



**IMO Biofouling Guidelines**

**Biofouling Management  
Plan and Biofouling  
Record Book**





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## 1. Introduction

In accordance with regulations implemented in the state of California, all vessels now entering those waters or ports must comply with Article 4.8: Biofouling Management to Minimize the Transfer of Nonindigenous Species from Vessels Arriving at California Ports and the requirements of “2011 Guidelines for the Control and Management of Ship’s Biofouling to Minimize the Transfer of Invasive Aquatic Species” adopted as the IMO guideline, Resolution MEPC.207(62). Effective as of 1 October 2017, the creation and maintenance of a Biofouling Record Book is required of newly constructed vessels delivered on or after the first of January, 2018, and also, of existing vessels with their first dry docking maintenance on or after the first of January, 2018. The Guidelines give recommendations on general measures to be considered in order to reduce the risk of transfer of biofouling on ships not only in relation to the aspects of choosing the right fouling control paint for the different parts of the ship but also to give consideration to ship design, dry-dock maintenance, recycling , crew training etc. The guidelines suggest that plans for managing the biofouling are developed for each individual ship. Each ship shall also keep on board a biofouling record book to document the various management procedures that have been taken throughout the lifespan of the ship. This update to the regulation will provide an internationally consistent approach to ensure management of biofouling on ships. However, this is only applicable to vessels of 300 gross tonnes or more and those capable of carrying ballast water.

**Note: It is ultimately the ship owner or operator's decision to have and to maintain a biofouling management plan and biofouling record book on-board their ship.**



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## **2. Objectives**

The aim of these regulations, and consequently of the Biofouling Record Book, is to eliminate the transfer of nonindigenous species into territorial waters.

The Biofouling Record Book must:

- Have detailed reports of every inspection and antifouling measure done on the vessel since the last drydocking maintenance or since delivery, for new vessels.
- Be consistent with the necessary contents described in the International Maritime Organization's "Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species"
- The choice of anti-fouling system (AFS) for the external hull with a check list system to inform this choice and the selection of an anti-fouling system for niche areas where hydrodynamic conditions may differ from those found on the external hull.
- Planned management actions to be completed between planned dry-dockings to minimize the biofouling on the hull.

Moreover, the maintenance of the Biofouling Record Book is mandatory as it will assist authorities in their assessment of the vessel and the biofouling threat it might pose for the territorial waters. In that aspect, it can minimize any delays to the vessel's operations.



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### 3. Description of operating profile

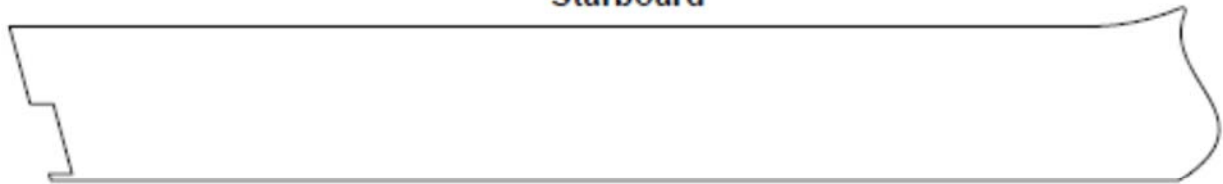
Typical operating speed (knots)	
Period underway/activity (%)	
Expected lay-up periods (anchored, moored, (weeks)	
Typical operating region or trading routes	
Planned duration between dry docking/slipping	
Expected dry docking country (if known)	
Dry docking and maintenance history	See Biofouling Record Book

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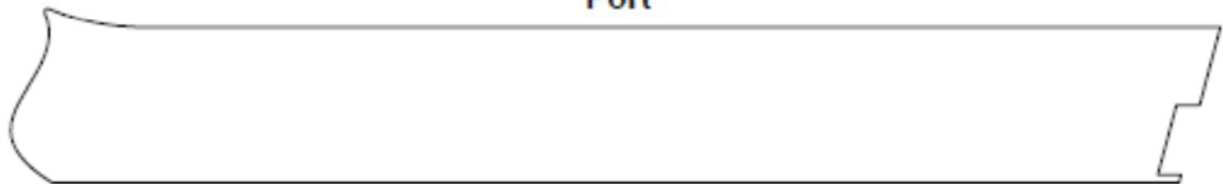
#### 4. Description of areas on ship susceptible to biofouling

Please indicate on the diagrams the areas particularly susceptible to biofouling, including niche areas and seawater systems access points within the internal seawater systems.

**Starboard**



**Port**





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## 5. Location of areas susceptible to biofouling

Identify the niche areas relevant for the ship in question in the table below (tick as appropriate).  
Include other niches areas as required:

General hull appendages		Niche areas	
Flat- Bottom		Sea Chests	
Vertical Sides		Inlet Gratings	
Bow Dome		Sea Inlet Pipes	
Boot- Top		Bow and Stern Thruster	
Bilge Keels		Propeller and Shaft	
Stabilizer Fins		Rope Guards	
Rudder		Box Coolers	
Dock Block Positions		Moon Pools	
A-Bracket/ Stern Tube		Free Flood Spaces/ Voids	
Cathodic Protection Anodes and Systems		Other	
Draught and Hull Markings			

## 6. Biofouling management action plan to minimize the transfer of invasive aquatic species

Ship area (To be completed for areas particularly susceptible to bio fouling – see previous)	Planned management action and frequency (e.g., inspections, cleaning, repairs and maintenance)	Management action if ship operates outside its usual operating profile	
<b>External hull surfaces:</b>			
Vertical Sides			
Flat-bottom			
Docking block positions			
Boot-top			
Bow dome			
<b>Hull appendages and fittings:</b>			
Bilge Keels			
A-brackets			
Stabilizer Fins			
Cathodic Protection anodes			





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### Biofouling management action plan to minimize the transfer of invasive aquatic species (continued)

Ship area (To be completed for areas particularly susceptible to bio fouling – see previous)	Planned management action and frequency (e.g., inspections, cleaning, repairs and maintenance)	Management action if ship operates outside its usual operating profile
<b>Steering, propulsion and positioning:</b>		
Propeller(s)		
Stern tube seal		
Rope Guards		
Propeller body and ring		
Anchor and chain		
Chain locker		
Rudder		
Rudder access (pintle recesses, lifting tubes etc)		
Thruster Propeller(s)		
Thruster body(s)		
Thruster rope guards/ shaft seals		

### Biofouling management action plan to minimize the transfer of invasive aquatic species (continued)

Ship area (To be completed for areas particularly susceptible to bio fouling – see previous)	Planned management action and frequency (e.g., inspections, cleaning, repairs and maintenance)	Management action if ship operates outside its usual operating profile
Tunnel(s)		
Tunnel grates		
<b>Intake and internal seawater systems:</b>		
Engine cooling system		
Sea Chests (identify number, position, box cooler presence)		
Emergency firefighting system		
Auxiliary services system		
Potable water generation		
Ballast water uptake		
Ancillary systems		



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## 7. Description of the anti-fouling systems

Anti fouling system applied	Area/ Location applied	Dry film thickness	Expected life time	Manufacturer	If requirements for cleaning – method should be specified	AFS Certificate
Product (s)/ systems applied <sup>1</sup>						
Detail any immersed areas where AFS are not applied or installed						
Marine Growth Prevention System (MGPS) <sup>2</sup> (Dosing Frequency)						

<sup>1</sup> This section can be completed using the AFS 'specification' or warranty document provided by your AFS Supplier

<sup>2</sup> This section should be completed in collaboration with your MGPS provider



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**Description of the anti-fouling systems (continued)**

<p><b>List seawater systems without fitted MGPS's and presence and location of box coolers</b></p>	
<p><b>Operating profile required for AFS to be effective</b></p>	
<p><b>Other specifications relevant for AFS performance, if any</b></p>	
<p><b>Previous reports on AFS performance (if available)</b></p>	

## 8. Operation and maintenance of Marine Growth Prevention System

<p><b>Timing of operational and maintenance activities</b></p> <p>(Schedule of planned inspections, repairs, maintenance and renewal of MGPS)</p>	
<p><b>In – water cleaning and maintenance procedures</b></p> <p>(Schedule of planned maintenance procedures to be completed between dry docking events. Treatment / cleaning conducted and detailed operational procedures, chemicals, discharge standards to be applied to specific areas.)</p>	
<p><b>Operation of on board treatment processes</b></p> <p>(MGPS fitted, internal seawater systems covered by the system associated maintenance and inspection schedule and procedures. Operational frequency and cleaning/ maintenance requirements on completion.)</p>	
<p><b>Planned biofouling management if MGPS is temporarily out of operation</b></p> <p>(Document procedures)</p>	

### 9. Safety procedures for the ship and the crew

Provide details of the safety procedures to be followed during ship inspections as well as details of specific operational or safety restrictions, including those associated with the management system that affects the ship and/ or the crew.

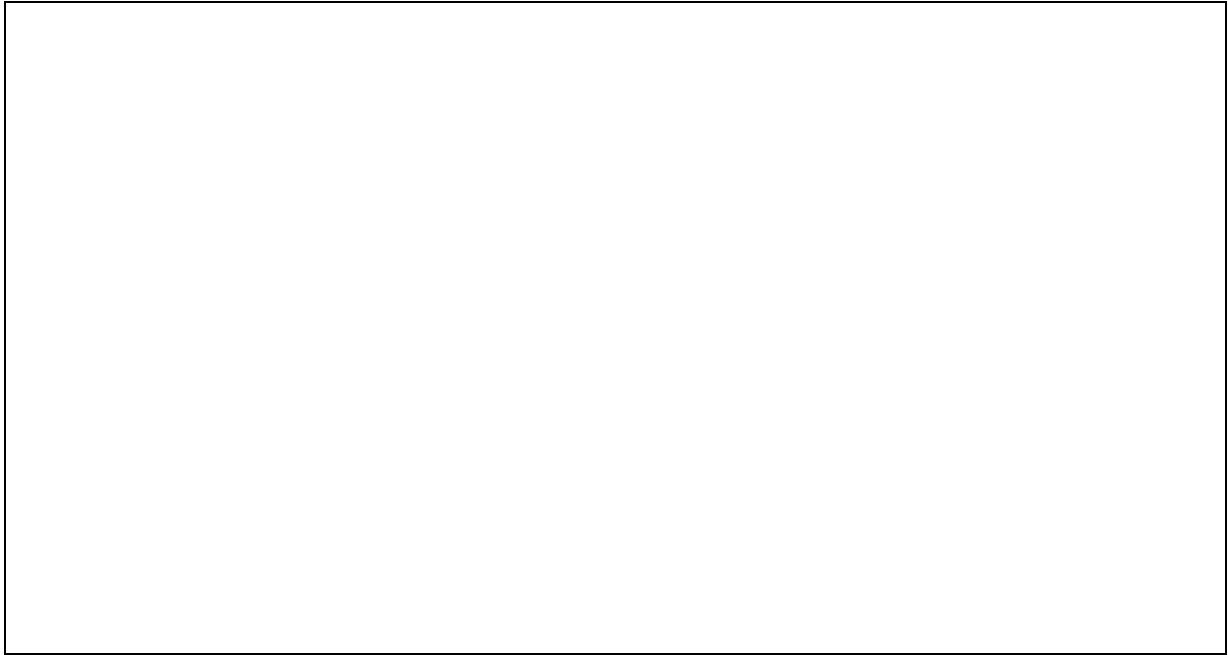
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### 10. Disposal of biological waste

Describe the procedures for the disposal of biological waste generated by treatments/ cleaning processes. Also detail when the cleaning is conducted, by whom and or under the direct supervision of, the ship owner, master or crew.

### 11. Recording requirements

Documentation is to be kept for verification of operations/ treatments. Record reference details and location of the ship's Biofouling Record Book.









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# Biofouling Record Book

*In accordance with Appendix II of MEPC Resolution 'Guidelines for the control and management of ships' biofouling to minimise the transfer of invasive aquatic species' adopted at MEPC62 (15/07/11)*

Period from	To
-------------	----

Vessel details	
Vessel name	
Flag	
Port of Registry	
IMO Number	
Gross Tonnage	
Ship Type (LR Classified)	
Regulation Length	
Beam	
International Call Sign and MMSI	
Signature of Master	

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<b>Dry docking</b>	
<b>Date</b>	
<b>Dry dock location</b>	
<b>Boat re-floated</b>	
<b>Hull cleaning performed while dry docked</b> (including areas cleaned, method used for cleaning and the location of dry docked support blocks)	
<b>Areas antifouling coating system was applied to</b> (including patchwork repairs)	
<b>Dry film thickness of antifouling coating system</b> (including primer, sealer, binder, anticorrosive and antifouling coatings)	
<b>Surface preparation</b> (i.e complete removal, new application over existing coating etc)	

<b>Company representative</b> (i.e. person in charge of the activities of this vessel)	
<b>Name</b>	
<b>Position</b>	
<b>Signature</b>	



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Dive Inspections	
Date	
Dry docking location	
Boat re-floated	
Area of boat inspected	
Hull	
Fittings	
Niches	
Voids	
<b>Biofouling- General observations</b> (i.e . extent of biofouling, predominant biofouling types e.g., slime, algae, barnacles, mussels, tubeworms)	
<b>Action taken if any, to treat or remove biofouling</b>	
<b>Supporting evidence of actions taken</b> (e.g., classification society report or contractor, photographs and receipts)	

Company representative (i.e. person in charge of the activities of this vessel)	
Name	
Position	
Signature	



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In-water cleaning and maintenance	
Date	
Vessel location	
Areas cleaned/ treated	Method of cleaning or treatment applied
<b>Biofouling – General observations</b> (i.e. extent of biofouling, predominant types e.g., slime, algae, barnacles, mussels, tubeworms etc)	
<b>Supporting evidence of actions taken</b> (e.g., classification society report or contractor, photographs and receipts)	
<b>Permits required for in-water cleaning</b> (Document if applicable)	

Company representative (i.e. person in charge of the activities of this vessel)	
Name	
Position	
Signature	



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Internal Seawater Cooling Systems	
Date	
Vessel location	
Cleaning or treatment undertaken	Method of cleaning or treatment applied
<b>Biofouling- General observations</b> (i.e. extent of biofouling, predominant types e.g., slime, algae, barnacles, mussels, tubeworms etc)	
<b>Supporting evidence of actions taken</b> (e.g., classification society report or contractor, photographs and receipts)	

Company representative (i.e. person in charge of the activities of this vessel)	
Name	
Position	
Signature	



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## Marine Growth Prevention Systems (MGPS)

**Records of operation and maintenance** (i.e. frequency of monitoring electrical/ mechanical function of systems)

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**MGPS not operational** (Detail instances when system was not operating in accordance with the biofouling management plan)

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## Lay-up/ Periods of inactivity

**Date**

**Vessel location**

**Date returned to normal operations**

**Action taken prior to / post lay-up period**

--

**Precautions taken to prevent biofouling accumulation** (e.g. sea chest blanked off)

--

**Date**

**Duration** (When ship not operating in accordance with its normal operating profile)

**Reason for departing from normal operating profile** (e.g. unexpected maintenance required)

--

**Official Inspection / review of biofouling risk**

<b>Date</b>	
<b>Vessel location</b> (When inspection or review occurred)	
<b>Port state authority who conducted inspection / review</b>	
<b>Procedures adhered to</b>	
<b>Inspectors involved</b>	
<b>Result of inspection/review</b>	
<b>Additional observations and general remarks</b> (Since ship was last cleaned, has the ship spent time in locations that may significantly affect biofouling accumulation. E.g. freshwater, high latitude or tropical ports)	

**Company representative (i.e. person in charge of the activities of this vessel)**

<b>Name</b>	
<b>Position</b>	
<b>Signature</b>	



**Cathelco®****Revision history**

REV. NO.	DESCRIPTION	AUTHOR	APPROVER	DATE
1	First release	Leena Ladwa	Leena Ladwa	06 April 2018
2	Revision 2 Initial version updated to reflect new rebranding scheme	Leena Ladwa	Leena Ladwa	23 May 2022



-   
 Fresh water generation
-   
 Vacuum systems
-   
 Wastewater treatment
-   
 Wet waste treatment
-   
 Dry waste treatment
-   
 Marine growth prevention systems
-   
 Corrosion protection

Evac is the world's leading provider of integrated water and waste management systems, as well as corrosion-protection systems for the marine, offshore, and building industries. With offices in 13 countries across four continents and representatives in more than 70 countries, we are close to our customers wherever they are. We contribute to a better environment and cleaner seas by helping our customers eliminate waste, conserve water, and mitigate emissions. Our ambitious target is to enable a future with no waste.

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nothing to waste

Innovative water and waste technologies on land and sea driving a future with no waste.