

# Template for a Biofouling Management Plan

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## Introduction and background

The International Maritime Organization's Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species, adopted under resolution MEPC.207(62) in July 2011, provide a globally consistent approach to the management of biofouling on ships.

The Guidelines give recommendations on general measures to be considered in order to reduce the risk of transfer of invasive aquatic species 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 other parameters such as the ship design, drydock and 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.

## Objectives

Whilst IMO guidance details the information which is important to be recorded regarding fouling control, no formal template is provided in which to capture that information. This document provides such a template to capture all relevant information prescribed in the IMO guidance with particular attention to coatings.

The template encompasses:

- The choice of anti-fouling system (AFS) for the external hull with a check list system to inform this choice;
- Selection of AFS for niche areas where hydrodynamic conditions may differ from those found on the external hull; and
- Planned management actions to be completed between scheduled dry-dockings to minimize the biofouling on the hull

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.



# BIOFOULING MANAGEMENT PLAN

In accordance with Appendix I of MEPC Resolution MEPC.207 (62) of 2011:

'Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species'

**Any management action undertaken should be recorded in the Biofouling Record Book.**

## Ship particulars

Ship's name	
Flag State	
Port of registry	
IMO number	
Gross tonnage	
Type (LR classified)	
Regulation length	
Beam	
International call sign and MMSI	
Ship owner (current)	

## AFS specification particulars/operating profile

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

# Description of areas on the Ship susceptible to biofouling

Areas particularly susceptible to biofouling [Please indicate on the diagrams the areas particularly susceptible to biofouling, including niche areas and seawater systems access points in the internal seawater systems]



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

General hull and appendages	Niche areas
<input type="checkbox"/> Flat-bottom	<input type="checkbox"/> Sea chests
<input type="checkbox"/> Vertical sides	<input type="checkbox"/> Inlet gratings
<input type="checkbox"/> Bow dome	<input type="checkbox"/> Sea inlet pipes
<input type="checkbox"/> Boot-top	<input type="checkbox"/> Bow and stern thruster
<input type="checkbox"/> Bilge keels	<input type="checkbox"/> Propeller and shaft
<input type="checkbox"/> Stabilizer fins	<input type="checkbox"/> Rope guards
<input type="checkbox"/> Rudder	<input type="checkbox"/> Box coolers
<input type="checkbox"/> Dock block positions	<input type="checkbox"/> Moon pools
<input type="checkbox"/> A-bracket/stern tube	<input type="checkbox"/> Free-flood spaces / voids
<input type="checkbox"/> Cathodic protection anodes and systems	<input type="checkbox"/> Other:
<input type="checkbox"/> Draft and hull markings	

# Description of the anti-fouling systems

DFTD	Area / Location applied and Date of Application	Dry Film Thickness	Expected Life time	Manufacturer	If requirements for cleaning - method should be specified	AFS Certificate (Y / N)
Products(s) / systems applied <sup>1</sup> <i>[Enter details of the coating applied for each section of the ship – hull and niche area. For sea chests, indicate function and if MGPS dosed, or containing box coolers]</i>						
Detail any immersed areas where AFS are not applied or installed						
Marine Growth Prevention Systems <sup>2</sup> (MGPSs) Dosing frequency	<i>Enter details of fitted systems, including System Name, Manufacturer, type, anode or dosing locations, seawater systems protected, dosing regime etc.]</i>					
List seawater systems without fitted MGPSs, and presence and location of box						
Operating profile required for each AFS to be effective	<i>[From Product Data Sheets for applied AFS]</i>					
Other specifications relevant for AFS performance, if any						
Previous reports on AFS performance (if available)						

<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

<sup>3</sup> Product data sheets should be attached as an appendix

# Biofouling management action plan to minimise the transfer of invasive aquatic species

<b>Ship area</b> <i>(To be completed for areas particularly susceptible to biofouling – see previous)</i>	<b>Planned management action and frequency</b> <i>(e.g., inspections, cleaning, repairs and maintenance)</i>	<b>Management action if ship operates outside its usual operating profile</b>	
<b>Hull</b>			
Vertical			
Flat-bottom			
Docking block positions	<i>[Variation in block plan between dockings / bouncing the ship in the dock / in-water cleaning before / after docking / routine in-water cleaning]</i>		
Boot-top			
Bow dome			
<b>Hull appendages and fittings:</b>			
Bilge keels			
A-brackets			
Stabilizer fins			
CP anodes			
<b>Steering, propulsion and positioning:</b>			
Propellers			
Stern tube seal			
Rope guards			
Propulsor body and ring			
Anchor and chain			
Chain locker			

Rudder





<b>Ship area</b> <i>(To be completed for areas particularly susceptible to biofouling – see previous)</i>	<b>Planned management action and frequency</b> <i>(e.g., inspections, cleaning, repairs and maintenance)</i>	<b>Management action if ship operates outside its usual operating profile</b>
<b>Steering, propulsion and positioning (continued):</b>		
Rudder recesses (pintle recesses, lifting tubes etc.)		
Thruster propeller(s)		
Thruster body(s)		
Thruster rope guards / shaft seals		
Tunnel(s)		
Tunnel grates		
<b>Intake and internal seawater systems</b>		
Engine cooling system	<i>[include associated sea chests, box coolers, grates, internal pipework etc.]</i>	
Sea chests <i>(identify number, position, box cooler presence)</i>		
Emergency fire-fighting system	<i>[include associated sea chests, box coolers, grates, internal pipework etc.]</i>	
Auxiliary services system		
Potable water generation		
Ballast water uptake		
Ancillary systems		
Other systems (itemise each)		

# Operation and maintenance of the anti-fouling systems

## **Timing of operational and maintenance activities**

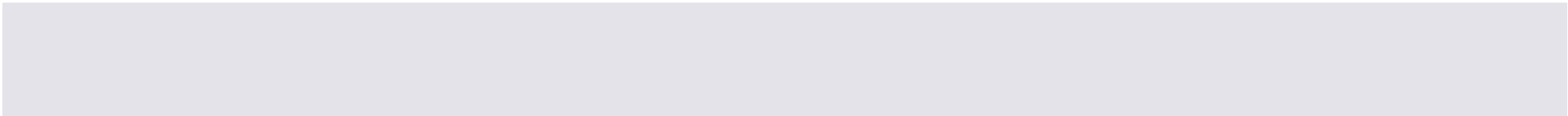
*Schedule of planned inspections, repairs, maintenance and renewal of AFS*



## **In-water cleaning and maintenance procedures**

*Schedule of planned maintenance procedures to be completed between dry-docking events*

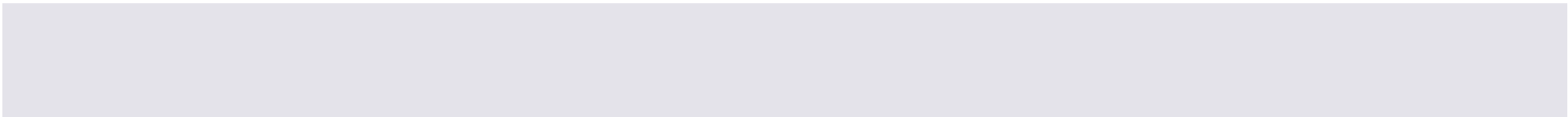
*Treatment / cleaning conducted and detailed operational procedures, chemicals, discharge standards applied to specific areas*



## **Operation of on board treatment processes**

*MGPS fitted, internal seawater systems covered by the system associated maintenance and inspection schedule and procedures*

*Operational frequency and cleaning / maintenance requirements on completion*



## **Planned biofouling management if MGPS is temporarily out of operation**

*Document procedures*



## Safety procedures for the ship and crew

### Safety procedures to be followed during ship inspections

*Details of specific operational or safety restrictions, including those associated with the management system that affects the ship and / or the crew*

## Disposal of biological waste

### Procedures for the disposal of biological waste generated by treatment / cleaning processes

*When the cleaning is conducted by, or under the direct supervision of, the ship owner, master or crew*

## Biofouling record book

### Recording requirements

*Documentation to be kept to verify operations / treatments*

*[record reference details and location of the ship's Biofouling Record Book]*

## Crew training and familiarisation

### Safety procedures to be followed during ship inspections

*Details of specific operational or safety restrictions, including those associated with the management system that affects the ship and/or the crew*

### Date of plan (day/month/year)