

GUIDE FOR

PORTABLE ACCOMMODATION MODULES JANUARY 2013

Guide to Color Coding Used in Online Version of the Guide

The following summarizes the colors corresponding to Rule Changes, Corrigenda items and editorial changes in the Guide files which are available for download.

Rule Changes:

NOTICE NO. 1 – May 2014 (effective 1 May 2014)

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PORTABLE ACCOMMODATION MODULES

JANUARY 2013 (Updated May 2014 – see next page)

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Updates

May 2014 consolidation includes:

- February 2013 version plus Notice No. 1 and Corrigenda/Editorials

February 2013 consolidation includes:

- January 2013 version plus Corrigenda/Editorials

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Foreword

This *Guide for Portable Accommodation Modules* has been developed to provide a consolidated set of requirements for portable accommodation modules that may be installed onboard a variety of vessels or offshore installations.

This Guide outlines the ABS requirements for the design and survey of accommodation modules installed onboard ABS-classed Mobile Offshore Drilling Units (MODUs), and Mobile Offshore Units (MOUs), Offshore Installations (fixed or floating), Steel Barges, and Steel Vessels. The Guide may be voluntarily applied to other type of portable modules.

The requirements contained in this Guide are for design, construction, installation, and survey of accommodation modules and are based on the applicable ABS Rules and Guides, for the vessel type. No part of an accommodation module is to be designed and built to a lesser standard than a deckhouse on the same facility unless explicitly indicated in this Guide.

This Guide becomes effective on 15 January 2013.

Users are advised to check periodically on the ABS website 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.

11/13/2012 10:00 AM

GUIDE FOR PORTABLE ACCOMMODATION MODULES

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SECTION 1 Introduction

1 Purpose

This document provides ABS requirements for the design, construction, and survey of accommodation modules installed onboard ABS-classed vessels or offshore units. Flag Administration requirements should be considered in addition to this Guide.

3 Background

The installation of modular buildings for use as living quarters, industrial spaces, and workshops has become increasingly prevalent in recent years. Irrespective of the amount of time that portable modules are installed onboard, the potential risks to personnel within these buildings can be comparable to those within a traditional living quarters structure.

Due to the transient nature of portable accommodation modules, it is possible that the buildings may be installed on a number of different types of vessels and offshore units over their life. In recognizing that the ABS class requirements differ based on the type of host vessel or facility, this Guide has been created to outline the process for the design and survey of the modules and to establish the requirements for modules which can be used on any category of offshore drilling unit, production facility, barge, steel vessel, or high speed craft.

5 Application (1 May 2014)

This Guide is intended for accommodation modules installed onboard ABS-classed vessels or offshore units.

Industrial modules in which people normally work (laboratories, workshops, wireline units, mudloggers, ROV control rooms, etc.) need not comply with this Guide so long as the modules are unmanned during heavy weather and sufficient space for the entire complement of personnel assigned to work in the unit(s) is provided in a deckhouse, superstructure, or module complying fully with applicable structural requirements. A notice indicating the same is to be affixed to the module.

Industrial modules are to comply with Appendix 7-2-A2 of the ABS MODU Rules or Appendix 7-A-17 of the ABS Rules for Survey After Construction (Part 7), as applicable.

Non-sleeping accommodation modules are to comply with this Guide. However, the structural requirements of this Guide need not apply so long as the same conditions listed above for industrial modules are met. If non-sleeping accommodation modules are stacked, the stacking arrangements are to be reviewed and surveyed in accordance with this Guide.

Containers or portable buildings provided for storage or to house miscellaneous industrial equipment need not be considered class items. This Guide may be applied on a voluntary basis. **The equipment installed in such containers or portable buildings may however be subject to additional requirements within other ABS Rules.** Equipment essential to the operation of the vessel is not considered miscellaneous industrial equipment.

This Guide is not applicable to modular buildings which protect against down flooding or those considered buoyant in stability or load line calculations.

This Guide is not applicable to accommodation modules intended for Passenger Vessels or Special Purpose Ships carrying more than 60 persons. Modules intended for installation onboard this type of vessel are subject to additional requirements and will be considered on a case by case basis.

This Guide is intended for modules generally not to exceed length, width, and height dimensions of $14 \times 4.9 \times 3$ m ($46 \times 16 \times 10$ ft).

Modules constructed on or after 15 January 2013 are to comply with the requirements contained herein. Existing modules to be installed onboard ABS classed units or vessels after 1 January 2018 are to comply with this Guide.

7 Class Approval Process (1 May 2014)

The ABS approval process for accommodation modules is a four-step process as outlined below:

- Design Review of the Module Section 2
- Survey of the Module at Fabrication Facility Section 3
- Design Review for Installation Approval Section 4
- Survey onboard Host Vessel Section 5

The ABS review process of the module commences with drawings and documentation detailing the module's general arrangements, structural fire protection, electrical configuration, structural design, and machinery and piping systems being submitted to the ABS technical office for review. Upon completion of the review, drawings will be returned to the submitter and forwarded to the attending ABS Surveyor. Receipt of the drawings by the ABS Surveyor permits the physical survey of the module at the fabrication facility to be commenced.

Once a host vessel for the module is determined, design review for installation approval can be commenced. Upon receipt of the documentation detailing the module and the proposed location onboard the host vessel, the ABS technical office can review the arrangements. Once the ABS engineers have determined that the proposed location onboard the host vessel is suitable for the subject module, stamped drawings will be returned to the submitter and made available to the attending ABS Survey office. Upon receipt of these drawings, the attending ABS Surveyor may attend the vessel and confirm that the installation of the modules is in accordance with the approved arrangements.

The manufacturer is to assign a unique serial number to identify all modules being reviewed to this Guide. The initial submission of drawings is to specifically indicate the serial number of modules to be built in accordance with the drawings.

9 Definitions

Accommodation Module. Space used for sleeping cabins, offices, hospitals, cinemas, games and hobby rooms, barber shops, halls, dining rooms, lounges, corridors, lavatories, pantries, galleys, and similar spaces. Laundries and storage rooms are not considered accommodation buildings.

Industrial Module. Spaces used for industrial activities such as laboratories, workshops, wireline units, mudloggers, ROV control rooms, etc. Industrial modules may contain office space and still be considered an industrial module.

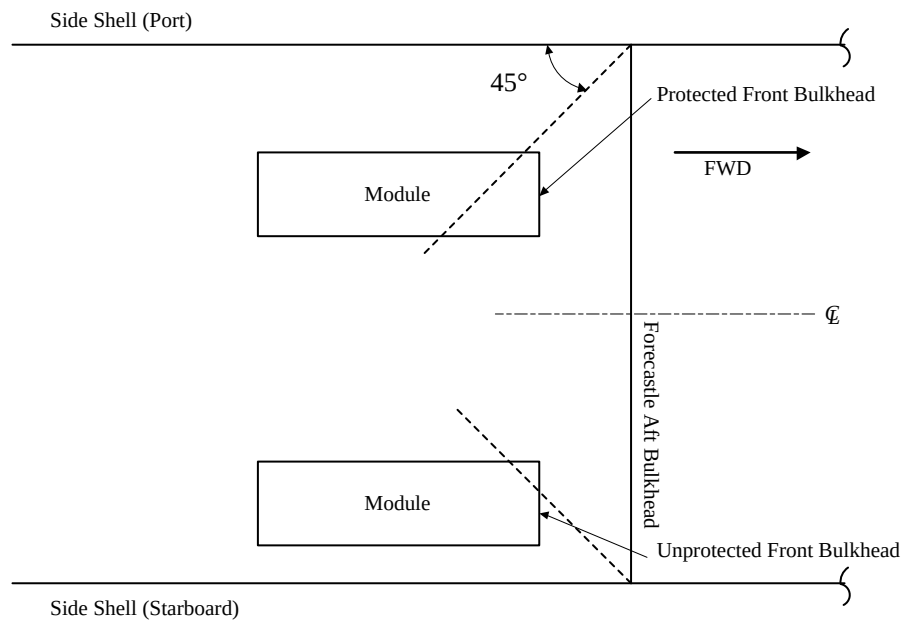
Sleeping Accommodation Module. Spaces used for sleeping cabins and hospitals. Offices, cinemas, games and hobby rooms, barber shops, halls, dining rooms, lounges, corridors, lavatories, pantries, galleys, and similar spaces are not considered sleeping accommodation modules.

Protected Front. The front of the module is considered protected if it fully sits within the space enclosed by lines drawn aftwards and inwards 45 degrees from the corners of an adjacent effective structure (for example, forecastle aft bulkhead). See Section 1, Figure 1.

Where the aft deck of an Offshore Support Vessel is protected by wing walls, the forward bulkhead of all first tier modules may be considered "protected front". The height of the wing walls are to be not less than the standard height of superstructures, as defined in Annex I, Regulation 33 of International Conventions on Load Lines.

Unprotected Front. The front of the module is considered unprotected if it sits outside the locations defined as protected front

FIGURE 1
Illustration of Protected and Unprotected Front Bulkheads



SECTION 2 Design Review of Module

1 General

Drawings detailing the module's general arrangements, structural fire protection, electrical configuration, structural design, and machinery and piping systems are to be submitted for review. The specific drawings and details to be submitted are dependent on the type of module. The information below presents the typical drawings and details to be submitted for each discipline dependent on the end use of the module.

3 Plans and Data to be Submitted

The following plans and data are to be submitted:

- Structural fire protection plan
- Joiner work details
- Ventilation plan – including penetration details, capacities and alarm arrangements. See Subsection 2/11 and 2/15.17.
- Public address system (PA). See 2/15.5.
- General alarm system (GA). See 2/15.7.
- Combined PA/GA. See 2/15.9.
- Module Internal Electrical System One-Line diagram
- Fire detection and alarm systems. See 2/15.15.
- Booklet of basic electrical details. See 2/15.21.1.
- Cable connection and penetration arrangements.
- General arrangement of piping within the module (Section 4-6-1 of the *Steel Vessel Rules*)
 - Metallic piping (Section 4-6-2 of the *Steel Vessel Rules*)
 - Plastic piping (Section 4-6-3 of the *Steel Vessel Rules*)
- Sanitary system details (Sections 4-6-1 and 4-6-2 or Section 4-6-3 of the *Steel Vessel Rules*)
- Compressed air systems (appropriate requirements of 4-6-7/5 of the *Steel Vessel Rules*)
- Deck drains and scuppers (4-6-4/3 of the *Steel Vessel Rules*)
- Potable water system where applicable (Sections 4-6-1 and 4-6-2 or Section 4-6-3 of the *Steel Vessel Rules*)
- Other piping systems not listed above depending on type and service (Sections 4-6-1 and 4-6-2 or Section 4-6-3 of the *Steel Vessel Rules*)
- Diagrammatic plan of the piping systems including design pressure and temperature of the systems and a bill of materials with the following details: material specification (type and grade), pressure rating, wall thickness, and standards of construction for all piping components
- Firefighting equipment, where applicable
- Fire control plan, where applicable
- Structural drawings (section, elevation, decks, etc.)

- Structural calculations (racking, deck loads, etc.)
- Structural details of windows and doors

Where applicable the following plans and data are to be submitted:

- Instrumentation system wiring diagram for monitoring, control and safety system wiring, if provided
- Walk-in refrigerator locked-in alarm. See 2/15.13.
- Hazardous area protection arrangements – including required alarms. See 2/15.19.

5 Structural Fire Protection Requirements

5.1 General

All portable accommodation modules certified by ABS are to meet the requirements of this section.

This Subsection is applicable to modules whose exterior boundaries are constructed of steel. Use of other materials is subject to special consideration. Modules designed to a recognized standard for a special vessel type (i.e., High Speed Craft) may be approved with appropriate service restrictions.

Special consideration will be given to modules that contain stairways as defined in 2/9.3(4). Modules containing control stations are not covered by this section and should be designed in accordance with the applicable requirements of SOLAS Chapter II-2 or the Rules to which the host vessel is subjected.

This Guide is intended for modules incorporating Method IC construction as defined by SOLAS. Special consideration may be given to acceptance of other methods so long as appropriate fire detection, alarm, and sprinkler systems are provided.

Reference is to be made to SOLAS and the International Code for Application of Fire Test Procedures (Resolution MSC.307(88)) (FTP Code).

5.3 Administration Review

Where the module has been certified by an Administration, the same may be considered for acceptance by ABS in place of review to this section. Any limits to the Administration review and the acceptance criteria used are to be appropriately reflected in the module approval letter.

7 Materials of Construction

7.1 Primary Deck Coverings

Primary deck coverings, if applied within accommodation and service spaces, are to be of approved material which will not readily ignite or give rise to smoke or toxic or explosive hazards at elevated temperatures, this being determined in accordance with the Fire Test Procedures Code.

7.3 Insulating Materials

Insulating materials are to be non-combustible.

Insulating materials are to be attached to the module boundaries using welded steel pins and clips unless an alternative arrangement has been approved.

Vapor barriers and adhesives used in conjunction with insulation, as well as the insulation of pipe fittings for cold service systems, need not be of noncombustible materials, but they are to be kept to the minimum quantity practicable and their exposed surfaces are to have low flame-spread characteristics.

7.5 Ceilings and Linings

All linings, ceilings, draught stops and their associated grounds are to be of noncombustible materials.

7.7 Use of Combustible Materials

Noncombustible bulkheads, ceilings and linings fitted in accommodation and service spaces may be faced with combustible materials, facings, moldings, decorations and veneers provided such spaces are bounded by noncombustible bulkheads, ceilings and linings in accordance with the provisions of 2/7.9 to 2/7.11 and 2/7.15.

7.9 Maximum Calorific Value of Combustible Materials

Combustible materials used on the surfaces and linings specified in 2/7.7 are to have a calorific value* not exceeding 45 MJ/m² of the area for the thickness used. The requirements of this paragraph are not applicable to the surfaces of furniture fixed to linings or bulkheads.

* Refer to the recommendations published by the International Organization for Standardization, in particular ISO 1716, Reaction to fire tests for building and transport products – Determination of the heat of combustion.

7.11 Total Volume of Combustible Materials

Where combustible materials are used in accordance with 2/7.7, they are to comply with the following requirements:

- i) The total volume of combustible facings, moldings, decorations and veneers in accommodation and service spaces is not to exceed a volume equivalent to 2.5 mm veneer on the combined area of the walls and ceiling linings. Furniture fixed to linings, bulkheads or decks need not be included in the calculation of the total volume of combustible materials; and
- ii) In the case of modules fitted with an automatic sprinkler system complying with the provisions of the Fire Safety Systems Code, the above volume may include some combustible material used for erection of “C” class divisions.

7.13 Low Flame-spread Characteristics of Exposed Surfaces

The following surfaces are to have low flame-spread characteristics in accordance with the Fire Test Procedures Code:

- i) Exposed surfaces in corridors and ceilings in accommodation and service spaces and control stations; and
- ii) Surfaces and grounds in concealed or inaccessible spaces in accommodation and service spaces and control stations.

7.15 Paints, Varnishes and Other Finishes

Paints, varnishes and other finishes used on exposed interior surfaces are not to be capable of producing excessive quantities of smoke and toxic products, this being determined in accordance with the Fire Test Procedures Code.

7.17 Materials Containing Asbestos

Installation of materials which contain asbestos is prohibited.

9 Fire Integrity

9.1 Fire Integrity of Exterior Boundaries

The exterior boundaries are to be steel but are not required to be of “A” class standard.

If the module is to be rated “A-0”, “A-60”, or “H-60”, exterior boundaries are to be constructed of minimum 4 mm thick steel with the appropriate insulation. Alternatives may be considered where appropriate testing has been carried out.

Reference should also be made to the special requirements contained in Subsection 2/13.

See Chapter 2, Section 1 of the *ABS Rules for Building and Classing Facilities on Offshore Installations (Facilities Rules)* for the definition of “H-60” divisions.

Where a boundary is penetrated for the passage of electric cables, pipes and vent ducts, such penetrations are to maintain the integrity of the boundary penetrated.