

MARINE SAFETY MANAGEMENT SYSTEM

TIER I – POLICY

**ALTERNATIVE REQUIREMENTS FOR THE DESIGN,
CONSTRUCTION AND SAFETY EQUIPMENT OF AQUACULTURE
BARGES**

Effective Date	Date of Revision
DAY MONTH 2022	

DRAFT

MARINE SAFETY MANAGEMENT SYSTEM

TIER I – POLICY

ALTERNATIVE REQUIREMENTS FOR THE DESIGN, CONSTRUCTION AND SAFETY EQUIPMENT OF AQUACULTURE BARGES

1 Policy Objective

- 1.1 This policy provides guidance on alternative design, construction, and safety equipment requirements for aquaculture barges of any length that carry or accommodate a crew (i.e., feed barges or other service barges), which provide a level of safety at least equivalent to existing Canadian construction and safety equipment requirements.

2 Policy Statement

- 2.1 Annex 1 of this policy outlines requirements based on the Norwegian Standard NS 9415 that Transport Canada deems to be an equivalent alternative to Canada's existing regulatory and standard requirements, with certain modifications, for the design, construction, and safety equipment for aquaculture barges.
- 2.2 An application to the Marine Technical Review Board¹ (MTRB) must be submitted for each aquaculture barge intending to use the alternative requirements outlined in this policy.
- 2.3 When a barge has been granted an MTRB decision in accordance with this policy, in case of a conflict between documents, the following priority applies:
 1. The MTRB decision
 2. Other existing Canadian regulatory requirements (not replaced by the MTRB decision)
 3. External Standards

¹ Refer to [sections 26 to 28](#) of the *Canada Shipping Act, 2001*.

3 Scope

- 3.1 This policy applies to the design, construction, and safety equipment of Canadian aquaculture barges of any length.

4 Authority

- 4.1 This policy is authorized by the Marine Safety and Security Executive Committee and is in accordance with the objectives to the *Canada Shipping Act, 2001* (CSA 2001).

5 Responsibility/ further information

- 5.1 The Executive Director, Domestic Vessel Regulatory Oversight, is accountable for the development, implementation, maintenance and continuous improvement of this policy.

- 5.2 Comments or queries should be addressed to:

Executive Director
Domestic Vessel Regulatory Oversight (AMSD)
Transport Canada
330 Sparks Street
Ottawa, Ontario K1A 0N8
Fax: 613-991-4818
Email: marinesafety-securitemaritime@tc.gc.ca

6 Background

- 6.1 Transport Canada recognizes the aquaculture industry as an important marine stakeholder, representing a variety of activities with a rapid rate of growth.
- 6.2 Under the CSA 2001, “vessel” means a boat, ship or craft designed, used or capable of being used solely or partly for navigation in, on, through or immediately above water, without regard to method or lack of propulsion, and includes such vessels that are under construction.
- 6.3 The Norwegian Standard NS 9415 – *Marine fish farms requirements for site survey, risk analyses, design, dimensioning, production, installation and operation*, which is used in the industry, addresses the requirements for aquaculture site design, and also includes certain requirements regarding product specification (Section 7.13), rafts (Section 10) and personal safety (Annex B) that Transport Canada deems to be equivalent alternatives to Canada’s existing regulations, with certain modifications, for the construction and

safety equipment of aquaculture barges, which are referred to as “rafts” in the Standard NS 9415.

- 6.4 The final decision to accept the alternative requirements lays with the MTRB and will be decided on a case-by-case basis for each aquaculture barge. If these alternative requirements are not appropriate in a specific case, the MTRB may set out additional conditions.

7 Date of Application

- 7.1 The original version of this policy was approved on DAY MONTH 2022.

8 Definitions

- 8.1 “barge” means a non-self-propelled vessel.
- 8.2 “aquaculture barge” means a floating workstation that is detached or integrated, with technical equipment for performing certain functions connected to fish farming. Such functions can be storage, feeding, electricity supply, crewing and monitoring of the site. The Standard NS 9415 defines this type of barge as “raft”.
- 8.3 “product certification body” means a body that is accredited by the Standards Council of Canada, or by any other national accreditation organization that is a member of the International Accreditation Forum Multilateral Recognition Arrangement, to give third-party written assurance that a product meets the specified requirements for the product, including granting of initial certification and maintenance of the certification.

9 Date for Review or Expiry

- 9.1 This policy will be reviewed after 12 months.

10 RDIMS Reference

- 10.1 The English version of this document is saved in RDIMS under reference number 15995536.
- 10.2 La version française du présent document est dans le SGDDI et porte le numéro de référence 16581247.

11 Keywords

- Marine Technical Review Board
- MTRB
- Equivalent alternative

- Aquaculture
- Feed barge
- Construction of aquaculture barge

DRAFT

ANNEX 1 – ALTERNATIVE REQUIREMENTS FOR THE DESIGN, CONSTRUCTION, AND SAFETY EQUIPMENT OF AQUACULTURE BARGES

1 Existing Canadian Regulations

1.1 The following regulations and standards are applicable for the design, construction, and safety equipment of aquaculture barges that:

- carry or accommodate a crew,
- are not self-propelled, and
- operate in domestic waters not more than 25 miles from shore.

1.1.1 *Hull Construction Regulations (C.R.C., c. 1431)*

1.1.2 *Stability, Subdivision and Load Line Standards (1975), TP 7301*

1.1.3 *Load Lines Regulations (SOR/2007-99) (when operating outside of sheltered waters)*

1.1.4 *Marine Machinery Regulations (SOR/90-264)*

1.1.5 *Life Saving Equipment Regulations (C.R.C., c. 1436)*

1.1.6 *Ship Electrical Standards, TP 127*

1.2 Any regulations made under the CSA 2001 not listed in 1.1 remain applicable (refer to Annex 3).

2 Alternative Requirements

2.1 General

2.1.1 In replacement of the regulations listed in section 1.1, the barge may comply with instruments listed in 2.2 and 2.3.

2.1.2 All documents listed below are to be applied as amended from time to time.

2.2 Norwegian Standard NS 9415 – *Marine fish farms, requirements for site survey, risk analyses, design, dimensioning, production, installation and operation.*

2.2.1 *Section 7.13, Requirements regarding product specification*

2.2.2 *Section 10, Requirements regarding rafts*

2.2.3 *Annex B, Personal safety*

2.3 Modifications to NS 9415

- 2.3.1 Any vessel complying with the provisions of Section 2 (Alternative Requirements) of this Annex must also comply with Annex 2 of this policy.
- 2.3.2 Elements in NS 9415 that are stated as informative or recommendatory are mandatory for the purpose of this policy.

DRAFT

ANNEX 2 – MODIFICATIONS TO NS 9415

1 Electricity, Machinery and Equipment

- 1.1 All electrical and machinery systems and equipment provided for inboard services or safety² of the barge must be designed and installed in accordance with:
 - 1.1.1 the rules for electrical, machinery and system of a [Canadian Recognized Organization](#) (RO); or
 - 1.1.2 standards³ that provide an equivalent level of safety in a marine environment.
- 1.2 Emergency lighting must be provided throughout accommodations, services and machinery spaces, and decks.
- 1.3 Grounded neutral distribution systems are acceptable as the main distribution system provided that:
 - 1.3.1 required essential services have been either adapted for grounded systems or have an independent ungrounded distribution system;
 - 1.3.2 lighting for the cages is designed for grounded systems; and
 - 1.3.3 ground-fault circuit interrupters (GFCI) are designed for use on grounded systems.
- 1.4 A ground indicating system is not required on grounded neutral distribution systems.
- 1.5 Redundancy is not required other than with regards to generators or emergency batteries.
- 1.6 Navigation lights must have an emergency power supply available for the duration that a barge may be unattended.
- 1.7 Automatic paralleling generators that are type approved by a RO can be installed on board without having a manual paralleling function provided that:

² Includes electrical generation and distribution, fuel systems, fire and bilge pumping, compressed air system. Excludes machinery and systems provided for the fish farming operation (e.g., feeders, pumps, etc.) provided these are located in a separate compartment.

³ Such as the Institute of Electrical and Electronic Engineers standard 45 titled *Recommended Practice for Electrical Installations on Shipboard* or IEC 60092-507- *Electrical installations in ships – Small Vessels – published by the ISO/TC 8 Ships and marine technology.*

- 1.7.1 the switchboard has a wattmeter, an ammeter and a voltmeter arrangement installed for each generator. The meter may be a digital multi-function type that can be switched to view watts, amps and voltage; and
- 1.7.2 generator protection circuit breakers are to be installed in the switchboard regardless of any protection installed at the generator.
- 1.8 Machinery and equipment must have effective means of monitoring any machinery fault alarm, fire alarm, bilge alarm or any other alarm that may result in damage to the barge or the environment.
- 1.9 All machinery and equipment installed onboard the barge must be maintained in accordance with the manufacturer’s instructions.
- 1.10 All electrical equipment, including appliances, accessories, and fittings, must be either:
 - 1.10.1 approved by a RO or a Product Certification Body as meeting the rule, code or standard under which it is designed, and must bear the identification mark of the product certification body that verifies that the equipment meets the rule, code or standard described in paragraph 1.1; or
 - 1.10.2 bear the CE Mark indicating that it meets the applicable requirements set out in Directive 2014/35/EU of the European Parliament and of the Council supported by the Guidelines on the application of the Directive.

2 Hull Design and Construction

- 2.1 Structural design and hull scantling (the expression “dimensioning” is used in NS 9415 section 10.2) must be made in accordance with:
 - 2.1.1 the structural rules of an RO; or
 - 2.1.2 a structural standard appropriate for marine vessel design, taking into consideration the environmental loads on the vessel determined in accordance with section 6 of NS 9415.

3 Protection from falls

- 3.1 Rails or equivalent protection must be installed near the periphery of all weather decks accessible to persons on board; such rails must be in at least three courses and must be at least 915 mm high.
- 3.2 Suitable storm rails must be installed in all passageways and at deck house sides where crew might have normal access; storm rails must be installed on both sides of passageways that are 1.83 m or more in width.

- 3.3 If bulwarks are fitted, the requirements for freeing ports set out in Regulation 24 of the *International Convention on Load Lines, 1966, as amended by the 1988 Protocol* apply.

4 Life saving

- 4.1 The plan for rescue and safety required by NS 9415 section 10.4 must consider the equipment listed in this section in addition to the equipment required in Annex B of NS 9415.
- 4.2 In addition to the equipment in Annex B of NS 9415, the barge must be fitted with:
- 4.2.1 enough liferafts or inflatable rescue platforms, equipped with SOLAS B packs and meeting the requirements of the *Life Saving Equipment Regulations*, to accommodate the complement;
 - 4.2.2 for each member of the complement, a personal floatation device or a lifejacket meeting the requirements of the *Small Vessel Regulations* or the *Life Saving Equipment Regulations*;
 - 4.2.3 for each member of the complement on a barge outside of sheltered waters where the water temperature is below 10°C, an immersion suit meeting the requirements of the *Life Saving Equipment Regulations*;
 - 4.2.4 six rocket parachute flares; and
 - 4.2.5 three lifebuoys, each equipped with a self-igniting light or attached to a buoyant line of not less than 15 m in length.
- 4.3 A line-throwing appliance must be carried on board when the barge is anchored in areas of heavy current.
- 4.4 The boat referred to in Annex B of NS 9415 must be:
- 4.4.1 an emergency boat under launching device, or arranged to be ready for use without launching; or
 - 4.4.2 a service vessel of a capacity at least equivalent to an emergency boat and that is normally moored to the barge and readily available at all times. Service vessels that are not permanently on-site (i.e., moored to the barge) are not considered acceptable.
- 4.5 The boat referred to in Annex B of NS 9415 must be equipped with one VHF radiotelephone apparatus, stowed so that it is readily accessible for immediate use.
- 4.6 Every barge must have an evacuation procedure in place for the safe evacuation of the complement in case of emergency.

- 4.7 Maintenance and service of life-saving equipment must be performed in accordance with the manufacturer’s instructions and the *Life Saving Equipment Regulations*.

5 Fire Safety

- 5.1 The plan for rescue and safety required by NS 9415 section 10.4 must consider the equipment listed in this section in addition to the equipment required in Annex B of NS 9415.

- 5.2 Every barge must be provided with at least one fire pump, and appliances whereby at least one powerful jet of water can be directed into any part of the barge, in accordance with the following:

Barge Length Overall	Fire Pumps	Water Capacity (L/S)	Fire Main Diameter (mm)
Not more than 15 m	One manual or power-driven fire pump	1.14	25
More than 15 m but not more than 20 m	(a) One manual or power-driven fire pump; and	1.14	38
	(b) one power-driven fire pump	1.14	38
Over 20 m	(a) One manual or power-driven fire pump; and	1.80	38
	(b) one power-driven fire pump	2.28	38

- 5.3 Machinery spaces containing oil-fired boilers, oil fuel units or internal combustion machinery must be provided with a fixed fire-extinguishing system that, when activated, releases a complete charge simultaneously, but does not have an automatic means to release the extinguishing agent.
- 5.4 At least one 9 L fluid fire extinguisher (or equivalent) in each space where the crew lives or works so that there is at least one such fire extinguisher for each 15 metres of length, or fraction thereof, of such spaces.
- 5.5 One 4.5 L foam fire extinguisher, or equivalent fire extinguisher suitable for F class fires, in each galley.
- 5.6 Every barge fitted with oil-fired boilers must be provided with a receptacle containing an adequate quantity of sand or other dry material suitable for quenching oil fires and a scoop for distributing the material in the boiler room; and with one 9 L foam fire extinguisher (or equivalent), where the number of burners does not exceed two, and with one additional fire extinguisher for each additional burner when more than two burners are fitted, but in no case need there be more than four such extinguishers.

- 5.7 Every barge fitted with internal combustion engines must be provided with one 9 L foam fire extinguisher (or equivalent) in the compartment for every 746 kW of the machinery or fraction thereof, but in no case need there be more than four such extinguishers.
- 5.8 Fire axes, located in such parts of the barge that will be most convenient and serviceable in case of an emergency:
 - 5.8.1 for barges not over 45 metres, one fire axe;
 - 5.8.2 for barges over 45 metres, two fire axes.
- 5.9 An automatic fire detection and alarm system must be installed in machinery spaces.
- 5.10 A smoke detector must be installed in every cabin, accommodation space, service space and control station.
- 5.11 Fire safety equipment on board the barge must be readily accessible for immediate use, be in good working order and be maintained in accordance with the equipment manufacturer's instructions or recommendations.
- 5.12 Barges capable of accommodating more than 12 persons overnight must meet the following structural fire protection requirements, with regards to escape, ventilation and structural material and arrangement:
 - 5.12.1 for barges of not more than 24 metres in length, the non-passenger requirements of Part 3 of the *Vessel Fire Safety Regulations*;
 - 5.12.2 for barges of more than 24 metres in length, the non-passenger requirements of Part 2 of the *Vessel Fire Safety Regulations* other than section 201; or
 - 5.12.3 the equivalent fire safety requirements for accommodation barges published by an RO.

6 Type approval

- 6.1 All life-saving appliances and fire safety systems, equipment and products must meet the approval requirements as set out in the regulations for these appliances, equipment and products.

ANNEX 3 – CSA 2001 REGULATIONS APPLICABLE TO BARGES

1 General

- 1.1 The following regulations made under the CSA 2001 and standards are applicable to the inspection, design, construction, equipment, and certification of aquaculture barges that carry or accommodate a crew:

[Cargo, Fumigation and Tackle Regulations](#) (SOR/2007-128)

[Collision Regulations](#) (C.R.C., c. 1416)

[Crew Accommodation Regulations](#) (C.R.C., c. 1418)

*[Hull Construction Regulations](#) (C.R.C., c. 1431)

**Stability, Subdivision, and Load Line Standards, TP 7301*

*[Life Saving Equipment Regulations](#) (C.R.C., c. 1436)

*[Load Line Regulations](#) (SOR/2007-99)

*[Marine Machinery Regulations](#) (SOR/90-264)

**Ships Electrical Standards, TP 127*

[Safe Working Practices Regulations](#) (C.R.C., c. 1467)

[Vessel Safety Certificates Regulations](#) (SOR/2021-135)

[Vessel Pollution and Dangerous Chemicals Regulations](#) (SOR/2012-69)

[Vessel Registration and Tonnage Regulations](#) (SOR/2007-126)

- 1.2 Regulations and standards marked with an asterisk (*) would be replaced by the barge MTRB, when issued in accordance with this policy.