

MARINE SAFETY AND SECURITY MANAGEMENT SYSTEM

TIER I – Policy

Alternative requirements for designing, constructing and safety equipment on non-self-propelled aquaculture barges

Effective date	Date of revision
March 24, 2023	

MARINE SAFETY AND SECURITY MANAGEMENT SYSTEM

TIER I – Policy

Alternative requirements for designing, constructing and safety equipment on non-self-propelled aquaculture barges

1 Policy objective

- 1.1 This policy provides guidance on alternative design, construction, and safety equipment requirements for any non-self-propelled aquaculture barge that carries or accommodates a crew (i.e., feed barges or other service barges), which provide at least an equivalent level of safety 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 has deemed to be an equivalent alternative to Canada's existing requirements, with some changes, for designing, constructing, and the safety equipment of aquaculture barges.
- 2.2 Anyone who wants to use the alternative requirements outlined in this policy must submit an application to the Marine Technical Review Board¹.
- 2.3 The Marine Technical Review Board will make the final decision on accepting alternative requirements. These decisions will be made on a case-by-case basis for each barge. If these alternative requirements are not appropriate in a specific case, the Board may set out extra conditions.
- 2.4 When a barge has been given a Marine Technical Review Board decision made according to this policy and there is a conflict between documents, the following priority applies:
1. The Marine Technical Review Board's decision
 2. Other existing Canadian regulatory requirements (not replaced by the Marine Technical Review Board's 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 how any Canadian aquaculture barge is designed, built and safety equipped.

4 Authority

- 4.1 This policy was authorized by the Marine Safety and Security Executive Committee according to the objectives of the *Canada Shipping Act, 2001*.

5 Responsibility

- 5.1 The Executive Director of Domestic Vessel Regulatory Oversight is responsible for developing, implementing, maintaining and improving this policy.

- 5.2 Please send comments or questions to:

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6 Background

- 6.1 Transport Canada recognizes that the aquaculture industry is an important marine stakeholder. They represent many types of work and are a growing industry.
- 6.2 Under the *Canada Shipping Act, 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*, (Standard NS 9415) addresses the requirements for designing aquaculture sites. It also includes some requirements on product specification (Section 7.13), rafts (Section 10) and personal safety (Annex B) that Transport Canada has deemed to be equivalent alternatives to Canada’s existing regulations, with certain changes, for constructing and safety equipping

aquaculture barges. These barges are referred to as “rafts” in Standard NS 9415.

7 Date of application

7.1 The original version of this policy was approved on March 24, 2023.

8 Definitions

8.1 A “barge” is a non-self-propelled vessel.

8.2 A “aquaculture barge” is a floating workstation that is detached or integrated, with technical equipment for performing some tasks connected to fish farming. These functions can be storing, feeding, supplying electricity, crewing and monitoring the site. Standard NS 9415 defines this type of barge as “raft”.

8.3 A “product certification body” is 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 (MLA), to give third-party written assurance that a product meets the specified requirements for the product, including initial certification and maintenance of the certification.

9 Date for review or expiry

9.1 This policy will be reviewed after 1 year.

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

ANNEX 1 – Alternative requirements for designing, constructing, and safety equipment on non-self-propelled aquaculture barges

1 Existing Canadian regulations

1.1 The following regulations and standards apply to aquaculture barges that:

- carry or accommodate a crew
- are not self-propelled, and
- operate in domestic waters and within 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 *Canada Shipping Act, 2001* that are not listed in 1.1 still apply (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 must 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 Standard NS 9415

2.3.1 Any vessel that complies under Section 2 (Alternative Requirements) of this Annex must also comply with Annex 2 of this policy.

2.3.2 Parts of Standard NS 9415 that are noted as informative or recommendatory are mandatory for the purpose of this policy.

ANNEX 2 – Modifications to Standard 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 according to:
 - 1.1.1 the rules for electrical, machinery and system of a [Canadian recognized organization](#), 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, service spaces, machinery spaces and decks.
- 1.3 Grounded neutral distribution systems can be used as the main distribution system as long as:
 - 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 amount of time that a barge may be unattended.
- 1.7 Automatic paralleling generators that are type approved by a recognized organization can be installed on board without having a manual paralleling function, as long as:

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 Electronics Engineers standard 45: *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 that continuously displays the total kilowatts
- 1.7.2 the switchboard has a wattmeter, an ammeter and a voltmeter arrangement installed for each generator. The meter can be a digital multi-function type that can be switched to view watts, amps and voltage, and
- 1.7.3 each generator must have a circuit breaker installed in the main switchboard to isolate and protect cables regardless of any protection installed at the generator
- 1.8 Machinery and equipment must have effective way to monitor 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 according to the manufacturer's instructions.
- 1.10 All electrical equipment, including appliances, accessories, and fittings, must be either:
 - 1.10.1 approved by a recognized organization or a product certification body as meeting the rule, code or standard under which it is designed. It must also 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 that indicates 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 (called "dimensioning" in Standard NS 9415 section 10.2) must be done according to:
 - 2.1.1 the structural rules of a recognized organization, or
 - 2.1.2 a structural standard appropriate for marine vessel design, considering the environmental loads on the vessel determined according to Section 6 of Standard NS 9415

3 Protection from falls

- 3.1 Rails or equivalent protection must be installed near the periphery (outer edge) of all weather decks that can be accessed by people on board. These rails must be in at least 3 courses (3 rows of bars) and must be at least 0.915 m 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 wide.
- 3.3 If bulwarks are fitted, the requirements for freeing ports set out in Regulation 24 of the *International Convention on Load Lines, 1966, and Protocol of 1988, as amended* apply.

4 Life saving

- 4.1 The plan for rescue and safety required by Standard NS 9415 section 10.4 must consider the equipment listed in this section **and** the equipment required in Annex B of Standard NS 9415.
- 4.2 In addition to the equipment in Annex B of Standard 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 everyone on board
 - 4.2.2 a personal floatation device or a lifejacket that meets the requirements of the *Small Vessel Regulations* or the *Life Saving Equipment Regulations* for everyone on board
 - 4.2.3 an immersion suit that meets the requirements of the *Life Saving Equipment Regulations* for everyone on board, if the barge is outside of sheltered waters where the water temperature is below 10°C
 - 4.2.4 6 rocket parachute flares, and
 - 4.2.5 3 lifebuoys, each equipped with a self-igniting light or attached to a buoyant line of at least 15 m
- 4.3 A line-throwing appliance must be carried on board when the barge is anchored in areas with heavy current.
- 4.4 The boat referred to in Annex B of Standard 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 that can carry at least as many people as 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 (moored to the barge) are not acceptable
- 4.5 The boat referred to in Annex B of Standard NS 9415 must be equipped with one VHF radiotelephone apparatus, stowed so that it can be easily accessed for immediate use on board.

- 4.6 Every barge must have an evacuation procedure in place to safely evacuate everyone on board in case of emergency.
- 4.7 Life-saving equipment must be maintained and replaced according to the manufacturer's instructions and the *Life Saving Equipment Regulations*.

5 Fire safety

- 5.1 The plan for rescue and safety required by Standard NS 9415 section 10.4 must consider the equipment listed in this section **and** the equipment required in Annex B of Standard NS 9415.
- 5.2 Every barge must have at least one fire pump with an apparatus that allows it to generate least one powerful jet of water that can be directed into any part of the barge, according to the following:

Fire pump requirements based on length of the barge

Overall barge length (metres)	Fire pumps	Water capacity (litres per second)	Diameter of fire main (millimetres)
15 m or less	One manual or power-operated fire pump	1.14	25 mm
Over 15 and up to 20 m	One manual or power-operated fire pump, and	1.14 for both	38 mm
	One power-operated fire pump	1.14	38 mm
Over 20 m	One manual or power-operated fire pump, and	1.80 for manual pump	38 mm
	One power-operated fire pump	2.28 for powered pump	38 mm

- 5.3 Machinery spaces that contain oil-fired boilers, oil fuel units or internal combustion machinery must include a fixed fire-extinguishing system that, when activated, releases a complete charge simultaneously, but does not have an automatic way 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 of these fire extinguishers 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 that is suitable for class F or K fires, in each galley.
- 5.6 Every barge fitted with oil-fired boilers must have:

- 5.6.1 A receptacle that contains enough sand or other dry material to quench oil fires and a scoop for distributing the material in the boiler room, and
- 5.6.2 One 9 L foam fire extinguisher (or equivalent) where there are 2 or less burners, and one extra fire extinguisher for each additional burner when there are more than 2 burners; but in no case need there be more than 4 of these extinguishers
- 5.7 Every barge fitted with internal combustion engines must have 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 parts of the barge that are the most convenient and serviceable in the case of an emergency:
 - 5.8.1 1 fire axe for barges 45 metres or less
 - 5.8.2 2 fire axes for barges over 45 metres
- 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 easy to access for immediate use, be in good working order and be maintained according with the equipment manufacturer's instructions or recommendations.
- 5.12 Barges that can accommodate 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 that are less than 24 metres long: the non-passenger requirements of Part 3 of the *Vessel Fire Safety Regulations*
 - 5.12.2 for barges that are 24 metres or more long: 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 a recognized organization

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 – Regulations under the *Canada Shipping Act, 2001* that apply to barges

1 General

- 1.1 The following standards and regulations made under the *Canada Shipping Act, 2001* apply to how aquaculture barges that carry or accommodate a crew are inspected, designed, constructed, equipped and certified.
- 1.2 Regulations and standards marked with an asterisk (*) would be replaced by the Marine Technical Review Board's decision concerning the barge when issued according to this policy.

[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)