



GUIDE FOR

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**MITIGATION OF INFECTIOUS DISEASE TRANSMISSION  
ON BOARD MARINE AND OFFSHORE ASSETS  
NOVEMBER 2020**

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## Foreword

Similar to land-based facilities, marine and offshore assets can be exposed to outbreaks of infectious diseases. The COVID-19 outbreak, which was declared a pandemic in March of 2020, is an example. During such outbreaks the health and wellbeing of seafarers and passengers can be impacted as well as the normal operation of marine and offshore assets.

ABS recognizes that an asset's physical arrangement and operational procedures can act to mitigate the occurrence and transmission of infectious diseases. This Guide addresses the former.

The arrangement requirements contained in this Guide address the layout and configuration of spaces which can be used for the isolation and segregation of crew or passengers, and shore personnel or visitors. In addition, the Guide addresses the ventilation and interior surfaces of certain accommodation and working spaces on marine or offshore assets. Assets that satisfy the arrangement requirements of this Guide may be given an optional notation Infectious Disease Mitigation-Arrangements (**IDM-A**).

The requirements contained in this Guide do not replace any requirements of flag State, coastal State, port State, or other governing health authorities.

The effective date of this Guide is the first day of the month of publication.

Users are advised to check periodically on the ABS website [www.eagle.org](http://www.eagle.org) to verify that this version of this Guide is the most current.

*We welcome your feedback. Comments or suggestions can be sent electronically by email to [rsd@eagle.org](mailto:rsd@eagle.org).*



GUIDE FOR

# MITIGATION OF INFECTIOUS DISEASE TRANSMISSION ON BOARD MARINE AND OFFSHORE ASSETS

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## SECTION 1 General

### 1 Introduction

Many infectious (communicable) diseases are caused by microbes including viruses, bacteria, fungi, and protozoa. Some infectious agents can remain viable in air, water, food, on surfaces, and in nearly all body fluids including vomitus, feces, sputum, blood, nasal droplets from coughing and sneezing, etc. (recognizing that many organisms are present in only a subset of these body fluids). Many infectious agents remain viable long enough to enable an indirect transfer from one person to another via one of these substrates, which can cause an outbreak. Since the environment on marine and offshore assets is usually very confined, infectious diseases have the potential to spread rapidly and affect significant proportions of the personnel on board.

On marine and offshore assets, infectious diseases are transmitted mainly through these six routes:

- i)* Food
- ii)* Water
- iii)* Vectors (e.g., insects and rodents)
- iv)* Air
- v)* Direct contact with an infected person
- vi)* Indirect contact with contaminated objects and surfaces.

When the infectious disease is transmitted through the air, the infectious agents may be contained in either droplets or droplet nuclei (aerosol). Droplets are greater than 5  $\mu\text{m}$  ( $1.9685 \times 10^{-4}$  in.) in size and are usually generated when a person coughs or sneezes. The droplets containing infectious agents can then reach another person who is standing in the proximity (usually within a few meters). This can constitute a direct form of infectious disease transmission. The droplets tend to fall out of the air quickly and do not travel large distances. Droplet nuclei are the residue of droplets. They are far smaller, usually between 1  $\mu\text{m}$  ( $3.93701 \times 10^{-5}$  in.) and 5  $\mu\text{m}$  ( $1.9685 \times 10^{-4}$  in.) in size and can remain suspended in the air for a very long time. Droplet nuclei can travel large distances and can constitute an indirect form of infectious disease transmission.

This Guide focuses on air and direct/indirect contact routes since other routes of transmission are well covered by other standards such as the Ship Sanitation Certificate (see Subsection 1/5) stipulated by the International Health Regulations (IHR 2005) [1]. The requirements stated in this Guide are meant to complement, not duplicate, these other infectious disease control measures.

A valid Ship Sanitation Certificate is an internationally recognized document which certifies the sanitary condition of a ship engaged in international travel. The ship sanitation certification process verifies, among other things, that the ship satisfies the minimum requirements regarding food and water safety and vector control aimed at mitigating the transmission of infectious diseases. A valid Ship Sanitation Certificate, or an equivalent for offshore assets and marine assets which do not require this certificate, is a prerequisite to obtain the optional notation specified in this Guide (see Subsection 1/5).

The measures for mitigating the occurrence and transmission of infectious diseases on board marine and offshore assets can be separated into arrangement and operational measures. These measures reduce the

risk of contracting and transmitting infectious disease, thus protecting the health of the crew, passengers, and others in contact with the asset, while maintaining the asset in operational state.

The arrangement requirements contained in Section 2 of this Guide address the layout and configuration of spaces which can be used for the isolation and segregation of crew and passengers, and onshore visitors, as well as the ventilation and interior surfaces of certain accommodation or working spaces.

ABS recognizes that each infectious disease outbreak is different and may present different operational challenges. ABS also recognizes that the same objectives of early detection, prevention, and control of infectious diseases may be achieved using many different operational measures, which are outside the scope of this Guide. Guidelines on the operational measures to mitigate the risks of COVID-19 and other similar infectious diseases that are transmitted via air or direct and indirect contact can be found in the *ABS Guidance Notes on Response Measures to COVID-19 for the Marine and Offshore Industries*.

This Guide has been developed based on several independent governmental and commercial sources including the United States Centers for Disease Control and Prevention (CDC) [2], American National Standards Institute (ANSI) [3], [4], American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) [3], [4], American Society for Healthcare Engineering (ASHE) [3], The Facility Guidelines Institute [5], The American Institute of Architects (AIA) [5], the International Organization for Standardization (ISO) [6], [7], and the World Health Organization (WHO) [1], [8], [9].

## 2 Scope

Section 2 of this Guide focuses on the arrangement measures to mitigate infectious disease outbreaks. The requirements address isolation cabins, medical facilities, sanitary spaces and offices designated for use by shore personnel and visitors during an outbreak, storerooms for infectious waste, storerooms for cleaning agents and disinfectants, and the laundry room. The requirements are given with respect to the number, location, and layout of the aforementioned spaces, as well as ventilation and interior surfaces.

Section 3 of this Guide contains requirements for surveys during and after construction.

The requirements contained in this Guide do not replace any requirements of flag State, coastal State, port State, or other governing health authorities.

## 3 Application

This Guide is applicable to marine, offshore, and government assets including naval vessels, commercial vessels, drilling units, production installations, and other offshore units.

## 4 Classification Notations

At the Owner's or shipyard's request, an asset complying with the minimum arrangement criteria provided in this Guide in Sections 2 and 3 may be assigned a notation Infectious Disease Mitigation – Arrangements (**IDM-A**). The arrangement criteria from Section 2 related to any of the isolation cabins, office and sanitary spaces designated for the use by shore personnel and visitors, or stores for solid infectious waste, cleaning agents, and disinfectants may be met by the installation and use of portable modules.

If any of the portable modules installed on board an asset to satisfy the requirements for the **IDM-A** notation are removed from an asset, the asset will no longer maintain the **IDM-A** notation.

## 5 Regulatory Compliance

A prerequisite for obtaining the optional **IDM-A** notation is a valid Ship Sanitation Certificate (e.g., Ship Sanitation Control Exemption Certificate or Ship Sanitation Control Certificate) for all marine vessels that are required to have one as per the International Health Regulations (IHR 2005) [1].

For other marine and offshore assets, the requirements of the flag State, coastal State Authority, or any other jurisdictions which have responsibility for the food and water safety, waste management, and vector control on marine or offshore assets are to be satisfied.

## 6 Alternatives

ABS will consider alternative arrangements, criteria, and procedures, which can be shown to satisfy the criteria directly cited or referred to in this Guide. The demonstration of an alternative's acceptability can be made through either the presentation of satisfactory service experience or systematic analysis based on valid engineering principles.

## 7 Document and Plans to be Submitted for Engineering Review

For new construction, the drawings and documents are to be provided to ABS Engineering during the design phase. For existing assets, the arrangement drawings and plans, reflecting the current accommodation and work space configurations are to be provided to and reviewed by ABS Engineering, in advance of ABS Surveyor verification.

The following drawings and documents are to be prepared and submitted to ABS Engineering for review when the **IDM-A** notation is requested:

- i) General Arrangement-type plan view of each deck annotating the various spaces on each deck. Plan views of all accommodation and work spaces, including any portable modules, are to be included.
- ii) The heating, ventilation, and air conditioning (HVAC) system schematics/layout drawings and design specifications for all accommodation and work spaces, including any portable modules, if installed on board the asset.
- iii) List of materials used for surfaces in isolation cabins, anterooms, medical facilities, sanitary and office spaces designated for use by shore personnel and visitors during an outbreak, and the solid infectious waste storeroom. Materials used for floors, bulkheads, and furniture are to be submitted.

If portable modules are to be installed on board the asset in order to satisfy the arrangement requirements of this Guide for the **IDM-A** notation, all documentation related to design, construction, and installation of modules is to be provided to ABS Engineering as specified in the *ABS Guide for Portable Accommodation Modules*.

## 8 Definitions

For the purpose of this Guide, the following definitions apply:

*Accommodation Areas/Accommodation Spaces/Accommodation Block:* These include cabins, medical facilities (sick bays), offices, and recreation rooms.

*Anteroom:* A small room leading from a corridor into an isolation room. This room can act as an airlock, reducing the possibility of the escape of contaminants from the isolation room into the corridor.

*Cleaning:* Removal of visible soil (e.g., organic and inorganic material) from objects and surfaces. It is usually accomplished manually or mechanically using water with detergents or enzymatic products [10].

*Close Contact:* The exact definition is infectious disease-specific. In general, a close contact is a person who stayed in close proximity to a suspected or a confirmed case of an infectious disease without wearing accepted personal protective equipment. The probability of disease transmission is also a function of the length of exposure time (e.g. greater exposure time, greater probability of transmission).

*Confirmed Case:* A person with laboratory confirmation of infection, irrespective of clinical signs and symptoms or a person who meets the surveillance case definition of a confirmed case developed for the particular outbreak investigation.

*Crew:* Any person on board an asset, including the Master, who is not a passenger.

*Crew Spaces:* All areas on an asset intended for crew only, such as crew accommodation spaces and crew work spaces.

*Disinfection:* A process that eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects [10].

*Epidemic:* An increase, often sudden, in the number of cases of an infectious disease above what is normally expected in the population within that area during that specified time period.

*Isolation:* Separation of sick people with a contagious disease from people who are not sick [11].

*Microbe:* Microscopic bacteria, viruses, fungi, and protozoa that may cause disease.

*Outbreak:* an increase in the number of cases over baseline or “expected” number.

*Pandemic:* An epidemic that has spread over several countries or continents, usually affecting many people.

*Passenger:* Any person other than the Master and the members of the crew or other persons employed or engaged in any capacity on board an asset for the business of that asset.

*Pathogen:* Microbe or other organism (such as a parasite) that can cause disease in humans, animals, or plants.

*Sanitation:* Effective use of tools and actions to reduce the numbers and growth of bacteria, viruses, and fungi and help to maintain hygienic conditions.

*Surveillance:* Systematic and ongoing collection, collation, and analysis of data for public health purposes, and the timely dissemination of public health information for assessment and public health response as necessary [8].

*Surveillance Case Definition:* A set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently and accurately across reporting jurisdictions [12].

*Suspected Case:* The exact definition is infectious disease, and often outbreak, specific. In general, a suspected case is a person with clinical signs and symptoms of a particular disease, but without laboratory evidence.

*Vector:* An insect, other animal, or other vehicle that can transport an infectious agent [8].

*Work Spaces:* Areas allocated for work. Categories of work spaces include, but are not limited to, navigation bridge, control room, service spaces (e.g., galley, mess room, laundry room, storerooms), machinery spaces, and duty/control stations.

## 9 Abbreviations

|     |                                  |
|-----|----------------------------------|
| ABS | American Bureau of Shipping      |
| ACH | Air Changes per Hour             |
| AIA | American Institute of Architects |



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|          |   |
|----------|---|
| ANSI     | American National Standards Institute                                     |
| ASHE     | American Society for Healthcare Engineering                               |
| ASHRAE   | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| CDC      | United States Centers for Disease Control and Prevention                  |
| COVID-19 | CoronaVirus Disease - 2019  |
| HEPA     | High-Efficiency Particulate Air   |
| IHR      | International Health Regulations  |
| IMO      | International Maritime Organization                                       |
| ISO      | International Organization for Standardization                            |
| MODU     | Mobile Offshore Drilling Units  |
| PPE      | Personal Protective Equipment   |
| SOLAS    | International Convention for the Safety of Life at Sea                    |
| TMAS     | Telemedical Assistance Service  |
| UVGI     | Ultraviolet Germicidal Irradiation  |
| WHO      | World Health Organization   |



## SECTION 2 Arrangement Requirements for Infectious Disease Mitigation

### 1 General

Incorporating plans for infectious disease mitigation at the design stage can significantly impact the success of subsequent operational measures taken on board a marine or an offshore asset. This Section contains arrangement requirements for specific spaces inside the accommodation block and work spaces on marine or offshore assets in terms of their number, location, ventilation requirements, interior surface requirements, and telemedicine capabilities. These arrangement requirements are to be considered in addition to the requirements stated in the *ABS Rules for Building and Classing Marine Vessels (Marine Vessel Rules)*, *ABS Rules for Building and Classing Mobile Offshore Units (MOU Rules)*, other ABS Rules and Guides, and statutory regulations, as applicable.

The ventilation design requirements in this Guide for isolation cabins, designated sanitary spaces and offices, laundry room, and storerooms for solid infectious waste and cleaning agents and disinfectants are only applicable during an outbreak of an infectious disease on board a marine or an offshore asset. The ventilation system in these spaces is to be capable of being switched from its normal operation mode to an outbreak operation mode.

### 2 Isolation Cabins

#### 2.1 General Requirements

Isolating a confirmed or a suspected case of an infectious disease along with any of their close contacts into isolation cabins can assist in mitigating the transmission of an infectious disease on board a marine or offshore asset.

Isolation cabins are to be single-occupancy with a window to an open air space (open or fixed type) and a separate sanitary space with a toilet, a shower facility, and a non-hand operated tap. Open type window is to have a seal and is to be fully closed during an outbreak. Isolation cabin is not to have a balcony.

Regular crew or passenger accommodation cabins that satisfy the requirements of Subsection 2/2 can serve as designated isolation cabins during an outbreak of an infectious disease on board a marine or an offshore asset. The isolation cabins may also be constructed as portable modules, in which case they are to satisfy the requirements of Subsection 2/2 of this Guide, as well as the design, construction, and installation requirements for sleeping accommodation modules found in the *ABS Guide for Portable Accommodation Modules*.

Isolation cabins are to be clearly labeled “Isolation Cabin” when they are used as such.

#### 2.2 Number

Single-occupancy isolation cabins capable of holding at least 5% of the asset’s total complement are to be provided. These can be regular crew or passenger accommodation cabins or portable modules which can be readily converted to isolation cabins.

### 2.3 Location and Layout

The isolation cabins are to be grouped together and located at the end of the accommodation area corridor close to a direct exit or to a staircase with a direct exit to the outside space, which leads to the asset's embarkation/disembarkation station.

In the event of an outbreak, when a cabin is converted to an isolation cabin, it is to be provided with an anteroom. Anterooms are used for personnel entering the isolation cabins to don (put on) and doff (take off) the personal protective equipment (PPE). They serve to protect the people entering the isolation cabins and to enhance prevention of disease transmission.

A crew or a passenger cabin located next to the isolation cabin can act as an anteroom, provided there is a direct access from the anteroom to the isolation cabin (see Section 2, Figure 1). An anteroom between two isolation cabins with a direct access to both is permissible (see Section 2, Figure 2). When two cabins share a sanitary space, one of the cabins may be used as an anteroom, while the other one, with its associated shared sanitary space, can be used as an isolation cabin (see Section 2, Figure 3). The shared sanitary space is for use by the patient in the isolation cabin and serves as a passageway for entering the isolation cabin from the anteroom. The anteroom is not to have a balcony.

Doors between the isolation cabins and anteroom are:

- i)* To be self-closing with no hold-back device
- ii)* To swing into the anteroom
- iii)* Not to be fitted with any ventilation louvers
- iv)* To be sealed on their top and sides
- v)* To have an adjustable bottom seal
- vi)* To have a label on each side to indicate that only one door may be opened at a time

Doors between the anteroom and corridor are:

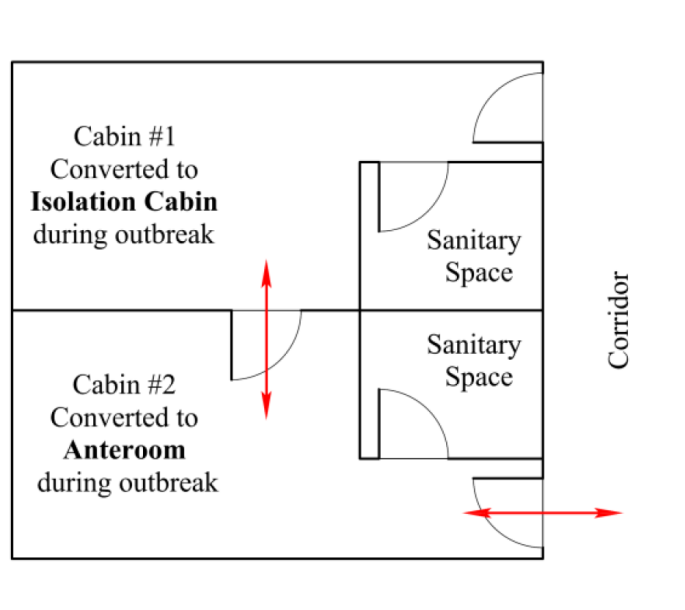
- i)* To be self-closing with no hold-back device
- ii)* To have a seal on their top and sides
- iii)* Not to require a key to unlock them from the inside
- iv)* To require a key to unlock them from the corridor
- v)* To have an adjustable bottom seal
- vi)* To have closed ventilation louvers, if fitted, during an outbreak
- vii)* To have a label on each side to indicate that only one door may be opened at a time

Doors leading to isolation cabins directly from the corridor are:

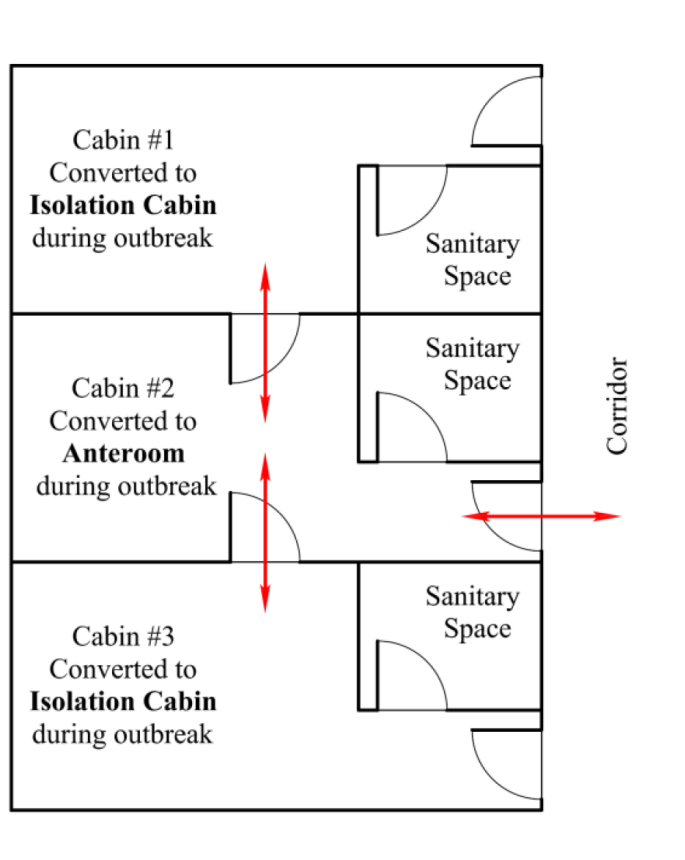
- i)* Not to require a key to unlock them from the inside
- ii)* To require a key to unlock them from the corridor
- iii)* To have closed ventilation louvers, if fitted, during an outbreak
- iv)* To have a label on each side to indicate that the doors are not to be used during an outbreak, except in emergency situations to escape from the isolation cabin

Anterooms and isolation cabins are to have sealed bulkhead joints and penetrations, monolithic ceilings with sealed bulkhead-ceiling interface, and sealed access panels in order to minimize the air leaks. Floor coverings are to be covered up the bulkheads.

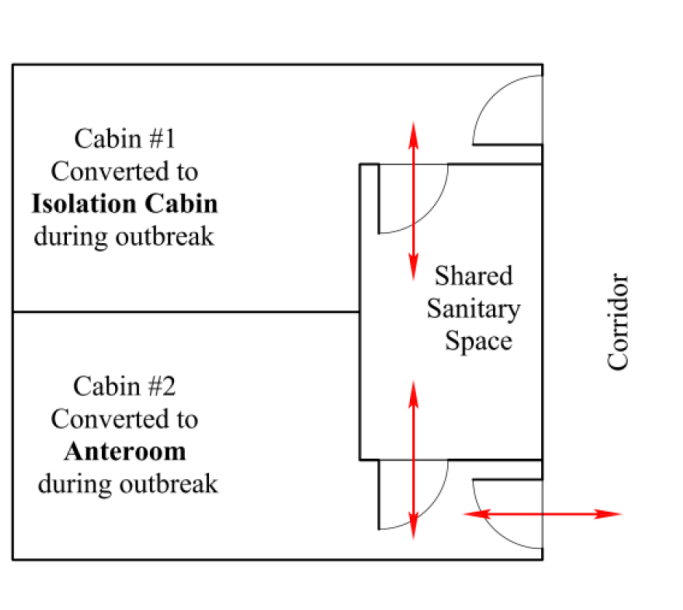
**FIGURE 1**  
**Isolation Cabin and Anteroom**



**FIGURE 2**  
**Two Isolation Cabins Sharing Anteroom**



**FIGURE 3**  
**Isolation Cabin with Shared Sanitary Space and Anteroom**



## 2.4 Ventilation System

The ventilation system for the cabins (when converted to serve as isolation cabins), and the associated anterooms, is to satisfy the following requirements:

- i) The anteroom is to be under negative pressure (larger air exhaust compared to air supply) with respect to the accommodation area corridor. Isolation cabins and the associated shared sanitary space are to be under a negative pressure with respect to the anteroom.
- ii) A pressure differential of at least  $-2.5$  Pa ( $-0.01$  inches of water column) is to be maintained between the anteroom and the accommodation area corridor, and between the isolation cabin or its associated shared sanitary space and the anteroom.
- iii) The isolation cabins and associated independent or shared sanitary spaces are to have at least 12 air changes per hour (ACH).
- iv) The anterooms and associated independent sanitary spaces are to have at least 10 air changes per hour.
- v) The duct supplying the air into the anteroom and isolation cabins with their independent or shared sanitary spaces is to have a gas-tight non-return damper/flap, and the supply air is to be filtered using 90% dust spot efficiency filter.
- vi) If more than one isolation cabin or anteroom, and their associated independent or shared sanitary spaces, are connected to the same supply duct, then the local supply duct branches to each such isolation cabin or anteroom, and their associated independent or shared sanitary spaces, are to be fitted with a gas-tight non-return damper/flap.
- vii) Exhaust air from the independent or shared sanitary spaces in anterooms and isolation cabins is to be exhausted directly to the open air, without recirculation.
- viii) Exhaust air from the anterooms and the isolation cabins, excluding the air from their associated independent or shared sanitary spaces, should be exhausted directly to the open air, without recirculation. Where this is not practicable, it may be recirculated, provided that it is passed through a high-efficiency particulate air (HEPA) filter before being mixed with the air from other spaces. Ultraviolet Germicidal Irradiation (UVGI) is not to be used as a replacement for the HEPA filter.

- ix)* The exhaust duct from isolation cabins, anterooms, and their associated independent or shared sanitary spaces is to be separated from the exhaust duct of other spaces.
- x)* If more than one isolation cabin or anteroom, and their associated independent or shared sanitary spaces, are connected to the same exhaust duct, then the local exhaust duct branches from each such isolation cabin or anteroom, and their associated independent or shared sanitary spaces, are to be fitted with a gas-tight non-return damper/flap.
- xi)* The exhaust fan serving isolation cabins, anterooms, and their associated independent or shared sanitary spaces is to be located outdoors, if practical. If the exhaust fan is located indoors, welded or otherwise sealed ductwork is to be used downstream of the exhaust fan.
- xii)* The exhaust outlet is to be located no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows. The exhaust outlet is to be located above the uppermost deck of the accommodation block that is located directly above the isolation cabin or anteroom. In case a portable accommodation module is used for isolation cabin and/or anteroom, the exhaust outlet is to be located above the module.
- xiii)* Contaminated air is to be discharged vertically and the exhaust outlet is to be clearly labeled as “Contaminated Air”.
- xiv)* The operation of the HVAC system from within the isolation cabin is to be disabled during an outbreak.

Means are to be provided to allow the determination of the differential pressure between the anteroom and the corridor, and between the isolation room, or its associated shared sanitary space, and the anteroom. This can be a small pipe fitting installed through the doors or bulkheads, threaded at one end to accept the hose barb fitting of the differential pressure manometer. When the pipe fitting is not in use, it is to be plugged with a threaded plug on one side and with a plastic plug on the other side. Other suitable arrangements may also be accepted.

## 2.5 Interior Surfaces

The interior surfaces of the cabins which can be converted to isolation cabins, the anterooms, and their associated independent or shared sanitary spaces are to satisfy the following requirements:

- i)* All exposed surfaces of sheathing or joiner panels on walls and bulkheads, as well as deck coverings, are to be accessible for cleaning and disinfection, moisture impervious (incapable of being penetrated by water or other liquids), and are not to be micro-perforated or corrugated.
- ii)* Bare metal surfaces, other than stainless steel and galvanized steel, are to be avoided.
- iii)* Untreated wooden surfaces without the finish (paint, lacquer, varnish, drying oil, wax, or shellac) are to be avoided.
- iv)* Coatings on interior surfaces are to be free of any visible cracks or defects.
- v)* Textiles and fabrics that are difficult to launder are to be avoided on floors, bulkheads, and furniture.
- vi)* Mattresses are to have plastic or other impermeable covers.
- vii)* Where possible, interior corners are to have a radius to facilitate cleaning.

## 3 Medical Facilities

### 3.1 Location and Layout

The asset’s medical facility or hospital is to be located as close as possible to the entrance into the accommodation block from an open deck space.

The medical facility or hospital entrance doors are:

- i) To be self-closing with no hold-back device
- ii) Not to be fitted with any ventilation louvers
- iii) To have a seal on their top and sides
- iv) To have an adjustable bottom seal

The medical facility or hospital is to have sealed bulkhead joints and penetrations, monolithic ceilings with sealed bulkhead-ceiling interface, and sealed access panels in order to minimize the air leaks. Floor coverings are to be covered up the bulkheads.

If any space within the medical facility is to be used as an isolation cabin, then such space is also to satisfy the requirements of Subsection 2/2 during an outbreak of an infectious disease.

### 3.2 Ventilation System

The ventilation system of the medical facility is to satisfy the following requirements:

- i) The medical facilities are to be under negative pressure with respect to accommodation area corridors or other spaces from which there is a direct entrance to the medical facility.
- ii) A pressure differential of at least  $-2.5$  Pa ( $-0.01$  inches of water column) is to be maintained between the medical facility and accommodation area corridors or other spaces from which there is a direct entrance to the medical facility.
- iii) The supply airflow is to be a minimum of 12 air changes per hour.
- iv) Each space inside the medical facility, which can be separated from other spaces with doors, is to have an air supply and air exhaust.
- v) All the exhaust air from the medical facilities is to be fed directly to the open air and is to be separated from other onboard exhaust systems.
- vi) A gas tight non-return damper (flap) is to be installed in the supply air duct.
- vii) The exhaust outlet is to be located no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows.

Means are to be provided to allow the determination of the differential pressure between the medical facility and accommodation area corridors or other spaces from which there is a direct entrance to the medical facility. This can be a small pipe fitting installed through the doors or bulkheads, threaded at one end to accept the hose barb fitting of the differential pressure manometer. When the pipe fitting is not in use, it is to be plugged with a threaded plug on one side and with a plastic plug on the other side. Other suitable arrangements may also be accepted.

### 3.3 Interior Surfaces

The interior surfaces of the medical facilities are to satisfy the requirements of 2/2.5 for the interior surfaces of isolation cabins, anterooms, and their associated independent or shared sanitary spaces.

## 4 Sanitary Spaces for Shore Personnel and Visitors

At least one sanitary space is to be designated for exclusive use by the shore personnel and visitors during an outbreak.

The designated sanitary spaces may also be constructed as portable modules, in which case they are to satisfy the requirements of Subsection 2/4 of this Guide, as well as the design, construction, and installation requirements for non-sleeping accommodation modules from the *ABS Guide for Portable Accommodation Modules*.

Any visitor requiring an overnight stay is to be treated as a crew member with appropriate screening, embarkation, and disembarkation protocols.

#### 4.1 Location

The designated sanitary spaces are to be located such as to minimize the possibility of contact between the crew or passengers and shore personnel or visitors. They are to be readily accessible from an outside entrance.

In the event of an outbreak, the outside direct entrances to the designated sanitary spaces are to be marked “Shore Personnel and Visitors Only”.

#### 4.2 Ventilation System

All air from the designated sanitary space is to be exhausted directly to the open air and the exhaust is to be separated from the exhaust duct of other spaces. The exhaust outlet is to be located no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows.

The exhaust airflow is to be a minimum of 15 air changes per hour.

#### 4.3 Interior Surfaces

The interior surfaces of the designated sanitary space are to satisfy the requirements of 2/2.5 for the interior surfaces of isolation cabins, anterooms, and their associated independent or shared sanitary spaces.

### 5 Designated Office for Shore Personnel and Visitors

A marine or an offshore asset is to have an office which can be designated for use solely by the shore personnel and visitors who come on board the asset during an outbreak to conduct necessary business.

The designated office may also be constructed as a portable module, in which case it is to satisfy the requirements of Subsection 2/5 of this Guide, as well as the design, construction, and installation requirements for non-sleeping accommodation modules from the *ABS Guide for Portable Accommodation Modules*.

Any visitor requiring an overnight stay is to be treated as a crew member with appropriate screening, embarkation, and disembarkation protocols.

#### 5.1 Location

The designated office is to be located such as to minimize the possibility of contact between the crew or passengers, and shore personnel or visitors. It is to be readily accessible from an outside entrance.

#### 5.2 Ventilation System

All air from the designated office is to be exhausted directly to the open air and the exhaust is to be separated from the exhaust duct of other spaces. The exhaust outlet is to be located no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows.

The supply airflow is to be at least 12 air changes per hour, and it is not to exceed the exhaust airflow.

#### 5.3 Interior Surfaces

The interior surfaces of the designated office are to satisfy the requirements of 2/2.5 for the interior surfaces of isolation cabins and anterooms.

### 6 Storage Spaces for Infectious Solid Waste

A marine or an offshore asset is to have a designated storeroom for storing infectious solid waste during an outbreak.



The designated infectious waste storeroom may also be constructed as a portable module. Containers or other portable modules for storage of solid infectious waste are to satisfy the requirements of Subsection 2/6 of this Guide.

### 6.1 Location

The storage space for infectious solid waste is to be separated from all other spaces. The entrance into the storage space for infectious solid waste can be from a storage space for non-infectious waste and is to be labeled “Infectious Waste” during an outbreak. The door is to be self-closing with no hold-back device.

The infectious waste storage space can be used to store non-infectious waste when there is no infectious disease outbreak.

The infectious solid waste is not to be exposed to direct sunlight. Any window installed in the space for storing infectious solid waste is to be provided with appropriate shades or blinds.

### 6.2 Ventilation System

The infectious solid waste storeroom is to be ventilated with all the exhaust air fed directly to the open air, and the exhaust is to be separated from the exhaust duct of other spaces. The exhaust outlet is to be no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows.

The exhaust airflow is to be a minimum of 10 air changes per hour.

### 6.3 Interior Surfaces

The interior surfaces of the space for storing infectious waste are to satisfy the requirements of 2/2.5 for the interior surfaces of isolation cabins, anterooms, and their associated independent or shared sanitary spaces.

## 7 Storage Spaces for Cleaning Agents and Disinfectants

A storeroom for cleaning agents and disinfectants may also be constructed as a portable module. Containers or other portable modules for storage of cleaning agents and disinfectants are to satisfy the requirements of Subsection 2/7 of this Guide. Permanent spaces and portable modules for storing flammable cleaning agents and disinfectants are to be considered high risk service spaces requiring additional design review in accordance with the *ABS Marine Vessel Rules*, *ABS Rules for Building and Classing Mobile Offshore Units*, or the *IMO MODU Code/SOLAS*, as applicable to the asset.

### 7.1 Location and Layout

When stored, cleaning agents and disinfectants are not to be exposed to direct sunlight. Any window installed in the space for storing cleaning agents and disinfectants is to be provided with appropriate shades or blinds.

If oxidizing disinfectants such as bleach (calcium hypochlorite, sodium hypochlorite) or hydrogen peroxide and flammable disinfectants containing alcohol are stored on board, separate storage spaces are to be provided.

### 7.2 Ventilation System

Each storeroom for cleaning agents and disinfectants is to be ventilated with the exhaust air fed directly to the open air. The exhaust airflow is to be a minimum of 10 air changes per hour. The exhaust outlet is to be located no less than 8 meters (26 feet) from all air intakes, natural ventilation points, doors, and open-type windows.

### 7.3 Interior Surfaces

All surfaces are to be accessible for cleaning and disinfection.

## **8 Laundry Room**

The laundry room is to have at least one washing machine capable of reaching a water temperature of at least 71°C (160°F) during a wash cycle and capable of adding chlorine bleach during a bleach cycle.

### **8.1 Ventilation System**

The laundry room is to be ventilated with the exhaust air fed directly to the open air. The exhaust airflow is to be a minimum of 15 air changes per hour. When mechanical supply ventilation is provided, the supply airflow is not to exceed the exhaust airflow.

## **9 Medical Advice**

The support infrastructure is to be in place for providing medical advice to doctors or designated medical care personnel. Means are to be provided to allow two-way voice or voice and data communication from the asset to TMAS (Telemedical Assistance Service) or other medical advice service from anywhere within the asset's service area.



## SECTION 3 Survey Requirements

### 1 Initial Surveys

This Subsection contains requirements for the initial survey of the arrangement aspects for assets requesting the **IDM-A** notation.

The process for obtaining the **IDM-A** notation is to comprise ABS Engineering reviews and ABS Surveyor verifications. The ABS Surveyor is to verify the following:

- i)* Accommodation and work spaces and equipment are in accordance with the requirements specified in Section 2 of this Guide.
- ii)* Availability of documents on board the asset providing evidence that the requirements of Subsection 1/5 have been satisfied. This means that a valid Ship Sanitation Control Exemption Certificate or Ship Sanitation Control Certificate is present on board marine vessels. For offshore assets or assets not required to have the Ship Sanitation Certificates, the ABS Surveyor is to verify that a valid evidence of satisfying the requirements of the flag State, coastal State Authority, or any other jurisdictions which have responsibility for the food and water safety, waste management, and vector control is present on board the offshore asset.
- iii)* The negative pressure of at least  $-2.5$  Pa ( $-0.01$  inches of water column) inside anterooms and isolation cabins is to be verified by the ABS Surveyor using a differential pressure manometer or equivalent instrument to Surveyor satisfaction.
- iv)* The negative pressure of at least  $-2.5$  Pa ( $-0.01$  inches of water column) inside the medical facility is to be verified by the ABS Surveyor using a differential pressure manometer or equivalent instrument to Surveyor satisfaction. The negative pressure differential is to be verified at each separate entrance to the medical facility.

### 2 Annual Surveys

This section contains requirements for annual surveys of the arrangement aspects for assets to maintain the **IDM-A** notation.

For maintenance of the **IDM-A** notation, the ABS Surveyor is to verify/perform the following at each Annual Survey:

- i)* Fire, repair and damage reports since the previous Initial, Annual, or Special Periodical Survey, if any
- ii)* Any structural or mechanical modifications to the asset in accommodation and work spaces referenced in Section 2 since the previous Initial, Annual, or Special Periodical Survey that have been submitted to and reviewed by ABS Engineering
- iii)* An examination of accommodation and work spaces referenced in Section 2 as follows:
  - a)* An examination of isolation cabins and anterooms (at random), medical facilities, and designated office and sanitary spaces for shore personnel and visitors, including their interior surfaces
  - b)* An examination of storage spaces for infectious solid waste and for cleaning agents and disinfectants, including their interior surfaces
  - c)* An examination of the ventilation systems of above-mentioned spaces at random

- iv)* Items *ii)* to *iv)* from Subsection 3/1

During the Surveyor's review of the available information, a determination will be made as to whether changes or alterations have taken place that could affect the **IDM-A** notation.

### 3 Special Periodical Surveys

This section contains requirements for special periodical surveys of the arrangement aspects for assets to maintain the **IDM-A** notation.

For maintenance of the **IDM-A** notation, the ABS Surveyor is to verify/perform the following at each Special Periodical Survey:

- i)* All the items covered by the Annual Survey as required in Subsection 3/2:
- a)* An examination of all isolation cabins and anterooms is to be performed as per the approved plans in lieu of random examination required in item *iii)* of Subsection 3/2.
  - b)* An examination of ventilation systems of all accommodation and work spaces referenced in Section 2 is to be performed as per the approved plans in lieu of random examination required in item *iii)* of Subsection 3/2.
- ii)* Laundry room washing machine is in accordance with the requirements specified in Subsection 2/8 of this Guide
- iii)* Communication equipment for obtaining medical advice from onshore doctors is in accordance with the requirements specified in Subsection 2/9 of this Guide

During the Surveyor's review of the available information, a determination will be made as to whether changes or alterations have taken place that could affect the **IDM-A** notation.

### 4 Special Considerations

It is recognized that unusual or unforeseen conditions may lead to cases where one or more of the parameters of interest in granting a notation may temporarily fall outside the range of acceptability.

When a departure from criteria is identified, either during the notation's initial issuance or reconfirmation process, it is to be reviewed by ABS in consultation with the shipyard or the Owner. When the arrangement aspects of the asset depart from the stated criteria, these are to be subjected to special consideration by ABS upon the receipt of details about the departure. Depending on the degree and consequences of the departure, the shipyard or Owner may be required to provide an assessment and remediation plan to obtain or maintain the notations.



## APPENDIX 1 References

### 1 ABS References

*ABS Rules for Building and Classing Marine Vessels*

*ABS Rules for Building and Classing Mobile Offshore Units*

*ABS Guide for Portable Accommodation Modules*

*ABS Guidance Notes on Response Measures to COVID-19 for the Marine and Offshore Industries*

### 2 Other References

- 1) WHO, *International Health Regulations (2005)*, 2nd ed., Geneva: World Health Organization, 2008.
- 2) CDC, "Guidelines for Environmental Infection Control in Health-Care Facilities," July 2019. [Online]. Available: <https://www.cdc.gov/infectioncontrol/guidelines/environmental/index.html>. [Accessed June 2020].
- 3) ANSI/ASHRAE/ASHE, "Standard 170-2008: Ventilation of Health Care Facilities," American Society of Heating, Refrigerating and Air-Conditioning Engineers, Atlanta, 2008.
- 4) ANSI/ASHRAE, "Standard 55-2013: Thermal Environmental Conditions for Human Occupancy," American National Standards Institute, Atlanta, GA, 2013.
- 5) FGI, AIA, "Guidelines for Design and Construction of Hospital and Health Care Facilities," The American Institute of Architects, Washington, 2006.
- 6) ISO, "Standard 7547:2002 Ships and marine technology — Air-conditioning and ventilation of accommodation spaces — Design conditions and basis of calculations," International Organization for Standardization, Geneva., 2002.
- 7) ISO, "Standard 7726:1998(E) Ergonomics of the thermal environment – Instruments for measuring physical quantities," International Organization for Standardization, Geneva, 1998.
- 8) WHO, "Handbook for Inspection of Ships and Issuance of Ship Sanitation Certificates," World Health Organization, Geneva, 2011.
- 9) WHO, "Guide to ship sanitation," World Health Organization, Geneva, 2011.
- 10) CDC, *Guideline for Disinfection and Sterilization in Healthcare Facilities*, Atlanta: Centers for Disease Control and Prevention, 2019.
- 11) CDC, "Quarantine and Isolation," Centers for Disease Control and Prevention, 4 2020. [Online]. Available: <https://www.cdc.gov/quarantine/index.html>. [Accessed 7 2020].
- 12) CDC, "Surveillance Case Definitions," Centers for Disease Control and Prevention, 8 2017. [Online]. Available: <https://wwwn.cdc.gov/nndss/case-definitions.html>. [Accessed 7 2020].