this specification.

2.2. Operational Requirements

2.2.1. Areas of Operation

These buoys will be deployed in Canadian Navigational Waters and principally used in rivers, lakes and coastal sheltered and partially protected waters.

2.2.2. Environmental Conditions

The buoy must either operate and/or survive as per the conditions listed in Appendix A.

Table 1: Environmental specifications

Reference Number	Criteria Description	Requirement or Value
TR.1	Water Temperature	The buoy must withstand and survive exposure to water temperatures of -2 °C to +30°C.
TR.2	Air Temperature	The buoy must operate in and survive exposure to air temperatures of -40 °C to +40°C.
TR.3	Water Type	The buoy must withstand exposure to continuous fresh, or saline or brackish waters for the duration of the specified life of the buoy.
TR.4	Operational Wind Speed	The buoy must operate in wind speeds up to 30 knots.
TR.5	Survival Wind Speed	The buoy must withstand wind speeds up to 80 knots.
TR.6	Operational Current Speed	Buoys must operate in water currents listed in Appendix A.

Reference Number	Criteria Description	Requirement or Value
TR.7	Survival Current Speed	Buoys must be able to withstand the current speeds listed in Appendix A .
TR.8	Maximum Operational Buoy Tilt Angle	For the maximum operational current the buoy must not tilt more than the angle as listed in Appendix A .
TR.9	Humidity	Buoys must withstand exposure to relative humidity levels from 0 to 100%.
TR.10	Salt Air and Seawater Spray	Buoys must withstand exposure of continuous salt air and seawater spray for the duration of the specified life of the buoy.
TR.11	Ultraviolet (UV) Exposure	Buoys must be able to withstand continuous exposure to ultraviolet (UV) light typical of the levels encountered in Amherstburg, Ontario (1250 hours per year) for the duration of the specified service life of the buoy as specified in Table 5 .
TR.12	Marine Growth	The buoy must withstand an accumulation of marine growth on its underwater portion during operational and survival conditions as listed in Appendix A .
TR.13	Ice Exposure and Ice Accumulation	Buoys must withstand ice exposures and ice accumulations as listed in Appendix A .
TR.14	Abrasion Resistance	The buoy will be subjected to abrasion due to drifting ice floes, logs, floating debris and must conform to the survival conditions as listed in Table 7 .

2.2.3. Operational Service

Buoys must be capable of unattended operation and will be subjected to the following operational conditions:

Table 2: Operational Service

Reference Number	Criteria Description	Requirement or Value
TR.15	Deployment and Retrieval	The buoy and all of its components must be capable of withstanding the static and dynamic loads associated with buoy deployment and retrieval operations.
TR.16	Periodic Maintenance	The buoy must endure the routine maintenance activities which are:

Reference Number	Criteria Description	Requirement or Value
		a) Pressure washing up to 20 MPa (3,000 psi) to remove fouling, typically every five years or as required; b) Removal of ice accumulation with the use of a non-metallic mallet (e.g. wood or rubber) as required; c) Replacement or re-application of retro-reflective material as required;
TR.17	Storage	The buoy must withstand storage in unsheltered conditions when not in service. These conditions include exposure to direct sunlight, rain, hail, sleet, snow, wind, blowing sand, temperature extremes, and any combination thereof. The buoy may also be stored on dirt, concrete, wood, or asphalt surfaces.

2.2.4. Life Expectancy

Aside from the need for periodic maintenance as described in **Table 2**, the buoys must have a minimum expected maintenance-free service life of fifteen (15) years.

2.2.5. Functional Criteria

Table 3: Life cycle specifications

Reference Number	Criteria Description	Requirement or Value
TR.18	Visual Range	The buoy must meet the visual range criteria specified within Appendix A . The visual range assumes that the observer is 3m above the water level in clear weather with calm seas and a meteorological visibility of 10 nautical miles. It is also assumed that there are no background features to obscure the buoy.
TR.19	Radar Range	The buoys must have a radar reflector with a minimal cross sectional area in accordance with reference [19] of Table 17, ref 19 ('Target item # 3') – 'Aids to Navigation with Radar Reflector' to ensure that it meets the target height requirements of this specification.
TR.20	Visible Height	Buoys must have sufficient operational reserve buoyancy to ensure that they meet the minimum visible height criteria specified within Appendix A .
TR.21	Buoy Type	Buoys used as navigational aids in this specification must be of the type lateral, cardinal or special conforming to the requirements of reference [20] of Table 18 . Colour requirements are defined in Table 10 .

2.2.6. Stability Criteria

The plastic buoy must meet the stability criteria at sea described below. Stability is to be assessed such that the buoy is able to meet the functional criteria defined in **Table 3** under the minimum and maximum limiting environmental conditions defined herein.

Table 4: Stability Criteria at Sea

Reference Number	Criteria Description	Requirement or Value
TR.22	Stability– Undamaged Condition	The buoys must remain upright at all times in undamaged condition; and not list in calm waters. Calm waters are defined as waters that are nearly or completely motionless and undisturbed This criterion is to be met considering all required payload items (e.g. LED lanterns, solar panels mooring) and minimum and maximum surcharge items (e.g. marine growth).
TR.23	Stability– Damaged Condition	The buoy hull must remain afloat at all times in the damaged condition. The damaged condition constitutes any condition wherein the buoy no longer functions as an aid to navigation.
TR.24	Operational Reserve Buoyancy	The operational reserve buoyancy (Rb) corresponds to a stable design deployment configuration range (see Appendix C). All operational criteria must be met within this range.

2.3. DESIGN REQUIREMENTS

2.3.1. Materials

Table 5: Materials specifications

Reference Number	Criteria Description	Requirement or Value
TR.25	General	All materials used in buoy construction are to meet the appropriate reference standards listed in Appendix B. Novel materials, or materials not addressed may be acceptable, but will require approval by CCG. The interior hull of the buoys must contain buoyancy material. All ballast material and radar reflector must be internal.
TR.26	Material Certifications	A certificate must be provided to validate that manufactured buoys do not contain any materials identified in reference [21] of Table 18- Appendix B identified for control or elimination on the CEPA Registry website
		The contractor must provide material certifications from the material manufacturer (MM) identifying the mechanical properties of the material or a certified independent testing laboratory (TL), indicating that the final materials used in the manufacturing of the buoy and described in the following sections meet the requirements of this specification over the life of the product: <ul style="list-style-type: none">• UV stabilizers rated for 15 a year life (18,750 hours)(TL);• buoy shell material (MM);• inserts and fittings (MM);• internal/external ballast material (MM); and• buoyancy material (MM).

2.3.2. Design, Dimensions and Surface Finish

Table 6: Life cycle specifications

Reference Number	Criteria Description	Requirement or Value
TR.27	General	The buoy's centre of gravity must be along the vertical axis and shown on the supplier's drawings.
TR.28	Buoy Hull Construction	The buoy hull must be watertight.
		If the buoy hull is used to support any of the mooring loads associated with the buoy (i.e. counterweights or mooring chain) it must provide the SWL as outlined in Table 7 .

Reference Number	Criteria Description	Requirement or Value
		The buoy structure must be strong enough not to sustain any cracks or breakage during operation, handling or during the removal of ice with a hard rubber or wooden mallet.
TR.29	Approved Shape	Buoys must have the above water shape meeting the requirements of reference [20] of Table 18- Appendix B . See buoy type definitions in Appendix A .
TR.30	Overall Dimensions	The overall dimension limits, including minimum Visible Height and Maximum Draft are defined in Appendix A for each buoy type.
TR.31	Mass in Air	The maximum mass in air of the buoy and associated standard outfit must not exceed the weight as referenced in Appendix A . This excludes the weight of additional payload items e.g. LED lantern.
TR.32	Surface Finish (Plastic)	The buoy must be free from blemishes, bumps, indentations, ragged edges, cracks, scales, pits and blisters. All corners and edges must be rounded with minimum radii of not less than 3 mm.
TR.33	Surface Finish (Metallic)	Metallic surface finishes must be free of any burrs or sharp edges with all corners and edges to be rounded with minimum radii of 3 mm.

2.3.3. Structural Capabilities

Buoys must be designed to meet the requirements of this section and maintain these throughout the specified life expectancy.

Table 7: Structural Capabilities specifications

Reference Number	Criteria Description	Requirement or Value
TR.34	The Lifting Assembly	<p>The Lifting Assembly shall be known as:</p> <ul style="list-style-type: none"> In one piece designs where the mooring eye is attached to an internal mechanism joining the mooring eye to the lifting eye. In modular design where the mooring eye is linked directly to the lifting eye via an external structural member. <p>In all cases the Lifting Assembly shall contain a minimum number of components to transfer loading from the lifting to the mooring eye.</p>

Reference Number	Criteria Description	Requirement or Value
TR.35	Safe Working Load (SWL)	<p>All lifting and mooring attachments and related assemblies must have a minimum safety factor of 5 for the life of the buoy. The items to consider for the SWL for each eye type are as follows:</p> <p>Loads on the Lifting Assembly - the sum of the equivalent air mass of:</p> <ul style="list-style-type: none"> the buoy (including any internal ballast), as purchased; all payload items, e.g. Lantern weight and Marine Growth. the maximum mooring load.
TR.36	Lifting and Mooring Attachment Points	The capacity of each Lifting eye attachment must be clearly identified as per Table 12 .
TR.37	Abrasion Resistance	The buoys' shell must be abrasion tested in accordance with the standard test as specified in Table 14 reference [7] of Appendix B (Taber Test) with Wheel CS 17, Load of 1 kg and be capable of resisting any wear when subjected to the conditions as detailed in Appendix A .

2.3.4. Exterior Outfit

Table 8: Exterior Outfit specifications

Reference Number	Criteria Description	Requirement or Value
TR.38	Buoy Shell	The buoy shell, or outer skin, must be made from plastic.
TR.39	Colour Uniformity	The colour of the buoy shell must be homogenous throughout and have a 'high gloss' finish.
		Ultraviolet stabilizers must be added to the plastic to protect the material from degradation due to continuous sun exposure as defined in Table 1 above. Unless otherwise specified, the shell must be uniform in colour.

Reference Number	Criteria Description	Requirement or Value
TR.40	Fasteners, Bushings and Inserts	<ul style="list-style-type: none"> a) All metallic fittings (fasteners, bushings and inserts) must be of stainless steel AISI type 316 or equivalent. b) The fittings must be designed to be dismantled using standard tools and equipment. c) All parts must be free of cracks and other material defects and all sharp corners and edges must be rounded. d) Lantern inserts must not break free of their encapsulation nor pull out when subjected to a torque of 27.1 N-m (20 ft-lb). e) Wear bushings, if present must be designed to remain functional over the buoys specified life expectancy.
TR.41	Mooring Eye Attachment Points	<p>The buoy must be fitted with the specified number of mooring attachment points specified in Appendix A, symmetrically opposite to each other.</p> <p>Each mooring eye must be fitted with a stainless steel bushing insert not less than the dimension specified in Appendix A.</p>
TR.42	Lifting Eye and Handling Attachment Points	<p>The buoy must be fitted with the specified number of lifting and/or handling attachment points as identified in Appendix A.</p> <p>Lifting eyes must be made from stainless steel AISI type 316 or equivalent or marine grade aluminum capable of meeting the requirements of Table 5 and the minimum dimensional tolerances defined for this buoy in Appendix A.</p>
TR.43	Lantern Mounting	<p>The buoy must provide mounting bolt patterns as shown in Figure A-2.11</p> <p>The buoy must have a flat top and be fitted with stainless steel inserts AISI type 316 or equivalent.</p>
TR.44	Lantern Adapter	The buoy must be capable of meeting all operational requirements when mounted with a lantern with a maximum weight of 15 kg. including the additional weight of an adapter plate if needed.

2.3.5. Interior Outfit

Table 9: Interior Outfit specifications

Reference Number	Criteria Description	Requirement or Value
TR.45	Internal Ballast	All non modular buoy design must have an internal ballast. The use of an internal ballast is to achieve compliance with the functional and stability criteria of the buoy.
		Internal Ballast: Ballast material which is internal to the buoy and is not in direct contact with water must be non-toxic and non-polluting.
TR.46	Buoyancy Material	The buoyancy material used must be closed cell foam; preference will be given to recyclable materials as per Table 13 .
		The buoyancy material must be free of cracks, gouges, and embedded foreign material.
		There must be no internal voids of such quantity or size that could cause the buoy to be susceptible to flooding.
		When the buoyancy material is the principal method of containing interior outfit items, namely ballast and radar reflectors, it is to be of a density and strength adequate for the task.

2.3.6. Colour

Table 10: Colour specifications

Reference Number	Criteria Description	Requirement or Value
TR.47	Buoy Colour	The visible part of the buoy above the waterline must be one uniform colour throughout. In the case of segmented coloured buoys (i.e. Cardinal or Safe water buoys) the separate colours must be homogenous and uniform.
TR.48	Colour Fastness	Colour stability must be measured in accordance with Table 17 reference [17] of Appendix B section 1.2 where the allowable colour change must not exceed ΔE^*_{ab} 4.0, after 1000 hours of exposure using a Xenon Weatherometer.
TR.49	Colour Pigment	The CIE 1931 chart as shown in Figure 1 below defines the desired IALA-108 E Chromaticity values for x and y for each of the colours used in the buoy plastic. Buoy colours must be within their preferred zones.

Reference Number	Criteria Description	Requirement or Value
		Colour pigmentation will be measured for the geometry of 45°/0° with a 2 degree observation angle and an Illuminant of D65 and excludes UV.

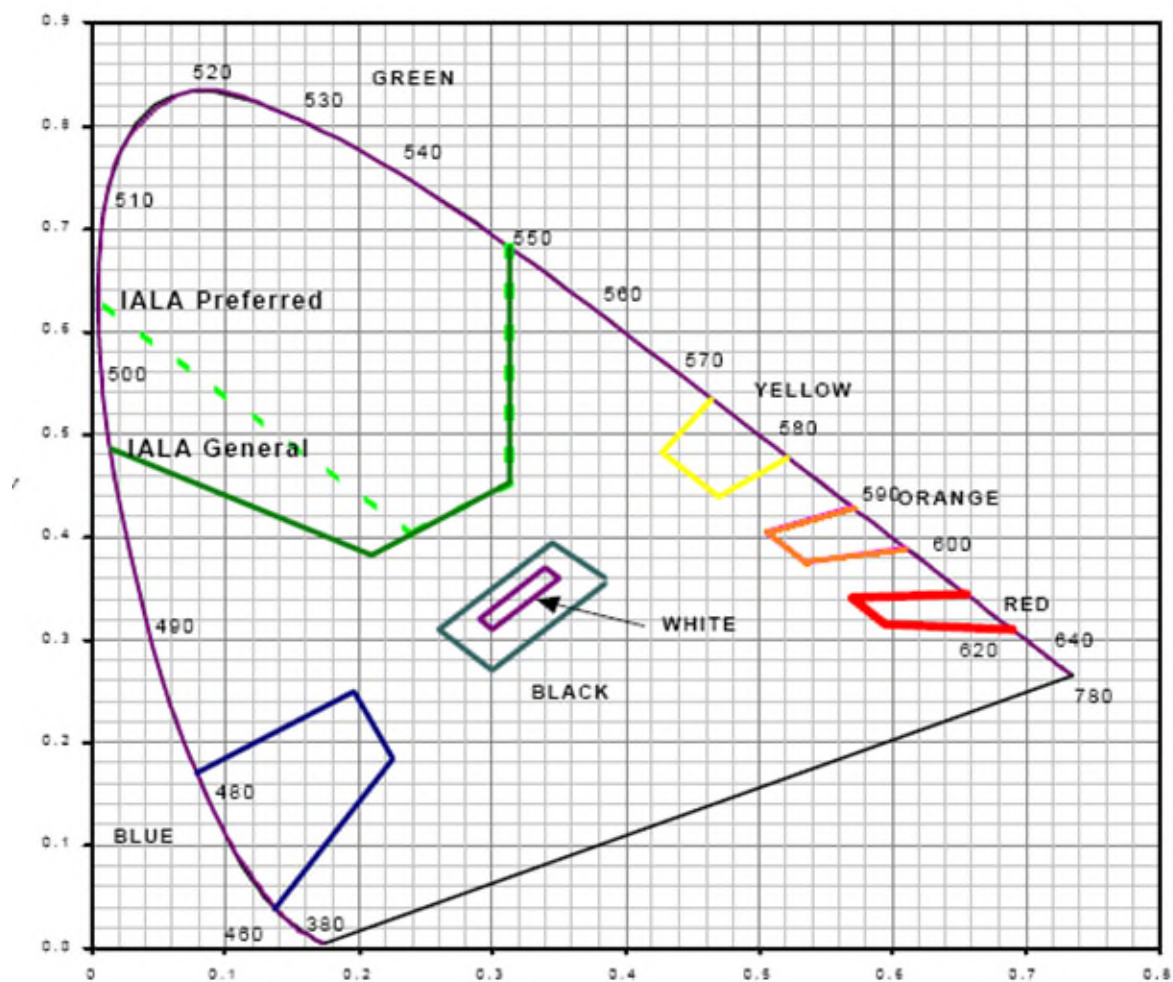


Figure 1: IALA-108-CIE 1931 Chromaticity Chart

2.3.7. Markings

Table 11: Markings

Reference Number	Criteria Description	Requirement or Value
TR.50	General	All markings must be clearly, legibly and permanently engraved.
		The method and placement of all markings must not affect the structural integrity of the buoy.
		The markings must be in French and English and must be shown on delivered drawings.
		All buoys must be marked by a plastic recycling mark as identified in Figure A-2.12
TR.51	Buoy Markings	<p>The letters Coast Guard Markings:</p> <p style="text-align: center;">CANADIAN COAST GUARD GARDE CÔTIÈRE CANADIENNE 20XX</p> <p>where “20xx” is the year of manufacture, must be inscribed in block digits on each buoy above the waterline. The letters must not be less than twenty-five (25) mm tall in ARIAL font. For buoy dimensions too small to accommodate the entire inscription; only the year of manufacture will have 25 mm tall letters. The remaining title will be sized as appropriate, according to the buoy dimensions.</p>

2.3.8. Life Cycle Specifications

Table 12: Life cycle specifications

Reference Number	Criteria Description	Requirement or Value
TR.52	Identification	Every plastic buoy must be fitted with a unique Serial Number assigned by the manufacturer.
		The size of lettering must be at least 12 mm high, clearly legible and located in an area above the waterline
TR.53	Operational Reserve Buoyancy (Rb)	Two engraved or raised line markings identifying the Operational Reserve Buoyancy limits of the buoy must be clearly and permanently marked around the entire circumference of the hull.
		Each of the lines must be marked with 12 mm high lettering indicating either the “MIN’ or “MAX’ levels of the Reserve Buoyancy (Rb).

Reference Number	Criteria Description	Requirement or Value
		These markings must not in any way affect the buoys structural integrity.
TR.54	Radar Reflector	Type 1 tower sections must have the letter “R” inscribed on the tower to indicate that there is a radar reflector within.
TR.55	Retro Reflective Material	Area for Retro reflective materials must be placed at the highest possible location on the tower. The marking must encompass the entire circumference of the buoy.
TR.56	SWL	The safe working load (SWL) associated with all lifting and mooring points must be marked using SI units adjacent to each lifting point.
		The size of lettering must be at least 12 mm high and clearly legible.

2.3.9. Environmental Impact

Table 13: Environmental Impact

Reference Number	Criteria Description	Requirement or Value
TR.57	Buoy Design and Materials	Buoy designs and materials must be selected to minimize their environmental impact upon disposal at the end of their useful life.
TR.58	Ease of Disposal	Considerations will be given to buoy designs that facilitate the ease of disposal. Designs that incorporate easy separation of materials will be favoured.

APPENDIX A BUOY PERFORMANCE REQUIREMENTS

A.1 SCOPE

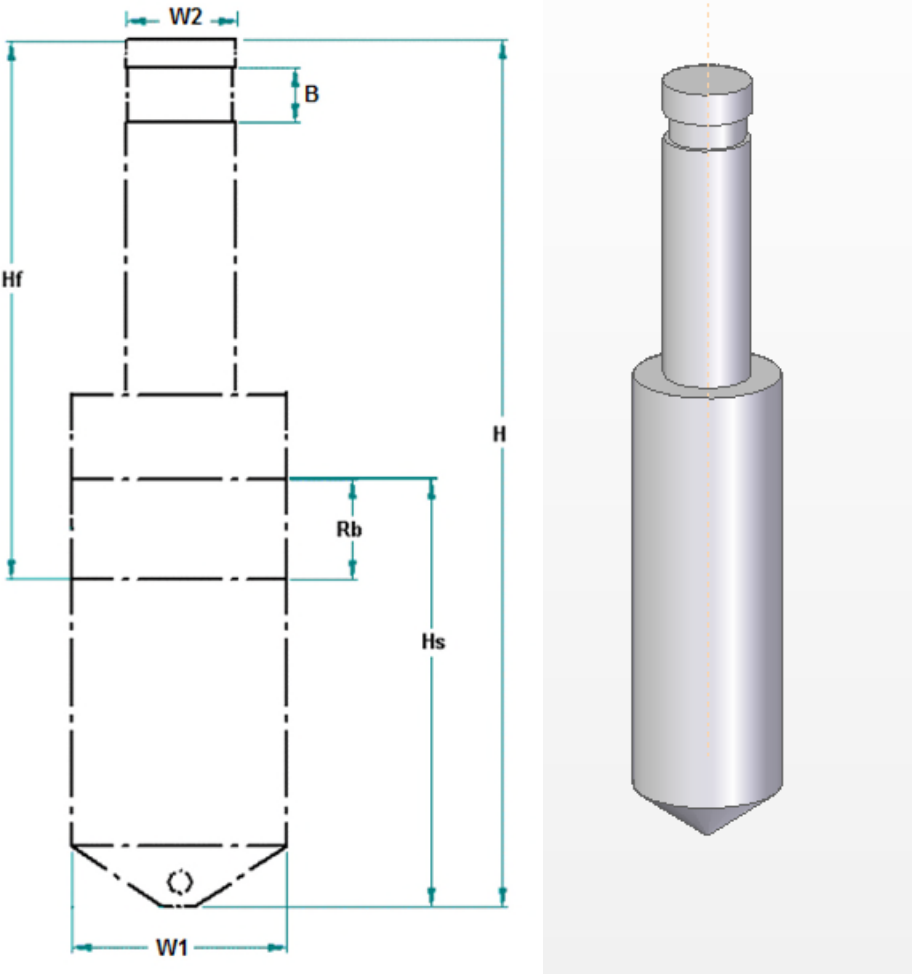
This appendix states the supplementary requirements which the buoy is required to meet in addition to the requirements of the main body of the specification.

A.2 PERFORMANCE REQUIREMENTS

This section defines the environmental conditions under which the Plastic Buoys must function as an aid to navigation. It also defines functional criteria and supplementary requirements, which the Plastic Buoys must meet in order to meet the requirements of this section.

A.2.1 Small Spar

Item	Dimensional Requirements	Units	Value
A.2.1.1	Minimum / Maximum Hull Diameter (W)	m	0.25/0.38
A.2.1.2	Minimum / Maximum Tower Section Diameter	-	170/190
A.2.1.3	Maximum Buoy Height (H)	m	3.0
A.2.1.4	Buoy Weight Range (including internal ballast)	kg	34 - 42
A.2.1.5	Expected Lantern Weight ⁷	kg	5.0
A.2.1.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.1.7	Overall Buoy Silhouette	-	Figure A-2.1
A.2.1.8	Threaded lantern supports @150mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.1.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.1.10	Minimum Radar Range ²	nm	n/a
A.2.1.11	Minimum Radar Cross Sectional Area	m ²	2.0
A.2.1.12	Minimum Visible Height ³ (Hf) [@max mooring load]	m	1.10
A.2.1.13	Can Top	-	Yes
A.2.1.14	Conical Top	-	Optional
A.2.1.15	Retro-Reflective Area (B)	mm	155
A.2.1.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.1.17	Radar Reflector ⁴	-	Mandatory
A.2.1.18	Lantern Mount ⁵	-	Yes
A.2.1.19	Lantern Type Generally Used	-	1.5 to 2 nm LED*
Lifting and Mooring Eyes			
A.2.1.20	Minimum Number of Handling Eyes	-	1
A.2.1.21	Minimum Number of Lifting Eyes	-	0
A.2.1.22	Minimum Number of Mooring eyes	-	1
A.2.1.23	Lifting Eye Safe Working Load (SWL)	kg	-
A.2.1.24	Lifting Assembly Break Load	-	-
A.2.1.25	Mooring Eye Break Load	kg	-
A.2.1.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.1.27	Maximum Mooring Lug Width	mm	75
A.2.1.28	Minimum Handling Eye Internal Diameter	mm	40
A.2.1.29	Minimum/Maximum Mooring Load	kg	20/55
Environmental Conditions			
A.2.1.30	Maximum Marine Growth ⁶ – Operational	kg	10
A.2.1.31	Maximum Current – Operational	knots	2.0
A.2.1.32	Maximum Current – Survival	knots	10.0

A.2.1.33	Ice Accumulation	kg	10
Buoy Markings			
A.2.1.34	Operation Reserve Buoyancy (R_b)	-	Yes
<div></div> <p>Figure A-2.1: Small Spar Buoy Silhouette</p>			

A.2.2 Small Marker

Item	Dimensional Requirements	Units	Value
A.2.2.1	Minimum / Maximum Hull Diameter (W)	m	0.35/0.55
A.2.2.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.2.3	Maximum Buoy Height (H)	m	1.30
A.2.2.4	Buoy Weight Range (including internal ballast)	kg	9-12
A.2.2.5	Expected Lantern Weight ⁷	kg	5.0
A.2.2.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.2.7	Overall Buoy Silhouette	-	Figure A-2.2
A.2.2.8	Threaded lantern supports @150mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.2.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.2.10	Minimum Radar Range ²	nm	n/a
A.2.2.11	Minimum Radar Cross Sectional Area	m ²	2.0
A.2.2.12	Minimum Visible Height ³ (Hf) [@ max mooring load]	m	0.60
A.2.2.13	Can Top	-	Yes
A.2.2.14	Conical Top	-	Optional
A.2.2.15	Retro-Reflective Area (B)	mm	155
A.2.2.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.2.17	Radar Reflector ⁴	-	Mandatory
A.2.2.18	Lantern Mount ⁵	-	Optional
A.2.2.19	Lantern Type Generally Used	-	1.5 to 2 nm LED*
Lifting and Mooring Eyes			
A.2.2.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.2.21	Minimum Number of Lifting eyes	-	0
A.2.2.22	Minimum Number of Mooring eyes	-	1
A.2.2.23	Lifting Eye Safe Working Load (SWL)	kg	n/a
A.2.2.24	Lifting Assembly Break Load	kg	n/a
A.2.2.25	Mooring Eye Break Load	kg	n/a
A.2.2.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.2.27	Maximum Mooring Eye Width	mm	75
A.2.2.28	Minimum Lifting /Handling Eye Internal Diameter	mm	100
A.2.2.29	Minimum/Maximum Mooring Load	kg	5/25
Environmental Conditions			

A.2.2.30	Maximum Marine Growth ⁶ – Operational	kg	5
A.2.2.31	Maximum Current – Operational	knots	2.0
A.2.2.32	Maximum Current – Survival	knots	10.0
A.2.2.33	Ice Accumulation	kg	5

Buoy Markings

A.2.2.34	Operation Reserve Buoyancy (R_{∞})	-	Yes
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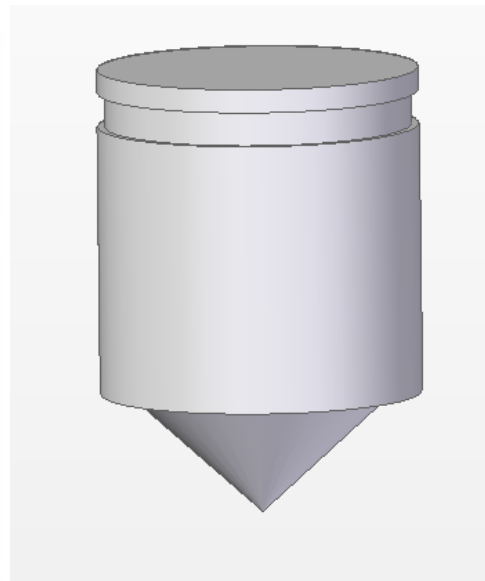
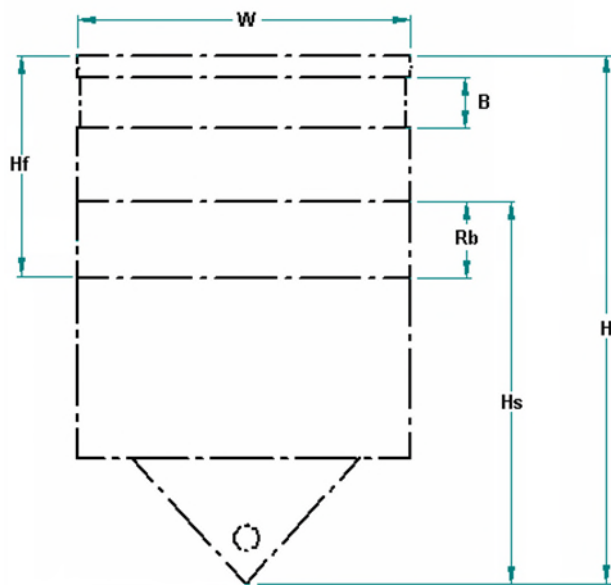


Figure A-2.2: Small Marker Buoy Silhouette

A.2.3 Medium Spar

Item	Dimensional Requirements	Units	Value
A.2.3.1	Minimum / Maximum Hull Diameter (W)	m	0.50/0.70
A.2.3.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.3.3	Maximum Buoy Height (H)	m	4.5
A.2.3.4	Buoy Weight Range (including internal ballast)	kg	81-110
A.2.3.5	Expected Lantern Weight ⁷	kg	15.0
A.2.3.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.3.7	Overall Buoy Silhouette	-	Figure A-2.3
A.2.3.8	Threaded lantern supports @200mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.3.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.3.10	Minimum Radar Range ²	nm	n/a
A.2.3.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.3.12	Minimum Visible Height ³ (Hf) [at max mooring load]	m	1.10
A.2.3.13	Can Top	-	Yes
A.2.3.14	Conical Top	-	Optional
A.2.3.15	Retro-Reflective Area (B)	mm	205
A.2.3.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.3.17	Radar Reflector ⁴	-	Mandatory
A.2.3.18	Lantern Mount ⁵	-	Yes
A.2.3.19	Lantern Type Generally Used	-	3 to 4 nm LED*
Lifting and Mooring Eyes			
A.2.3.20	Minimum Number of Handling Eyes	-	0
A.2.3.21	Minimum Number of Lifting Eyes	-	1
A.2.3.22	Minimum Number of Mooring eyes	-	1
A.2.3.23	Lifting Eye Safe Working Load (SWL)	kg	See Table 7
A.2.3.24	Lifting Assembly Break Load	kg	See Table 7
A.2.3.25	Mooring Eye Break Load	kg	See Table 7
A.2.3.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.3.27	Maximum Mooring Eye Width	mm	75
A.2.3.28	Minimum Lifting /Handling Eye Internal Diameter	mm	100

A.2.3.29	Minimum/Maximum Mooring Load	kg	200/450
Environmental Conditions			
A.2.3.30	Maximum Marine Growth ⁶ – Operational	kg	20
A.2.3.31	Maximum Current – Operational	knots	2.0
A.2.3.32	Maximum Current – Survival	knots	10.0
A.2.3.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.3.34	Operation Reserve Buoyancy (R_b)	-	Yes

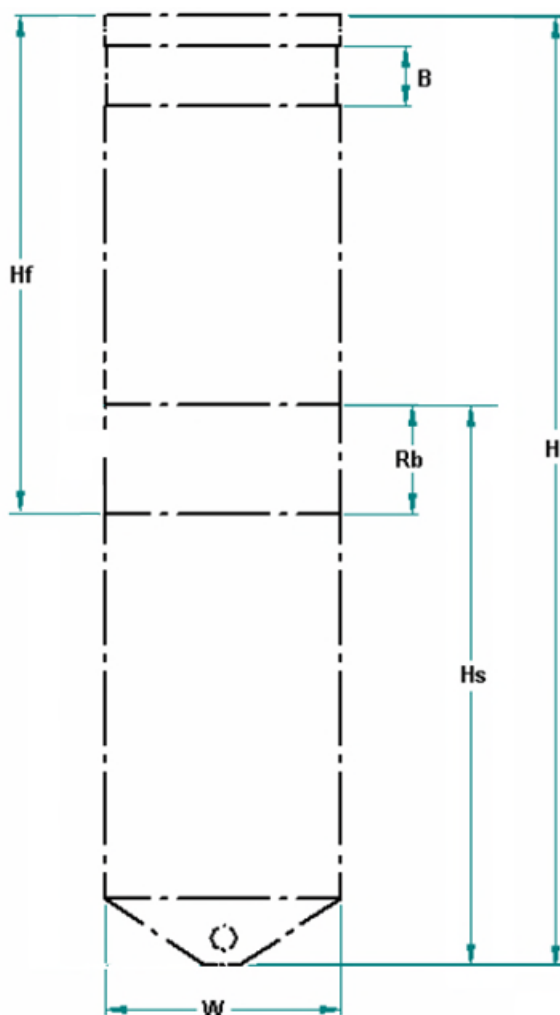


Figure A-2.3: Medium Spar Silhouette

A.2.4 Medium Marker

Item	Dimensional Requirements	Units	Value
A.2.4.1	Minimum / Maximum Hull Diameter (W)	m	0.70/0.80
A.2.4.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.4.3	Maximum Buoy Height (H)	m	1.8
A.2.4.4	Buoy Weight Range (including internal ballast)	kg	30 - 37
A.2.4.5	Expected Lantern Weight ⁷	kg	15.0
A.2.4.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.4.7	Overall Buoy Silhouette	-	Figure A-2.4
A.2.4.8	Threaded lantern supports @200mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.4.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.4.10	Minimum Radar Range ²	nm	n/a
A.2.4.11	Minimum Radar Cross Sectional Area	m ²	2.0
A.2.4.12	Minimum Visible Height ³ (Hf) [at max mooring load]	m	0.6
A.2.4.13	Can Top	-	Yes
A.2.4.14	Conical Top	-	Optional
A.2.4.15	Retro-Reflective Area (B)	mm	205
A.2.4.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.4.17	Radar Reflector ⁴	-	Mandatory
A.2.4.18	Lantern Mount ⁵	-	Optional
A.2.4.19	Lantern Type Generally Used ¹	-	3 to 4 nm LED*
Lifting and Mooring Eyes			
A.2.4.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.4.21	Minimum Number of Lifting eyes	-	0
A.2.4.22	Minimum Number of Mooring eyes	-	1
A.2.4.23	Lifting Eye Safe Working Load (SWL)	kg	n/a
A.2.4.24	Lifting Assembly Break Load	kg	n/a
A.2.4.25	Mooring Eye Break Load	kg	n/a
A.2.4.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.4.27	Maximum Mooring Eye Width	mm	75
A.2.4.28	Minimum Lifting /Handling Eye Internal Diameter	mm	100

A.2.4.29	Minimum/Maximum Mooring Load	kg	75/160
Environmental Conditions			
A.2.4.30	Maximum Marine Growth ⁶ – Operational	kg	20
A.2.4.31	Maximum Current – Operational	knots	2.0
A.2.4.32	Maximum Current – Survival	knots	10.0
A.2.4.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.4.34	Operation Reserve Buoyancy (R_b)	-	Yes

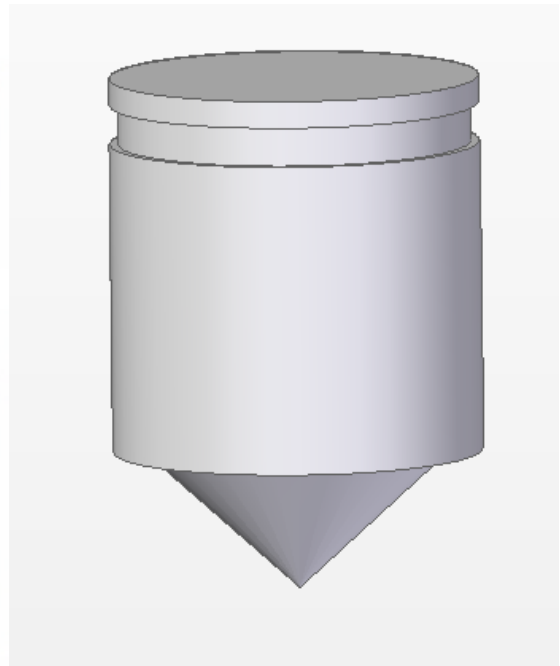
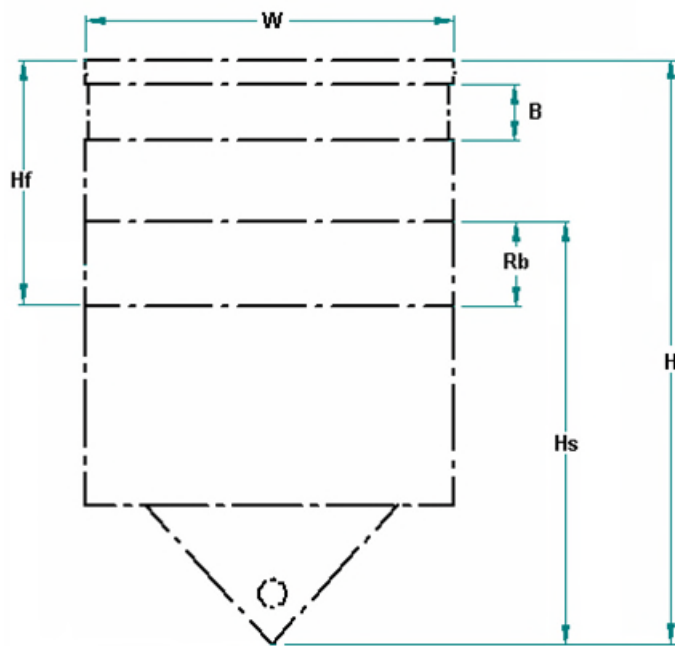


Figure A-2.4: Medium Marker Silhouette

A.2.5 River Buoy

Item	Dimensional Requirements	Units	Value
A.2.5.1	Minimum / Maximum Hull Diameter (W)	m	Fig.2.5 0.75/ 1.3
A.2.5.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.5.3	Maximum Buoy Height (H)	m	2.2
A.2.5.4	Buoy Weight Range (including internal ballast)	kg	Fig.2.5 45 - 55
A.2.5.5	Expected Lantern Weight ⁷	kg	5.0
A.2.5.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.5.7	Overall Buoy Silhouette	-	Figure A-2.5
A.2.5.8	Threaded lantern supports @150 mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.5.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.5.10	Minimum Radar Range ²	nm	n/a
A.2.5.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.5.12	Minimum Visible Height ³ (Hf) [@ max mooring load]	m	0.5
A.2.5.13	Can Top	-	Yes
A.2.5.14	Conical Top	-	Optional
A.2.5.15	Retro-Reflective Area (B)	mm	155
A.2.5.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.5.17	Radar Reflector ⁴	-	Mandatory
A.2.5.18	Lantern Mount ⁵	-	Optional
A.2.5.19	Lantern Type Generally Used	-	1.5 to 2 nm LED*
Lifting and Mooring Eyes			
A.2.5.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.5.21	Minimum Number of Lifting Eyes	-	1
A.2.5.22	Minimum Number of Mooring eyes	-	2
A.2.5.23	Lifting Eye Safe Working Load (SWL)	kg	See Table 7.
A.2.5.24	Lifting Assembly Break Load	kg	See Table 7
A.2.5.25	Mooring Eye Break Load	kg	See Table 7
A.2.5.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.5.27	Maximum Mooring Eye Width	mm	75
A.2.5.28	Minimum Lifting /Handling Eye Internal Diameter	mm	45
A.2.5.29	Minimum/Maximum Mooring Load	kg	Fig. 2.5 100/150

Environmental Conditions			
A.2.5.30	Maximum Marine Growth ⁶ – Operational	kg	Fig.2.5 10
A.2.5.31	Maximum Current – Operational	knots	4.0
A.2.5.32	Maximum Current – Survival	knots	10.0
A.2.5.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.5.34	Operation Reserve Buoyancy (R_b)	-	Yes

Figure A-2.5: River Buoy Silhouette

A.2.6 Low Draft River Buoy

Item	Dimensional Requirements	Units	Value
A.2.6.1	Minimum / Maximum Hull Diameter (W)	m	Fig.2.6 n/a/ 1.0
A.2.6.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.6.3	Maximum Buoy Height (H)	m	2.2
A.2.6.4	Buoy Weight Range (including internal ballast)	kg	Fig.2.6 65 - 74
A.2.6.5	Expected Lantern Weight ⁷	kg	5.0
A.2.6.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.6.7	Overall Buoy Silhouette	-	Figure A-2.6
A.2.6.8	Threaded lantern supports @150 mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.6.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.6.10	Minimum Radar Range ²	nm	n/a
A.2.6.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.6.12	Minimum Visible Height ³ (Hf) [@ max mooring load]	m	0.5
A.2.6.13	Can Top	-	Yes
A.2.6.14	Conical Top	-	Optional
A.2.6.15	Retro-Reflective Area (B)	mm	155
A.2.6.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.6.17	Radar Reflector ⁴	-	Mandatory
A.2.6.18	Lantern Mount ⁵	-	Optional
A.2.6.19	Lantern Type Generally Used	-	1.5 to 2 nm LED*
Lifting and Mooring Eyes			
A.2.6.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.6.21	Minimum Number of Lifting Eyes	-	1
A.2.6.22	Minimum Number of Mooring eyes	-	2
A.2.6.23	Lifting Eye Safe Working Load (SWL)	kg	See Table 7.
A.2.6.24	Lifting Assembly Break Load	kg	See Table 7
A.2.6.25	Mooring Eye Break Load	kg	See Table 7
A.2.6.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.6.27	Maximum Mooring Eye Width	mm	75
A.2.6.28	Minimum Lifting /Handling Eye Internal Diameter	mm	45
A.2.6.29	Minimum/Maximum Mooring Load	kg	Fig.2.6 0/50

Environmental Conditions			
A.2.6.30	Maximum Marine Growth ⁶ – Operational	kg	Fig.2.6 10
A.2.6.31	Maximum Current – Operational	knots	4.0
A.2.6.32	Maximum Current – Survival	knots	10.0
A.2.6.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.6.34	Operation Reserve Buoyancy (R_b)	-	Yes

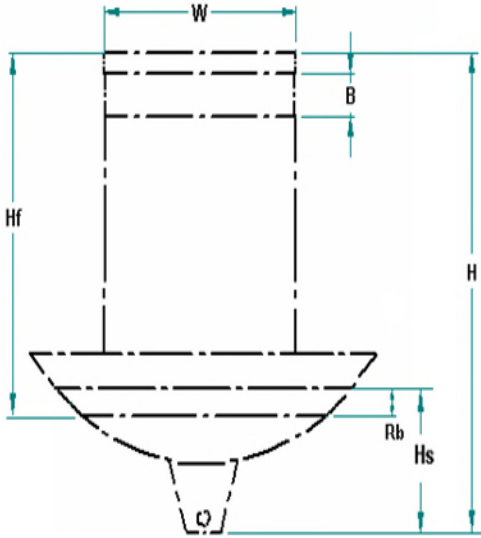


Figure A-2.6: Low Draft River Buoy Silhouette

A.2.7 Medium-Large Marker

Item	Dimensional Requirements	Units	Value
A.2.7.1	Minimum / Maximum Hull Diameter (W)	m	0.81 /1.0
A.2.7.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.7.3	Maximum Buoy Height (H_s)	m	2.0
A.2.7.4	Buoy Weight Range (including internal ballast)	kg	60 - 70
A.2.7.5	Expected Lantern Weight ⁷	kg	15.0
A.2.7.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.7.7	Overall Buoy Silhouette		Figure A-2.7
A.2.7.8	Threaded lantern supports @200mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.7.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.7.10	Minimum Radar Range ²	nm	n/a
A.2.7.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.7.12	Minimum Visible Height ³ (H_f) [@ max mooring load]	m	1.0
A.2.7.13	Can Top	-	Yes
A.2.7.14	Conical Top	-	Optional
A.2.7.15	Retro-Reflective Area (B)	mm	205
A.2.7.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.7.17	Radar Reflector ⁴	-	Mandatory
A.2.7.18	Lantern Mount ⁵	-	Optional
A.2.7.19	Lantern Type Generally Used	-	3 to 4 nm LED*
Lifting and Mooring Eyes			
A.2.7.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.7.21	Minimum Number of Lifting Eyes	-	0
A.2.7.22	Minimum Number of Mooring eyes	-	1
A.2.7.23	Lifting Eye Safe Working Load (SWL)	kg	n/a
A.2.7.24	Lifting Assembly Break Load	kg	n/a
A.2.7.25	Mooring Eye Break Load	kg	n/a
A.2.7.26	Minimum Mooring Eye Internal Diameter	mm	40
A.2.7.27	Maximum Mooring Eye Width	mm	55
A.2.7.28	Minimum Lifting /Handling Eye Internal Diameter	mm	n/a
A.2.7.29	Minimum/Maximum Mooring Load	kg	150/300
Environmental Conditions			

A.2.7.30	Maximum Marine Growth ⁶ – Operational	kg	20
A.2.7.31	Maximum Current – Operational	knots	2.0
A.2.7.32	Maximum Current – Survival	knots	10.0
A.2.7.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.7.34	Operation Reserve Buoyancy (R_{ω})	-	Yes

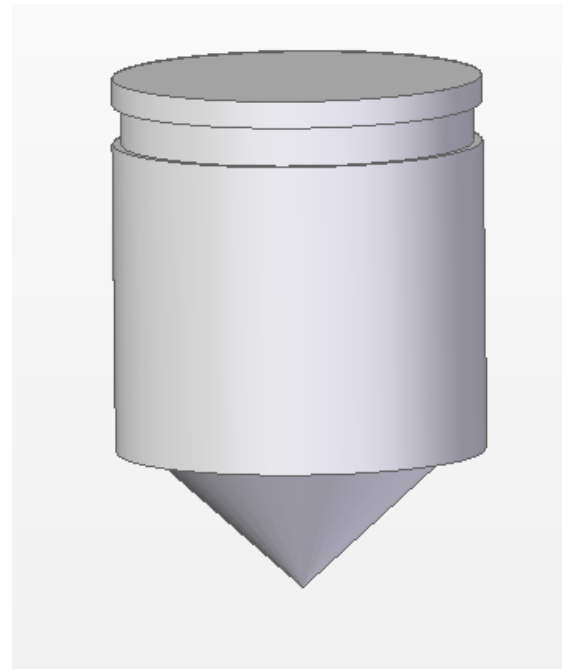
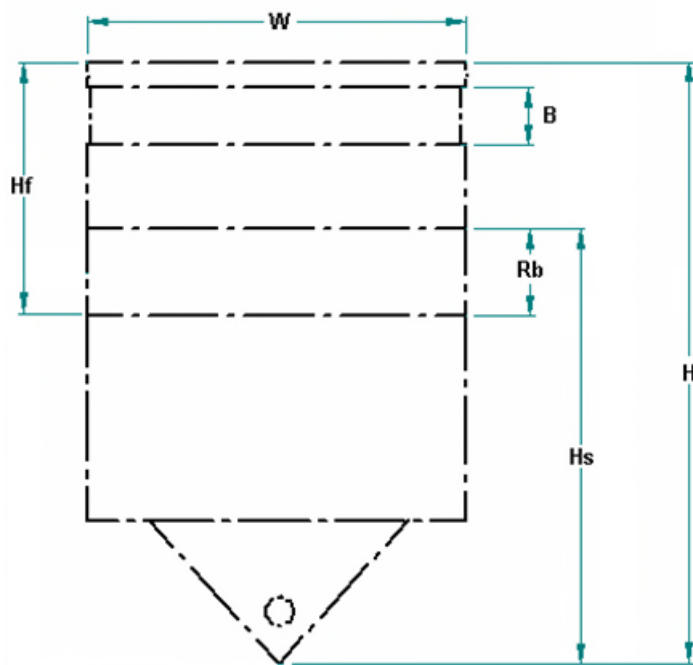


Figure A-2.7: Medium-Large Marker Silhouette

A.2.8 Large Marker

Item	Dimensional Requirements	Units	Value
A.2.8.1	Minimum / Maximum Hull Diameter (W)	m	1.1 /1.3
A.2.8.2	Minimum / Maximum Tower Section Diameter	-	n/a
A.2.8.3	Maximum Buoy Height (H _s)	m	2.4
A.2.8.4	Buoy Weight Range (including internal ballast)	kg	110 - 140
A.2.8.5	Expected Lantern Weight ⁷	kg	15.0
A.2.8.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.8.7	Overall Buoy Silhouette	-	Figure A-2.8
A.2.8.8	Threaded lantern supports @200mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.8.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.8.10	Minimum Radar Range ²	nm	n/a
A.2.8.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.8.12	Minimum Visible Height ³ (H _f) [@ max mooring load]	m	1.0
A.2.8.13	Can Top	-	Yes
A.2.8.14	Conical Top	-	Optional
A.2.8.15	Retro-Reflective Area (B)	mm	205
A.2.8.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.8.17	Radar Reflector ⁴	-	Mandatory
A.2.8.18	Lantern Mount ⁵	-	Optional
A.2.8.19	Lantern Type Generally Used	-	3 to 4 nm LED*
Lifting and Mooring Eyes			
A.2.8.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.8.21	Minimum Number of Lifting Eyes	-	0
A.2.8.22	Minimum Number of Mooring eyes	-	1
A.2.8.23	Lifting Eye Safe Working Load (SWL)	kg	n/a
A.2.8.24	Lifting Assembly Break Load	kg	n/a
A.2.8.25	Mooring Eye Break Load	kg	n/a
A.2.8.26	Minimum Mooring Eye Internal Diameter	mm	40
A.2.8.27	Maximum Mooring Eye Width	mm	55
A.2.8.28	Minimum Lifting /Handling Eye Internal Diameter	mm	n/a
A.2.8.29	Minimum/Maximum Mooring Load	kg	200/500
Environmental Conditions			

A.2.8.30	Maximum Marine Growth ⁶ – Operational	kg	20
A.2.8.31	Maximum Current – Operational	knots	2.0
A.2.8.32	Maximum Current – Survival	knots	10.0
A.2.8.33	Ice Accumulation	kg	15
Buoy Markings			
A.2.8.34	Operation Reserve Buoyancy (R_{∞})	-	Yes

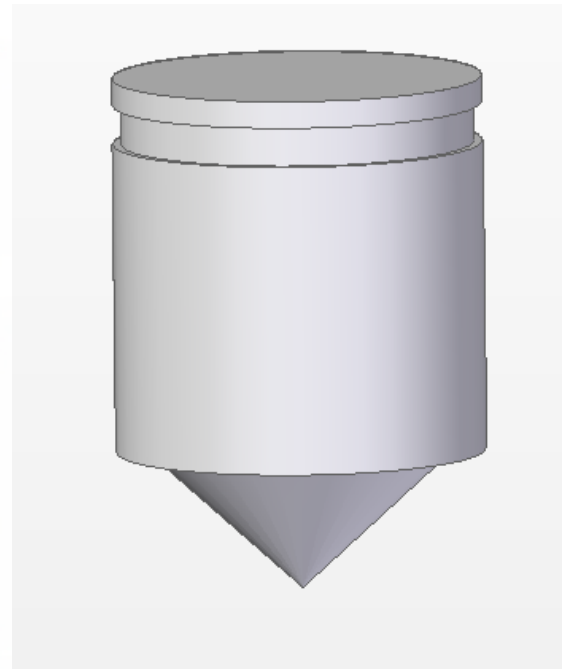
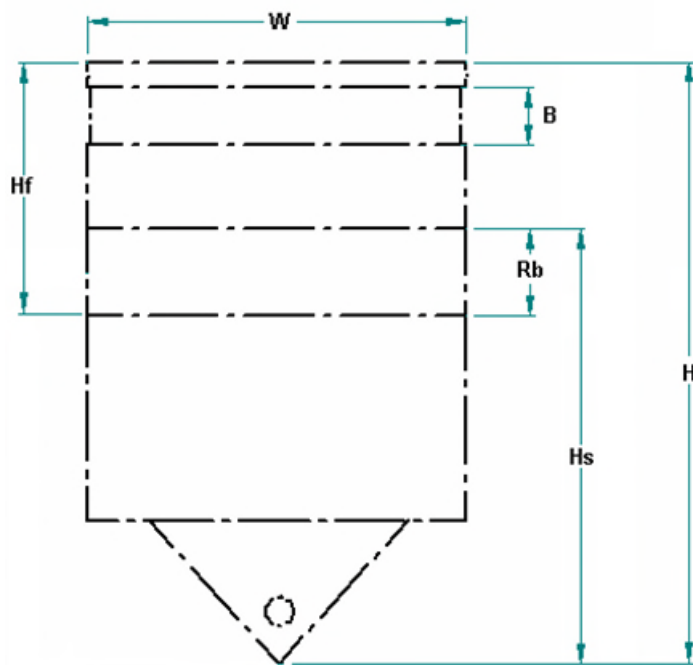


Figure A-2.8: Large Marker Silhouette

A.2.9 Pillar Buoy

Item	Dimensional Requirements	Units	Value
A.2.9.1	Minimum / Maximum Hull Section Diameter (W2)	m	1.4 /1.50
A.2.9.2	Minimum / Maximum Tower Section Diameter (W1)	m	0.5 /0.7
A.2.9.3	Maximum Buoy Height (H)	m	2.4
A.2.9.4	Buoy Weight Range (including internal ballast)	kg	235 - 287
A.2.9.5	Expected Lantern Weight ⁷	kg	15.0
A.2.9.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.9.7	Overall Buoy Silhouette	-	Figure A-2.9
A.2.9.8	Threaded lantern supports @200mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.9.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.9.10	Minimum Radar Range ²	nm	n/a
A.2.9.11	Minimum Radar Cross Sectional Area	m ²	10.0
A.2.9.12	Minimum Visible Height ³ (Hf) [at max mooring load]	m	1.0
A.2.9.13	Can Top	-	Yes
A.2.9.14	Conical Top	-	Optional
A.2.9.15	Retro-Reflective Area (B)	mm	155
A.2.9.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.9.17	Radar Reflector ⁴	-	Mandatory
A.2.9.18	Lantern Mount ⁵	-	Yes
A.2.9.19	Lantern Type Generally Used ¹	-	3 to 4 nm LED*
Lifting and Mooring Eyes			
A.2.9.20	Minimum Number of Steering Eyes	-	1
A.2.9.21	Minimum Number of Lifting Eyes	-	1
A.2.9.22	Minimum Number of Mooring eyes	-	1
A.2.9.23	Lifting Eye Safe Working Load (SWL)	kg	See Table 7.
A.2.9.24	Lifting Assembly Break Load	kg	See Table 7.
A.2.9.25	Mooring Eye Break Load	kg	See Table 7.
A.2.9.26	Minimum Mooring Eye Internal Diameter	mm	40
A.2.9.27	Maximum Mooring Eye Width	mm	55
A.2.9.28	Minimum Lifting /Handling Eye Internal Diameter	mm	100
A.2.9.29	Minimum/Maximum Mooring Load	kg	180/540
Environmental Conditions			
A.2.9.30	Maximum Marine Growth ⁶ – Operational	kg	20

A.2.9.31	Maximum Current – Operational	knots	2.0
A.2.9.32	Maximum Current – Survival	knots	10.0
A.2.9.33	Ice Accumulation	kg	20

Buoy Markings

A.2.9.34	Operation Reserve Buoyancy (R_b)	-	Yes
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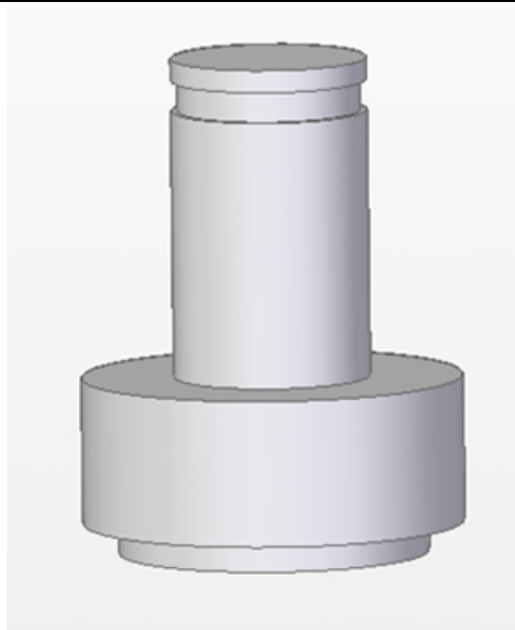
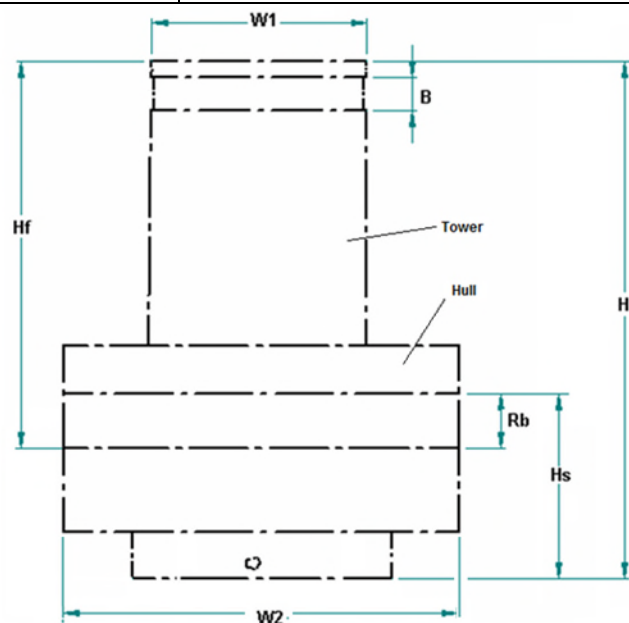


Figure A-2.9: Pillar Buoy Silhouette

A.2.10 Funnel Marker

Item	Dimensional Requirements	Units	Value
A.2.10.1	Minimum / Maximum Hull Diameter (W1)	m	0.80/1.00
A.2.10.2	Minimum / Maximum Tower Section Diameter(W2)	-	0.2/ 0.4
A.2.10.3	Maximum Buoy Height (H)	m	1.30
A.2.10.4	Buoy Weight Range (including internal ballast)	kg	15-23
A.2.10.5	Expected Lantern Weight ⁷	kg	5.0
A.2.10.6	Buoy Hull Shell Abrasion Resistance	mg	< 150 mg weight loss after 10,000 cycles
A.2.10.7	Overall Buoy Silhouette	-	Figure A-2.10
A.2.10.8	Threaded lantern supports @150mm Bolt Circle	-	Figure A-2.11
Functional Criteria			
A.2.10.9	Minimum Visual Range ¹ [at max mooring load]	nm	n/a
A.2.10.10	Minimum Radar Range ²	nm	n/a
A.2.10.11	Minimum Radar Cross Sectional Area	m ²	2.0
A.2.10.12	Minimum Visible Height ³ (Hf) [@ max mooring load]	m	0.50
A.2.10.13	Can Top	-	Yes
A.2.10.14	Conical Top	-	Optional
A.2.10.15	Retro-Reflective Area (B)	mm	50
A.2.10.16	Buoy Tilt Angle @ Maximum Operational Current	°	6.0
Equipment Requirements			
A.2.10.17	Radar Reflector ⁴	-	Optional
A.2.10.18	Lantern Mount ⁵	-	Optional
A.2.10.19	Lantern Type Generally Used	-	1.5 to 2 nm LED*
Lifting and Mooring Eyes			
A.2.10.20	Minimum Number of Handling Eyes	-	Optional (0 or 1)
A.2.10.21	Minimum Number of Lifting eyes	-	1
A.2.10.22	Minimum Number of Mooring eyes	-	1
A.2.10.23	Lifting Eye Safe Working Load (SWL)	kg	See Table 7
A.2.10.24	Lifting Assembly Break Load	kg	See Table 7
A.2.10.25	Mooring Eye Break Load	kg	See Table 7
A.2.10.26	Minimum Mooring Eye Internal Diameter	mm	35
A.2.10.27	Maximum Mooring Eye Width	mm	35
A.2.10.28	Minimum Lifting /Handling Eye Internal Diameter	mm	35
A.2.10.29	Minimum/Maximum Mooring Load	kg	10/ 90
Environmental Conditions			

A.2.10.30	Maximum Marine Growth ⁶ – Operational	kg	5
A.2.10.31	Maximum Current – Operational	knots	2.0
A.2.10.32	Maximum Current – Survival	knots	10.0
A.2.10.33	Ice Accumulation	kg	5
Buoy Markings			
A.2.10.34	Operation Reserve Buoyancy ($R_{\infty b}$)	-	Yes

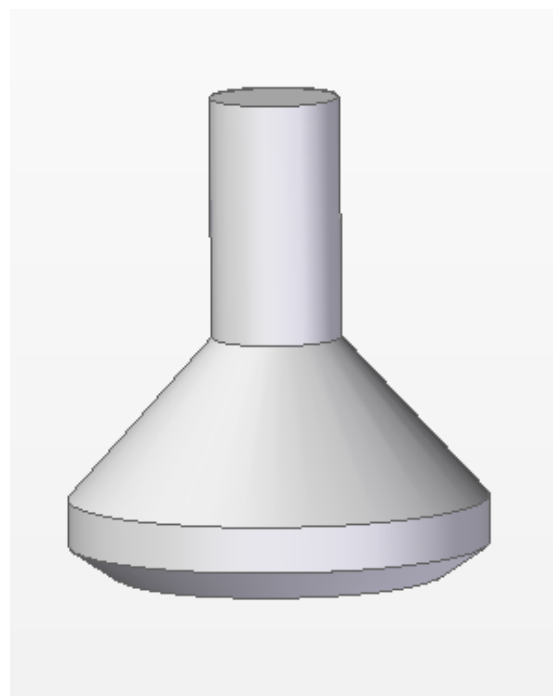
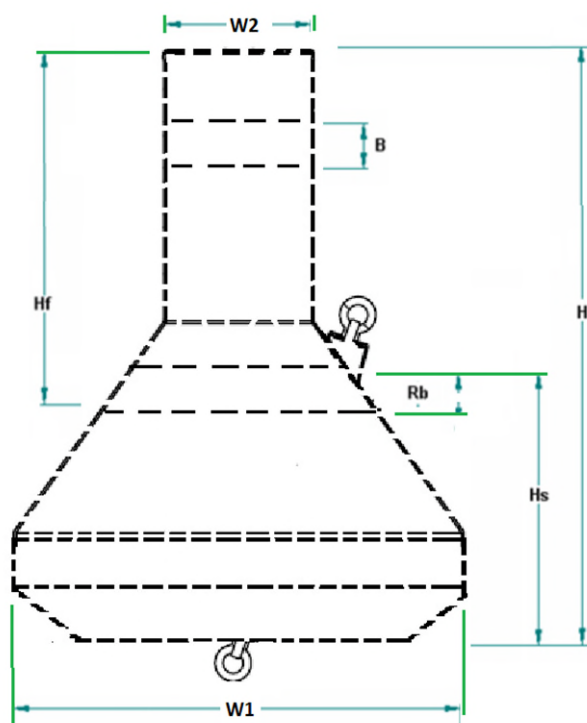


Figure A-2.106: Small Funnel Buoy Silhouette

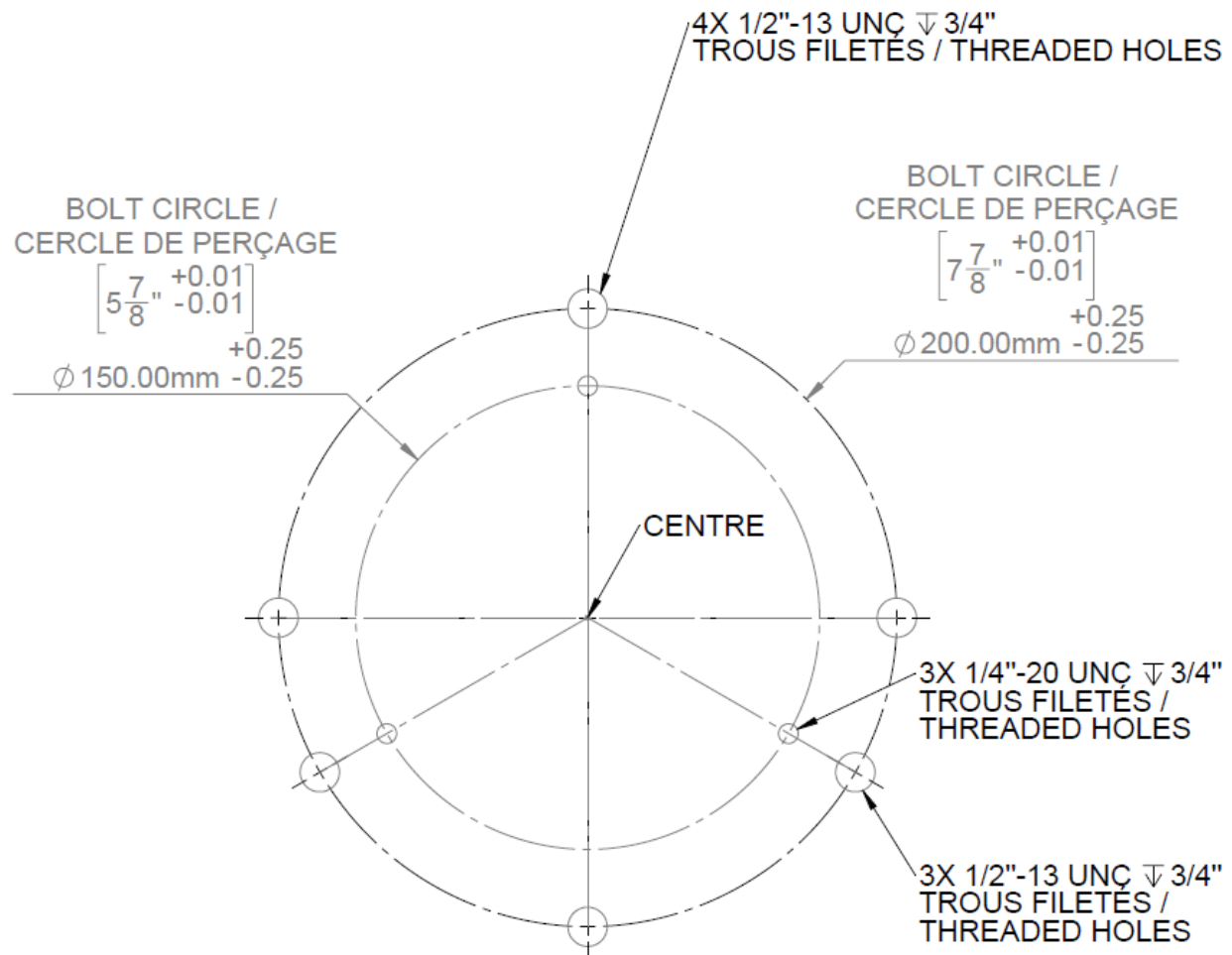
* LED: Light Emitting Diode

† River Buoy Silhouette

‡ Low Draft River Buoy Silhouette

- 1) Visual Range assumes that the observer is 3m above the water level in clear weather with calm seas and an nominal visibility of 10 nautical miles. It is also assumed that there are no background features to obscure the buoy.
- 2) Radar Range assumes an X-Band radar antenna 3m above the water level in clear weather and calm seas.
- 3) Visible height is defined as the distance from the waterline to the top of the buoy. The waterline calculated in the delivered condition when floated in fresh water, including radar reflector and excluding the mooring.
- 4) Radar Reflectors, where required shall be internally mounted.
- 5) Lantern Mount, where required shall allow for the mounting of a self-contained LED lantern at the top of the buoy without interference with the lifting eyes.
- 6) Marine growth includes any accumulated annual marine growth on the buoy or chain.
- 7) Expected lantern weight does not include the weight of the adaptor plate or any interface to the top of the buoy.

A.2.11 Lantern Bolt Pattern



CCG STANDARD MOUNTING PATTERNS /
CERCLES DE MONTAGE STANDARDS DE LA GCC

Figure A-2.11: Threaded Lantern Area

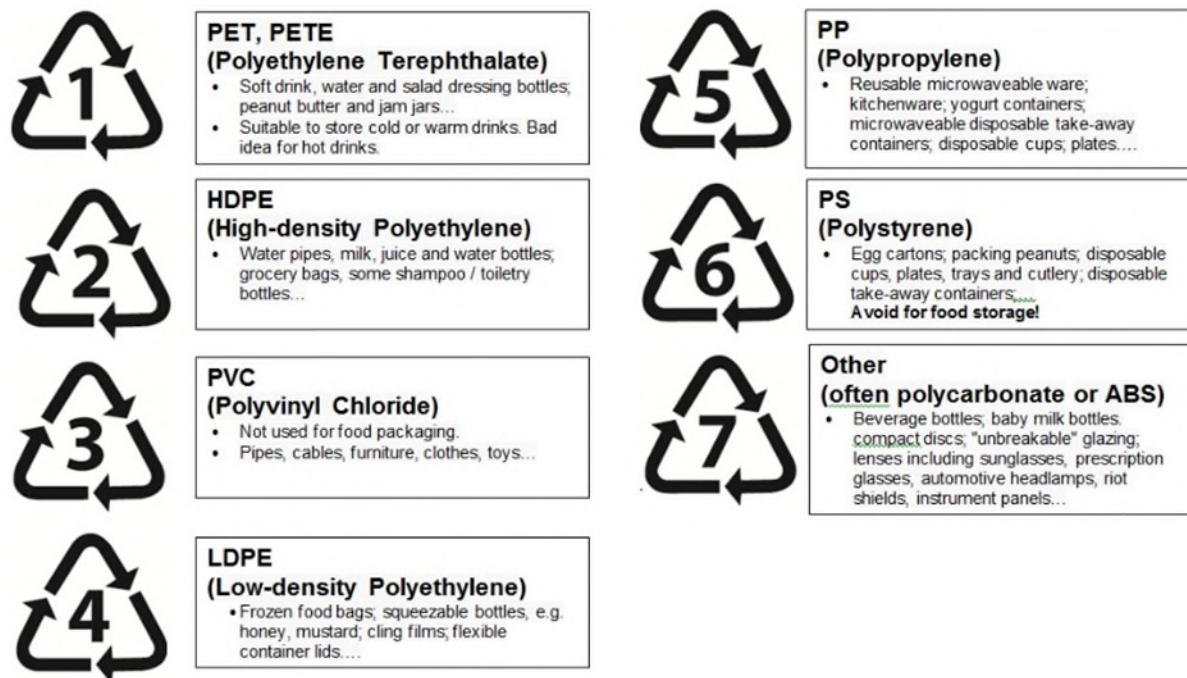


Figure A-2. 12: Typical Plastic recycling marks

APPENDIX B REFERENCED STANDARDS

The documents listed in this appendix are to be referenced in Section 2 of this specification. This section does not include documents cited in other sections of this specification. The following is a sample list of standards to adhere to in the manufacturing of these buoys. Vendors/manufacturers are to meet the most recent version of each standard.

Table 14: Referenced Standards and Tests for Plastic

1.	ASTM D4020	Standard Specification for Ultra-High-Molecular-Weight Polyethylene Molding and Extrusion Materials
2.	MIL-P-24249A(1)	Plastic Material, Cellular Polyurethane, Foam in Place, Rigid Void Filler, Foam-in-place Large scale and installation.
3.	ASTM D3350	Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
4.	ASTM A123/123M	Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
5.	ASTM D4976	Standard Specification for Polyethylene Plastics Moulding and Extrusion Materials
6.	ASTM D3935	Standard Specification for Polycarbonate (PC) Unfilled and Reinforced Material
7.	ISO 9352	Plastics-Determination of resistance to wear by abrasive wheels,
8.	ASTM D2412	Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

Table 15: Referenced Standards for Metals

9.	ASTM A36	Standard Specification for Carbon Structural Steel
10.	ASTM A276	Standard Specification for Stainless Steel Bars and Shapes
11.	ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
12.	ASTM B221	Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

Table 16: Referenced Standards for Concrete

13.	CAN/CSA –A23.1	Concrete Materials and Methods of Concrete Construction
14.	ASTM C33	Standard Specification for Concrete Aggregates
15.	ASTM C150	Standard Specification for Portland Cement

Table 17: Referenced Standards for Colour

16.	IALA E-108	Recommendations for the surface colours used as visual signals on aids to navigation
17.	ASTM D2244	Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
18.	ASTM D2565	Standard Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications

19	IALA V-128	Technical Performance Requirements for VTS Systems
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Table 18: Miscellaneous Departmental Publications

20.	TP-968 E/F	The Canadian Aids to Navigation System.
21	Schedule I	Canadian Environmental Protection Act (CEPA) Toxic Substance list
22	Schedule 6	Transport Canada SOR-2007-128 -Tackle Regulations

APPENDIX C DEFINITIONS

Table 19: General Definitions

Draft	The vertical distance between the waterline and the bottom most part of the buoy, usually expressed in meters. Maximum draft - is obtained when the <i>Reserve Buoyancy</i> is zero Minimum draft - is obtained when the <i>Reserve Buoyancy</i> is at its greatest
Visible Height	The vertical distance from the waterline to the top of the buoy. Maximum Visible Height - is obtained when the minimum mooring mass is used and highest available reserve buoyancy. Minimum Visible Height - is obtained when the recommended maximum mooring mass is used and lowest available reserve buoyancy.
Operational Surcharge Load	Sum of all loads incurred in service, i.e. marine growth and ice accumulation. Maximum values to be used for design are defined in Appendix A for each buoy type.
Reserve Buoyancy (Rb)	Defined as difference in buoyancy between minimum and maximum design waterline levels depending on overall mooring mass conditions.
Plastic	Synthetic organic polymer material capable of being moulded, formed, extruded, or cast into various shapes.
Safe Working Load (SWL)	The Safe Working Load (SWL) is a safety factor imposed onto a lifting mechanism and is dictated by ref.22.
Survival Environmental Conditions	Environmental conditions over and above the specified performance requirements in which the buoy is capable of functioning once operational conditions return without damage.
Waterline	The line of water along the buoy hull in the water.
Undamaged Condition	Undamaged means a buoy in good condition retaining its original shape and a watertight hull. The buoy must be recognizable as an aid to navigation in all operational conditions defined herein.
Damaged Condition	Damaged means a buoy can no longer perform as an aid to navigation in the prescribed operational conditions.
Buoy Tilt Angle	The Buoy's tilt angle (α) is defined as the angle that is swept from vertical.

Ice Exposure	Ice exposure is the frequency at which a buoy may come in contact with particles of ice. Light exposure is when buoys that are left in sheltered areas over the winter see some ice formation on the water but where there is no ice movement. Occasional exposure indicates that these buoys may come in contact with ice fragments at the end of the navigation season.
Ice Accumulation	The load on a buoy surface as a result of ice buildup.
Operational Load	Mass that includes the weight of the mooring chain, lantern external counterweights, accumulated sea growth and ice accumulation and excludes the anchor weight.
Damage	A damaged buoy is one that has been compromised and no longer functions as a Navigational Aid. It no longer displays the correct visible height above water or tilts heavily such that the lantern light is not very visible by mariners at night.
Modular	A modular buoy is a buoy where at a minimum the hull and the tower sections of the buoy are separate pieces that are structurally joined together via a supporting frame.

Table 20: Definitions: Hardware

Handling Eye	An attachment point above the water line that may be part of or separate from the buoy hull that can be grappled and facilitates buoy handling activities; not rated for lifting.
Lifting Eye	An attachment point above the water line rated to lift the maximum buoy and mooring assembly loads.
Mooring Eye	An attachment point below the water line, to which the mooring is connected, rated to lift the maximum mooring assembly loads.
Lifting Assembly	The lifting assembly is composed of the <i>Lifting Eye(s)</i> , the <i>Mooring Eye</i> , and a mechanical linkage connecting the two or more components. The full assembly is rated to lift the maximum loads with the safety allowance.

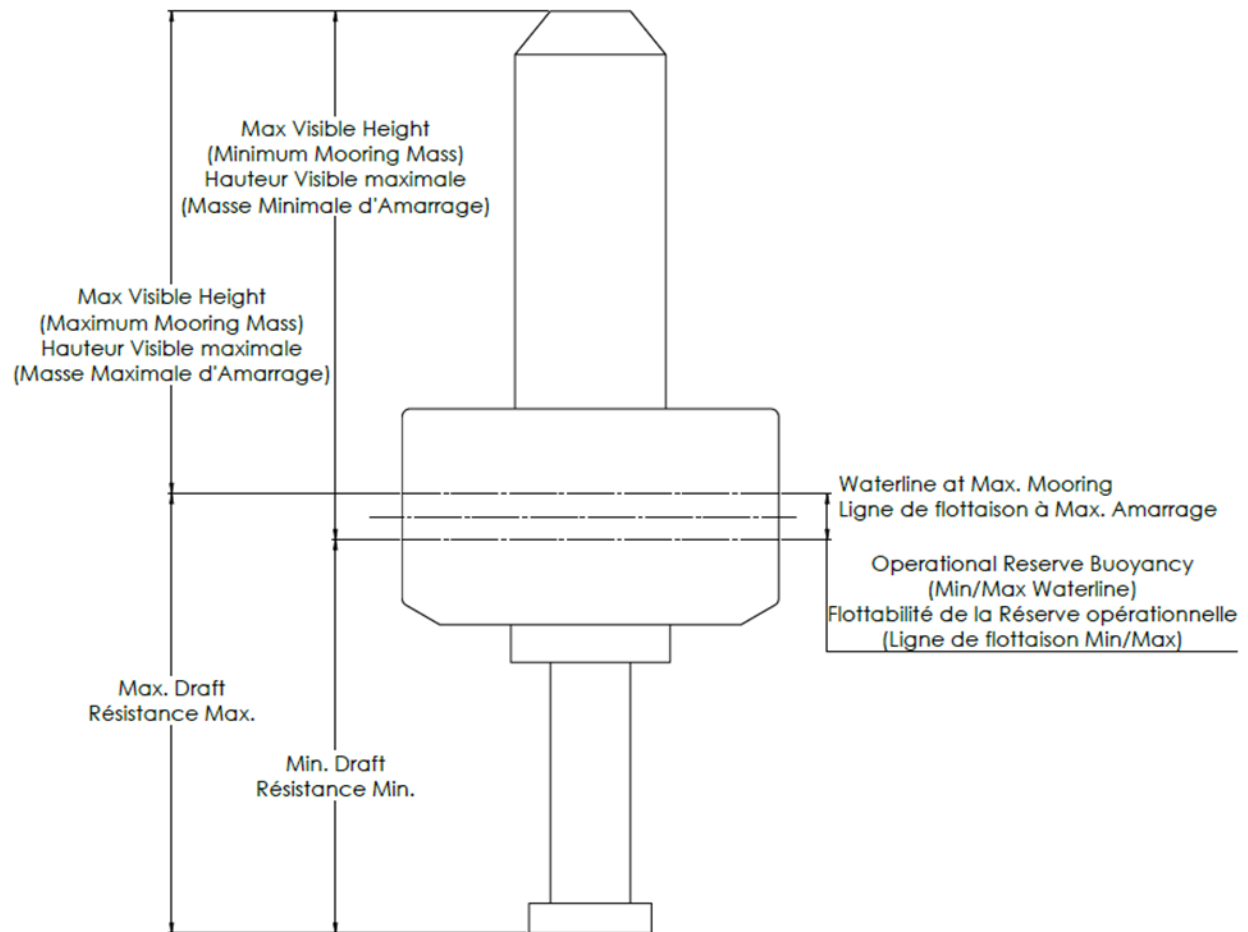


Figure A-2.7: Buoy Terminology

Solicitation No. - N° de l'invitation F7047-231212/B	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur 008ERD
Client Ref. No. - N° de réf. du client F7047-231212-008ERD	File No. - N° du dossier F7047-231212-008ERD	CCC No./N° CCC - FMS No./N° VME

ANNEX "C"

BASIS OF PAYMENT

There are ten configurations of the Plastic Buoys

The Offeror must provide firm unit prices for each configuration within each category they are submitting an offer for;

a. All prices must be in Canadian currency;

b. All prices must include customs duties;

c. All prices must not include Applicable Taxes;

d. Offerors must submit firm unit prices for each item per category(Total 10 Categories) that they are offering on listed below to be given further consideration.
A financial offer addressing only a portion of the offered requirement will be declared non-responsive

e. The Offeror is requested to insert "\$0.00" for any cost of the cost elements for which it does not intend to charge - If any cost element is left blank, Canada will insert "\$0.00" for that element; and

Note 1: all Quantities contained in the tables below represent estimates and will be used for Evaluation purposes ONLY

Note 2: These italicized Instructions to Offerors will not be included in any resulting offer.

Solicitation No. - N° de l'invitation
F7047-231212/B
Client Ref. No. - N° de réf. du client
F7047-231212-008ERD

Amd. No. - N° de la modif.
File No. - N° du dossier
F7047-231212-008ERD

Buyer ID - Id de l'acheteur
008ERD
CCC No./N° CCC - FMS No./N° VME

Table 3-Category 3: Medium Spar with hull diameters of 0.50 to 0.70 metres (estimated quantities are for evaluation purposes only and will be deleted when the standing offer is issued)

		With the delivery to CCG St. John's Base, Newfoundland	With the delivery to CCG Dartmouth, Nova Scotia	With the delivery to CCG Charlottetown, Prince Edward Island	With the delivery to CCG Québec City, Québec	With the delivery to CCG Sorel Base, Quebec	With the delivery to CCG Parry Sound, Ontario	With the delivery to CCG Prescott Base, Ontario	With the delivery to CCG Hay River Base, Northwest Territories	With the delivery to CCG Victoria Base, British Columbia	With the delivery to CCG Seal Cove Base, Prince Rupert, British Columbia	With the delivery to CCG Selkirk Base, Manitoba												
		QTY A	Price B	QTY C	Price D	QTY E	Price F	QTY G	Price H	QTY I	Price J	QTY K	Price L	QTY M	Price N	QTY O	Price P	QTY Q	Price R	QTY S	Price T	QTY U	Price V	Extended Price W
Year 1	Medium Spar with hull diameters of 0.50 to 0.70 metres	200		40		50		25		25		120		120		1		10		5		5		W1 \$
		1		10		1		1		1		1		1		1		1		1		1		W2 \$
Year 2	Medium Spar with hull diameters of 0.50 to 0.70 metres	200		40		50		25		25		120		120		1		10		5		5		W3 \$
		1		10		1		1		1		1		1		1		1		1		1		W4 \$
Option Year 1	Medium Spar with hull diameters of 0.50 to 0.70 metres	200		40		50		25		25		120		120		1		10		5		5		W5 \$
		1		10		1		1		1		1		1		1		1		1		1		W6 \$
		Category 3 Evaluated Price =The sum of Extended Price W of Year 1 , Year 2 and Option Year 1 (W1 to W6)																						W7 \$

Annex “D” - PLASTIC BUOYS

OFFER EVALUATION MATRIX

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Introduction

This offer evaluation matrix will be used to evaluate the Offeror’s proposal to satisfy the requirements of the **Plastic Buoys** for the Canadian Coast Guard. Based on the Compliance Code and Validation Method (if specified) the Offeror must indicate the appropriate Proposal Reference(s) in the matrix.

The evaluation process is broken down into two segments: Mandatory Requirements, and Rated Criteria.

The Mandatory Requirements must be met in order for the Offeror’s proposal to be further considered for evaluation. Mandatory requirements are assessed as either compliant or non-compliant prior to the evaluation of point-rated requirements, and any non-compliant proposals will be eliminated. For the purposes of this Solicitation, mandatory requirements are those requirements identified in the Solicitation that the Offeror “must” satisfy.

The Rated Criteria are based on management and technical features of the Offeror’s response that are beyond the minimum mandatory requirements stated in the Performance Specification (Technical) and SOW (Management). These features are assessed and scored to determine the proposal’s added value above the mandatory requirements.

1.1. EVALUATION PROCESS

The Offers will be evaluated in the following order:

- (1) Evaluation of Mandatory Requirements and Technical sections as detailed in Tables A1;
- (2) Evaluation of Rated Criteria as detailed in Tables B1; and
- (3) Price.

FAILURE TO MEET ANY OF THE MANDATORY REQUIREMENTS STATED HEREIN WILL RESULT IN THE OFFER BEING DECLARED AS NON-COMPLIANT.

The scoring will constitute a maximum of 100 points score for each of the ten buoys. The Offeror with the highest final score will be the winner of this offer selection process. The template for scoring is as follows:

Section: Small Buoy	Points Allocated	Offeror's Score
Technical Rated (Table B1)	50	
Pricing	50	
Total Score	100	

The Technical Rated Score will constitute 50% of the offer evaluation.

The Price section will constitute 50% of the offer evaluation.

MATRIX COMPLETION

The Offeror shall complete the A1 compliance table in full indicating down to the lowest level (e.g. Para number, sub-Para number, etc.) in their Offer supporting documentation where the compliance can be seen and proven to the satisfaction of the evaluation team.

Where requested, the Offeror shall supply the appropriate documentation as demanded by the **Validation Method** in accordance with the following:

- Submit Calculations (SC): Provide Engineering Calculations to validate that this requirement has been met;
- Submit Test Data (STD): Provide test data from an independent laboratory to validate that this requirement has been met;
- Statement of Conformance (SOC): Written acknowledgement that this requirement has been met;
- Submit Data (SD): Provide Engineering Drawings/Documentation to validate that this requirement has been met;

1.2. COMPLIANCE TABLES AND RATED REQUIREMENTS TABLES

- Table A1 - Technical Mandatory Requirement Listing
- Table B1 – Technical Rated Criteria

TABLE A1 – TECHNICAL MANDATORY REQUIREMENT LISTING

All items specified in the Technical Statement of Requirements (TSoR) are mandatory requirements and **must be met** for **each of the different types** of buoy to be considered as part of the offer. The following are specific responses required from the Offeror in order to validate their submission:

- (1) Items TC01 through TC18 refer to the mandatory requirements that the Offeror must provide a response. The validation method column is the manner the Offeror must respond in accordance with aforementioned paragraph 1.1;
- (2) The Offeror shall use the “Offeror’s Response” column to provide a brief comment to substantiate the validation method or provide a reference to their relevant section of the Offeror’s proposal;
- (3) If a value is stated the Offeror must clearly indicate this method in the prescribed validation method; and
- (4) A greyed out cell in the column indicates that there is no specific mandatory statement for the item.

Item	TSOR Reference	Description	Validation Method	Offeror’s Response
TC01	2.2	Operational Requirements		
TC02	2.2.1	Areas of Operation		
TC03	2.2.2	Environmental Conditions (TR1-TR14)	SOC	
TC04	2.2.3	Operational Service (TR15-17)	SOC	
TC05	2.2.4	Life Expectancy	SOC	
TC06	2.2.5	Functional Criteria (TR18-21)	STD	
TC07	2.2.6	Stability Criteria (TR22-24)	STD	
TC08	2.3	Design requirements		
TC09	2.3.1	Materials (TR25-26)	SD	
TC10	2.3.2	Design, Dimensions and Surface Finish(TR27-33)	SD	
TC11	2.3.3	Structural Capabilities (TR34-37)		
TC12	2.3.3.1	Transference of Loads	STD	
TC13	2.3.3.2	Lifting and Mooring Attachments	SD	
TC14	2.3.3.3	Abrasion Resistance	STD	
TC15	2.3.4	Exterior Outfit (TR38-44)	SD	

Item	TSOR Reference	Description	Validation Method	Offeror's Response
TC16	2.3.5	Interior Outfit (TR45-46)	SD	
TC17	2.3.6	Colour (TR47-49)	STD	
TC18	2.3.7	Markings (TR50-51)	SD	

Buoy Types

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.1	Small Spar			
A.2.1.1	Minimum / Maximum Hull Diameter (W)	0.25/0.38 m	SD	
A.2.1.3	Maximum Buoy Height (H)	3.0 m	SD	
A.2.1.4	Buoy Weight Range (including internal ballast)	34 – 42 kg	SD	
A.2.1.5	Expected Lantern Weight	5.0 kg	SD	
A.2.1.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.1.8	Threaded lantern supports @150mm Bolt Circle	See Figure A-2.11	SD	
A.2.1.11	Minimum Radar Cross Sectional Area	2.0 m²	STD	
A.2.1.12	Minimum Air Draft (Hf) [at max mooring load]	1.10 m	SC	
A.2.1.13	Can Top	Yes	SOC	
A.2.1.14	Conical Top	Optional	Not Evaluated	N/A
A.2.1.15	Retro-Reflective Area (B)	155 mm	SD	
A.2.1.16	Buoy Tilt Angle@ Maximum Operation Current	6.0°	SOC	
A.2.1.17	Radar Reflector Availability	Mandatory	SOC	
A.2.1.18	Lantern Mount	Yes	SOC	
A.2.1.19	Lantern Type Generally Used	1.5 to 2 nm LED	SD	
A.2.1.20	Minimum Number of Handling Eyes	1	SD	
A.2.1.21	Minimum Number of Lifting Eyes	0	SD	
A.2.1.22	Minimum Number of Mooring eyes	1	SD	
A.2.1.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.1.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.1.28	Minimum Lifting /Handling Eye Internal Diameter	40 mm	SD	
A.2.1.29	Minimum/ Maximum Mooring Load	20/55 kg	SD	
A.2.1.30	Maximum Marine Growth – Operational	10 kg	SD	
A.2.1.31	Maximum Current – Operational	2.0 knots	SD	
A.2.1.32	Maximum Current – Survival	10.0 knots	SD	
A.2.1.33	Ice Accumulation	10 kg	SD	
A.2.1.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.2	Small Marker			
A.2.2.1	Minimum / Maximum Hull Diameter (W)	0.35/0.55 m	SD	
A.2.2.3	Maximum Buoy Height (H)	1.30 m	SD	
A.2.2.4	Buoy Weight Range (including internal ballast)	9-12 kg	SD	
A.2.2.5	Expected Lantern Weight	5.0 kg	SD	
A.2.2.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.2.8	Threaded lantern supports @150mm Bolt Circle	See Figure A-2.11	SD	
A.2.2.11	Minimum Radar Cross Sectional Area	2.0 m²	STD	
A.2.2.12	Minimum Air Draft (Hf) [at max mooring load]	0.35 m	SC	
A.2.2.13	Can Top	Yes	SOC	
A.2.2.14	Conical Top	Optional	Not Evaluated	N/A
A.2.2.15	Retro-Reflective Area (B)	155 mm	SD	
A.2.2.16	Buoy Tilt Angle@ Maximum Operation Current	6.0°	SOC	
A.2.2.17	Radar Reflector Availability	Mandatory	SOC	
A.2.2.18	Lantern Mount	Optional	Not Evaluated	N/A
A.2.2.19	Lantern Type Generally Used	1.5 to 2 nm LED	SD	
A.2.2.20	Minimum Number of Handling Eyes	Optional (0 or 1)	Not Evaluated	N/A
A.2.2.21	Minimum Number of Lifting Eyes	0	SD	
A.2.2.22	Minimum Number of Mooring eyes	1	SD	
A.2.2.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.2.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.2.28	Minimum Lifting /Handling Eye Internal Diameter	100 mm	SD	
A.2.2.29	Minimum/ Maximum Mooring Load	5/25 kg	SD	
A.2.2.30	Maximum Marine Growth – Operational	5 kg	SD	
A.2.2.31	Maximum Current – Operational	2.0 knots	SD	
A.2.2.32	Maximum Current – Survival	10.0 knots	SD	
A.2.2.33	Ice Accumulation	5 kg	SC	
A.2.2.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.3	Medium Spar			
A.2.3.1	Minimum / Maximum Hull Diameter (W)	0.50/0.70 m	SD	
A.2.3.3	Maximum Buoy Height (H)	4.5 m	SD	
A.2.3.4	Buoy Weight Range (including internal ballast)	81-110kg	SD	
A.2.3.5	Expected Lantern Weight	15.0 kg	SD	
A.2.3.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.3.8	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.3.11	Minimum Radar Cross Sectional Area	10.0 m²	STD	
A.2.3.12	Minimum Air Draft (Hf) [at max mooring load]	1.10 m	SC	
A.2.3.13	Can Top	Yes	SOC	
A.2.3.14	Conical Top	Optional	Not Evaluated	N/A
A.2.3.15	Retro-Reflective Area (B)	205 mm	SD	
A.2.3.16	Buoy Tilt Angle@ Maximum Operation Current	6.0°	SOC	
A.2.3.17	Radar Reflector	Mandatory	SOC	
A.2.3.18	Lantern Mount	Yes	SOC	
A.2.3.19	Lantern Type Generally Used	3 to 4 nm LED	SD	
A.2.3.20	Minimum Number of Handling Eyes	0	SD	
A.2.3.21	Minimum Number of Lifting Eyes	1	SD	
A.2.3.22	Minimum Number of Mooring Eyes	1	SD	
A.2.3.23	Lifting Eye Safe Working Load (SWL)	*See Table 7	SC	
A.2.3.24	Lifting Assembly Break Load	*See Table 7	SC	
A.2.3.25	Mooring Eye Break Load	*See Table 7	SC	
A.2.3.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.3.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.3.28	Minimum Lifting /Handling Eye Internal Diameter	100 mm	SD	
A.2.3.29	Minimum/ Maximum Mooring Load	200/ 450 kg	SD	
A.2.3.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.3.31	Maximum Current – Operational	2.0 knots	SD	
A.2.3.32	Maximum Current – Survival	10.0 knots	SD	
A.2.3.33	Ice Accumulation	15 kg	SD	
A.2.3.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

(*) - refers to the Performance Specification

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.4	Medium Marker			
A.2.4.1	Minimum / Maximum Hull Diameter (W)	0.70/0.80 m	SD	
A.2.4.3	Maximum Buoy Height (H)	1.8 m	SD	
A.2.4.4	Buoy Weight Range (including internal ballast)	30 – 37 kg	SD	
A.2.4.5	Expected Lantern Weight	15.0 kg	SD	
A.2.4.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.4.8	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.4.11	Minimum Radar Cross Sectional Area	2.0 m ²	STD	
A.2.4.12	Minimum Air Draft (Hf) [at max mooring load]	0.60 m	SC	
A.2.4.13	Can Top	Yes	SOC	
A.2.4.14	Conical Top	Optional	Not Evaluated	N/A
A.2.4.15	Retro-Reflective Area (B)	205 mm	SD	
A.2.4.16	Buoy Tilt Angle@ Maximum Operation Current	6.0°	SOC	
A.2.4.17	Radar Reflector	Mandatory	SOC	
A.2.4.18	Lantern Mount	Optional	Not Evaluated	N/A
A.2.4.19	Lantern Type Generally Used	3 to 4 nm LED	SD	
A.2.4.20	Minimum Number of Handling Eyes	Optional(0 or 1)	Not Evaluated	N/A
A.2.4.21	Minimum Number of Lifting Eyes	0	SD	
A.2.4.22	Minimum Number of Mooring eyes	1	SD	
A.2.4.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.4.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.4.28	Minimum Lifting /Handling Eye Internal Diameter	100 mm	SD	
A.2.4.29	Minimum/ Maximum Mooring Load	75/160 kg	SD	
A.2.4.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.4.31	Maximum Current – Operational	2.0 knots	SD	
A.2.4.32	Maximum Current – Survival	10.0 knots	SD	
A.2.4.33	Ice Accumulation	15 kg	SD	
A.2.4.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

(*)- refers to the Performance Specification

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.5	River Buoys			
A.2.5.1	Minimum / Maximum Hull Diameter (W)	0.75/ 1.3 m	SD	
A.2.5.3	Maximum Buoy Height (H)	2.2 m	SD	
A.2.5.4	Buoy Weight Range (including internal ballast)	41 – 50 kg	SD	
A.2.5.5	Expected Lantern Weight	5.0 kg	SD	
A.2.5.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.5.7	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.5.11	Minimum Radar Cross Sectional Area	10.0 m²	STD	
A.2.5.12	Minimum Air Draft (Hf) [at max mooring load]	0.50 m	SC	
A.2.5.13	Can Top	Yes	SOC	
A.2.5.14	Conical Top	Optional	Not Evaluated	N/A
A.2.5.15	Retro-Reflective Area (B)	155 mm	SD	
A.2.5.17	Radar Reflector	Yes	SOC	
A.2.5.18	Lantern Mount	Optional	Not Evaluated	N/A
A.2.5.19	Lantern Type Generally Used	1.5 to 2 nm LED	SD	
A.2.5.20	Minimum Number of Handling Eyes	Optional(0 or 1)	Not Evaluated	N/A
A.2.5.21	Minimum Number of Lifting Eyes	1	SD	
A.2.5.22	Minimum Number of Mooring eyes	2	SD	
A.2.5.23	Lifting Eye Safe Working Load (SWL)	*See Table 7	SC	
A.2.5.24	Lifting Assembly Break Load	*See Table 7	SC	
A.2.5.25	Mooring Eye Break Load	*See Table 7	SC	
A.2.5.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.5.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.5.28	Minimum Lifting /Handling Eye Internal Diameter	45 mm	SD	
A.2.5.29	Minimum/ Maximum Mooring Load	100/ 150 kg	SD	
A.2.5.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.5.31	Maximum Current – Operational	4.0 knots	SD	
A.2.5.32	Maximum Current – Survival	10.0 knots	SD	
A.2.5.33	Ice Accumulation	15 kg	SD	
A.2.5.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

(*)- refers to the Performance Specification

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.6	Low Draft River Buoys			
A.2.6.1	Minimum / Maximum Hull Diameter (W)	1.0 m	SD	
A.2.6.3	Maximum Buoy Height (H)	2.2 m	SD	
A.2.6.4	Buoy Weight Range (including internal ballast)	65 – 110 kg	SD	
A.2.6.5	Expected Lantern Weight	5.0 kg	SD	
A.2.6.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles 7)	STD (see Table 7)	
A.2.6.8	Threaded lantern supports @150 mm Bolt Circle	*See Figure A-2.11	SD	
A.2.6.11	Minimum Radar Cross Sectional Area	10.0 m²	STD	
A.2.6.12	Minimum Air Draft (Hf) [at max mooring load]	0.50 m	SC	
A.2.6.13	Can Top	Yes	SOC	
A.2.6.14	Conical Top	Optional	Not Evaluated	N/A
A.2.6.15	Retro-Reflective Area (B)	155 mm	SD	
A.2.6.16	Radar Reflector	Yes	SOC	
A.2.6.18	Lantern Mount	Optional	Not Evaluated	N/A
A.2.6.19	Lantern Type Generally Used	1.5 to 2 nm LED	SD	
A.2.6.20	Minimum Number of Handling Eyes	Optional(0 or 1)	Not Evaluated	N/A
A.2.6.21	Minimum Number of Lifting Eyes	0	SD	
A.2.6.22	Minimum Number of Mooring eyes	1	SD	
A.2.6.23	Lifting Eye Safe Working Load (SWL)	*See Table 7	SC	
A.2.6.24	Lifting Assembly Break Load	*See Table 7	SC	
A.2.6.25	Mooring Eye Break Load	*See Table 7	SC	
A.2.6.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.6.27	Maximum Mooring Lug Width	75 mm	SD	
A.2.6.28	Minimum Lifting /Handling Eye Internal Diameter	45 mm	SD	
A.2.6.29	Minimum/ Maximum Mooring Load	0/ 50 kg	SD	
A.2.6.30	Maximum Marine Growth – Operational	10 kg	SD	
A.2.6.31	Maximum Current – Operational	4.0 knots	SD	
A.2.6.32	Maximum Current – Survival	10.0 knots	SD	
A.2.6.33	Ice Accumulation	15 kg	SD	
A.2.6.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

(*)- refers to the Performance Specification

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.7	Medium- Large Marker			
A.2.7.1	Minimum / Maximum Hull Diameter (W)	0.81/1.0m	SD	
A.2.7.3	Maximum Buoy Height (H)	2.0 m	SD	
A.2.7.4	Buoy Weight Range (including internal ballast)	60-70 kg	SD	
A.2.7.5	Expected Lantern Weight	15.0 kg	SD	
A.2.7.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.7.8	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.7.11	Minimum Radar Cross Sectional Area	10.0 m²	STD	
A.2.7.12	Minimum Air Draft (Hf) [at max mooring load]	1.00 m	SC	
A.2.7.13	Can Top	Yes	SOC	
A.2.7.14	Conical Top	Optional	Not Evaluated	N/A
A.2.7.15	Retro-Reflective Area (B)	205 mm	SD	
A.2.7.17	Radar Reflector	Yes	SD	
A.2.7.18	Lantern Mount	Optional(0 or 1)	Not Evaluated	N/A
A.2.7.19	Lantern Type Generally Used	3 to 4 nm LED	SD	
A.2.7.20	Minimum Number of Handling Eyes	Optional (0 or 1)	Not Evaluated	N/A
A.2.7.21	Minimum Number of Lifting Eyes	0	SD	
A.2.7.22	Minimum Number of Mooring eyes	1	SD	
A.2.7.26	Minimum Mooring Eye Internal Diameter	40 mm	SD	
A.2.7.27	Maximum Mooring Lug Width	55 mm	SD	
A.2.7.28	Minimum Lifting /Handling Eye Internal Diameter	n/a	SD	
A.2.7.29	Minimum/ Maximum Mooring Load	150/ 300 kg	SD	
A.2.7.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.7.31	Maximum Current – Operational	2.0 knots	SD	
A.2.7.32	Maximum Current – Survival	10.0 knots	SD	
A.2.7.33	Ice Accumulation	15 kg	SD	
A.2.7.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.8	Large Marker			
A.2.8.1	Minimum / Maximum Hull Diameter (W)	1.1/1.3 m	SD	
A.2.8.3	Maximum Buoy Height (H)	2.4 m	SD	
A.2.8.4	Buoy Weight Range (including internal ballast)	100-140 kg	SD	
A.2.8.5	Expected Lantern Weight	15.0 kg	SD	
A.2.8.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.8.8	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.8.11	Minimum Radar Cross Sectional Area	10.0 m ²	STD	
A.2.8.12	Minimum Air Draft (Hf) [at max mooring load]	1.20 m	SC	
A.2.8.13	Can Top	Yes	SOC	
A.2.8.14	Conical Top	Yes/ No	SOC	
A.2.8.15	Retro-Reflective Area (B)	205 mm	SD	
A.2.8.17	Radar Reflector	Yes	SOC	
A.2.8.18	Lantern Mount	Optional(0 or 1)	Not Evaluated	N/A
A.2.8.19	Lantern Type Generally Used	3 to 4 nm LED	SD	
A.2.8.20	Minimum Number of Handling Eyes	Optional (0 or 1)	Not Evaluated	N/A
A.2.8.21	Minimum Number of Lifting Eyes	0	SD	
A.2.8.22	Minimum Number of Mooring eyes	1	SD	
A.2.8.26	Minimum Mooring Eye Internal Diameter	40 mm	SD	
A.2.8.27	Maximum Mooring Lug Width	55 mm	SD	
A.2.8.28	Minimum Lifting /Handling Eye Internal Diameter	45 mm	SD	
A.2.8.29	Minimum/ Maximum Mooring Load	200/ 550 kg	SD	
A.2.8.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.8.31	Maximum Current – Operational	2.0 knots	SD	
A.2.8.32	Maximum Current – Survival	10.0 knots	SD	
A.2.8.33	Ice Accumulation	15 kg	SD	
A.2.8.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.9	Pillar Buoy			
A.2.9.1	Minimum / Maximum Hull Diameter (W)	1.4/1.5 m	SD	
A.2.9.2	Minimum / Maximum Tower Section Diameter	0.5 /0.7	SD	
A.2.9.3	Maximum Buoy Height (H)	2.4 m	SD	
A.2.9.4	Buoy Weight Range (including internal ballast)	235 – 287 kg	SD	
A.2.9.5	Expected Lantern Weight	15.0 kg	SD	
A.2.9.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.9.8	Threaded lantern supports @200 mm Bolt Circle	See Figure A-2.11	SD	
A.2.9.11	Minimum Radar Cross Sectional Area	10.0 m²	STD	
A.2.9.12	Minimum Air Draft (Hf) [at max mooring load]	1.00 m	SC	
A.2.9.13	Can Top	Yes	SOC	
A.2.9.14	Conical Top	Optional	Not Evaluated	N/A
A.2.9.16	Retro-Reflective Area (B)	155 mm	SD	
A.2.9.17	Radar Reflector	Yes	SD	
A.2.9.18	Lantern Mount	Yes	SD	
A.2.9.19	Lantern Type Generally Used	3 to 4 nm LED	SD	
A.2.9.20	Minimum Number of Handling Eyes	1	SD	
A.2.9.21	Minimum Number of Lifting Eyes	1	SD	
A.2.9.22	Minimum Number of Mooring eyes	1	SD	
A.2.9.23	Lifting Eye Safe Working Load (SWL)	*See Table 7	SC	
A.2.9.24	Lifting Assembly Break Load	*See Table 7	SC	
A.2.9.25	Mooring Eye Break Load	*See Table 7	SC	
A.2.9.26	Minimum Mooring Eye Internal Diameter	40 mm	SD	
A.2.9.27	Maximum Mooring Lug Width	55 mm	SD	
A.2.9.28	Minimum Lifting /Handling Eye Internal Diameter	100 mm	SD	
A.2.9.29	Minimum/ Maximum Mooring Load	180/540 kg	SD	
A.2.9.30	Maximum Marine Growth – Operational	20 kg	SD	
A.2.9.31	Maximum Current – Operational	2.0 knots	SD	
A.2.9.32	Maximum Current – Survival	10.0 knots	SD	
A.2.9.33	Ice Accumulation	20 kg	SD	
A.2.9.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

(*)- refers to the Performance Specification

TSOR Reference	Description	Value	Validation Method	Offeror's Response
A.2.10	Funnel Marker			
A.2.10.1	Minimum / Maximum Hull Diameter (W)	0.8/1.0 m	SD	
A.2.10.3	Maximum Buoy Height (H)	1.3 m	SD	
A.2.10.4	Buoy Weight Range (including internal ballast)	15-23 kg	SD	
A.2.10.5	Expected Lantern Weight	5.0 kg	SD	
A.2.10.6	Buoy Hull Shell Abrasion Resistance	< 150 mg weight loss after 10,000 cycles	STD (see Table 7)	
A.2.10.8	Threaded lantern supports @150 mm Bolt Circle	See Figure A-2.11	SD	
A.2.10.11	Minimum Radar Cross Sectional Area	2.0 m²	STD	
A.2.10.12	Minimum Air Draft (Hf) [at max mooring load]	0.50 m	SC	
A.2.10.13	Can Top	Yes	SOC	
A.2.10.14	Conical Top	Yes/ No	SOC	
A.2.10.15	Retro-Reflective Area (B)	50 mm	SD	
A.2.10.17	Radar Reflector	Yes	SD	
A.2.10.18	Lantern Mount	Optional(0 or 1)	Not Evaluated	N/A
A.2.10.19	Lantern Type Generally Used	1.5 to 2 nm LED	SD	
A.2.10.20	Minimum Number of Handling Eyes	Optional (0 or 1)	Not Evaluated	N/A
A.2.10.21	Minimum Number of Lifting Eyes	1	SD	
A.2.10.22	Minimum Number of Mooring eyes	1	SD	
A.2.10.26	Minimum Mooring Eye Internal Diameter	35 mm	SD	
A.2.10.27	Maximum Mooring Lug Width	35 mm	SD	
A.2.10.28	Minimum Lifting /Handling Eye Internal Diameter	35 mm	SD	
A.2.10.29	Minimum/ Maximum Mooring Load	10/ 90 kg	SD	
A.2.10.30	Maximum Marine Growth – Operational	5 kg	SD	
A.2.10.31	Maximum Current – Operational	2.0 knots	SD	
A.2.10.32	Maximum Current – Survival	10.0 knots	SD	
A.2.10.33	Ice Accumulation	5 kg	SD	
A.2.10.34	Operation Reserve Buoyancy Marking (Rb)	Yes	SOC	

TABLE B1 – TECHNICAL RATED CRITERIA

- (1) Rated criteria will be supplied for each of the Buoy types being offer on.
- (2) Items TR01 through TR20 refer to the rated requirements detailed in the TSoR
- (3) The following types of Validation Method shall be used by the Offerors to as proof of compliance with the TSoR:
 - a. Submit Data (**SD**): Provide Engineering Drawings/Documentation to validate that this requirement has been met as per section 2.4 c of the Performance Specification; and
 - b. Submit Test Data (**STD**): Provide test data from an independent laboratory via an *Industry Standard Test* to validate that this requirement has been met.
- (4) (TR) in the following section means Technical Rated Criteria

The Offeror’s will be evaluated on the following technical capabilities that exceed of the mandatory requirements. The text in the ”Description” column is for context only. The "Rated Criteria" column shows the items to be evaluated. Points are allotted according to the “Max. Points” column of the Table.

1.3. BUOY TYPE: SMALL SPAR

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR01	2.3.9	Environmental Impact a) Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR02	A.2.1.11	Radar Cross Sectional Area	15	$\leq 2 \text{ m}^2 = (0 \text{ pts})$ 2-10 $\text{m}^2 = 10 \text{ pts}$ >10 $\text{m}^2 = 15 \text{ pts}$	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.4. BUOY TYPE: SMALL MARKER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR03	2.3.9	Environmental Impact a) Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR04	A.2.2.11	Radar Cross Sectional Area	15	$\leq 2 \text{ m}^2 = (0 \text{ pts})$ 2-10 $\text{m}^2 = 10 \text{ pts}$ >10 $\text{m}^2 = 15 \text{ pts}$	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.5. BUOY TYPE: MEDIUM SPAR

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR05	2.3.9	<i>Environmental Impact</i>				
		a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR06	A.2.3.11	Radar Cross Sectional Area		10-15 m² = 5 pts 15-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.6. BUOY TYPE: MEDIUM MARKER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR07	2.3.9	<i>Environmental Impact</i>				
		a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR08	A.2.4.11	Radar Cross Sectional Area		≤ 2 m² = (0 pts) 2-10 m² = 10 pts >10 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.7. BUOY TYPE: RIVER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR09	2.3.9	<i>Environmental Impact</i> a)Buoy Shell	a) 10	a) Polyethylene =10 pts, other = 0 pts	SD	
		b) Internal Buoyancy Material	b) 15	b) Polystyrene =15 pts, other = 0 pts		
TR10	A.2.5.11	Radar Cross Sectional Area	15	10-15m² = 5 pts 15-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.8. BUOY TYPE : RIVER LOW DRAFT

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR11	2.3.9	<i>Environmental Impact</i> a)Buoy Shell	a) 10	a) Polyethylene =10 pts, other = 0 pts	SD	
		b) Internal Buoyancy Material	b) 15	b) Polystyrene =15 pts, other = 0 pts		
TR12	A.2.6.11	Radar Cross Sectional Area	15	10-15m² = 5 pts 15-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.9. BUOY TYPE: MEDIUM-LARGE MARKER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR13	2.3.9	Environmental Impact a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR14	A.2.7.11	Radar Cross Sectional Area	15	10-15 m² = 5 pts 15-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.10. BUOY TYPE: LARGE MARKER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR15	2.3.9	Environmental Impact a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR16	A.2.8.11	Radar Cross Sectional Area	15	10-15 m² = 5 pts 15-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.11. BUOY TYPE: PILLAR BUOY

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR17	2.3.9	Environmental Impact				
		a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR18	A.2.9.11	Radar Cross Sectional Area	15	<20 m² = 5 pts 21-29 m²= 10 pts, >30 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

1.12. BUOY TYPE: FUNNEL MARKER

Item	Reference	Description	Max. Points	Rated Criteria	Validation Method	Offeror's Response
TR19	2.3.9	Environmental Impact				
		a)Buoy Shell b) Internal Buoyancy Material	a) 10 b) 15	a) Polyethylene =10 pts, other = 0 pts b) Polystyrene =15 pts, other = 0 pts	SD	
TR20	A.2.10.11	Radar Cross Sectional Area	15	≤ 2 m² = (0 pts) 2-10 m² = 10 pts >10 m² = 15 pts	STD	
Total Available Points			40			
Minimum Points Required to be compliant			20			

Solicitation No. - N° de l'invitation

F7047-231212

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

F7047-231212-008ERD

Amd. No. - N° de la modif.

File No. - N° du dossier

F7047-231212-008ERD

Buyer ID - Id de l'acheteur

008ERD

CCC No./N° CCC - FMS No./N° VME

ANNEX “E” - Electronic Payment

ELECTRONIC PAYMENT INSTRUMENTS

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

- ☐ () VISA Acquisition Card;
- ☐ () MasterCard Acquisition Card;
- ☐ () Direct Deposit (Domestic and International);
- ☐ () Electronic Data Interchange (EDI);
- ☐ () Wire Transfer (International Only);
- ☐ () Large Value Transfer System (LVTS) (Over \$25M)

ANNEX "F"- Integrity Provision

CERTIFICATIONS AND ADDITIONAL INFORMATION

The Offeror must provide the required certification(s) and additional information to be awarded a standing offer.

The certification(s) provided by the Offeror to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare an offeror in default if any certification made by the Offeror is found to be untrue whether made knowingly or unknowingly, during the Standing Offer 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 will constitute a default under the Standing Offer.

The Offeror must submit the following duly completed certifications as part of the Standing Offer.

1. Integrity Provisions

1.1 Declaration of Convicted Offences

In accordance with the *Ineligibility and Suspension Policy* (www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Offeror must provide the required documentation, as applicable.

1.2 Complete List of Names of Board of Directors

In accordance with the *Ineligibility and Suspension Policy* (see Section 17 at www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), and *General Conditions (SACC 2015A, Section 29)*, the Offeror must provide a list of the names of its Board of Directors (see Form 1), which will be used to verify conformance to the Integrity Provisions.

2. Product Conformance

The Offeror certifies that all goods proposed conform, and will continue to conform, throughout the period of the Standing Offer, to the requirement detailed under Annex A.

Offeror's authorized representative signature

Date

Form 1

COMPLETE LIST OF DIRECTORS

Name	Position
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Buyer ID - Id de l'acheteur
008ERD
CCC No./N° CCC - FMS No./N° VME

[illegible]

Buyer ID - Id de l'acheteur

008ERD

CCC No./N° CCC - FMS No./N° VME

F7047-231212-008ERD

[illegible]