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Guidelines for Accommodation Modules

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CHAPTER 1 GENERAL

Section 1 General

101. Application

1. This Guideline apply to the accommodation modules which are installed on the offshore structures classed with the Society, and which are intended to be registered under the Society. However, this Guideline does not apply to offshore structures subject to Korea Ship Safety Act.

2. Accommodation modules to which these Guidelines apply are prohibited from being used while offshore structures are navigating (or moving) and may be used while offshore structures are anchored in fixed locations within the work area.

3. In addition, accommodation module shall be installed only for industrial personnel on board for the work of offshore structures.

4. The Society does not compel the use of accommodation modules and may approve in accordance with this Guidance upon the request of the applicant. And alternatives and novel features which deviate from or are not directly applicable to this Guidelines, **Pt 1, Ch 1, 105.** of Rules for the Classification of Steel Ships is to be followed. **Pt 1, Ch 1, 105. (4)** of Rules for the Classification of Steel Ships applies as follow.

   - Where there are same as records of accommodation modules approved by any Society which is subject to verification of compliance with QSCS(Quality System Certification Scheme) of IACS.

5. Attention is to be taken to comply with the International Conventions and National Regulations of the coastal state in which the accommodation modules are located during operation, and statutory requirements of the International Conventions and the National Authority may be stricter than requirements of this Guidelines.

102. Definitions

The definitions of terms and symbols used in this Guideline are to follow the Rules for Classification of Steel Ships, Rules and Guidance for Offshore Structures and other technical rules, unless otherwise specified in this Guidelines.

1. “Module” means an independent constituent unit of a standardized part or system constituting a building, furniture, machine, etc. A module in this Guideline refers to a constituent unit of some deckhouses.

2. “Accommodation Module” means space used for sleeping cabins, offices, hospitals, games and hobby rooms, barber shops, halls, dining rooms, lounges, corridors, lavatories, pantries, galleys, and similar spaces.

3. “Host structure” means the offshore structure on which the accommodation modules are installed.

4. “Industrial Personnel” means personnel accommodated for the purpose of industrial activities conducted on ships and/or offshore structures. ⚓

CHAPTER 2 CLASSIFICATION SURVEYS

Section 1 General

101. General

1. Classification survey of accommodation modules (hereinafter referred to as "module") are in accordance with Pt 1 of Rules for the Classification of Steel Ships, except for those specified in this Chapter.
2. The application for Classification Survey in accordance with this Guideline is to be made by the Owner of host structure.

Section 2 Registration Survey

201. Drawings and Other Documents to be Submitted

1. At a Registration Survey, it is to be ascertained that the modules comply with the Guideline based on the drawings and documents submitted to the Society. In this case, the applicant is to submit the relevant drawings and documents out of listed in **2.** and **3.**
2. The relevant drawings and documents listed in the following (1) through (13) are to be submitted for approval for modules to be newly constructed;
   (1) General arrangement plans showing the proposed location of the module onboard the structure
   (2) Construction drawings of modules (including the dimensions of structural members, specifications of materials and joint details)
   (3) Plan showing that each of the exterior boundaries of the modules has the appropriate fire rating for the proposed location and orientation.
   (4) Drawing including means of escape
   (5) Hazardous area plan showing the host structure's hazardous areas and the proposed module location to allow an assessment to be made of;
      - The distance between air intakes and the hazardous areas
      - The host structure's approach to ventilation shutdown and gas detection at air intakes
      - The suitability of battery powered equipment on the exterior of the accommodation with respect to the standard for the host structure
      - The suitability of the module location in relation to any fire and blast studies that have been conducted.
   (6) Drawings showing scantlings and details for the supporting deck structure on which the module is to be installed.
   (7) Drawings and documents showing modules and deck connection details
   (8) Updated fire control plan for the host structure
   (9) Drawings and documents showing the integration with the host structure's piping, electrical, ventilation, and general emergency alarm/public address system.
   (10) Details to establish that the installation of the module does not reduce the effectiveness of the emergency shutdown system of the host structure
   (11) Host structure's load analysis to demonstrate that sufficient power is available such that any additional power required by the module does not adversely affect the safety of the host structure
   (12) Drawings with details of additional lifesaving equipment
   (13) Other drawings and documents as deemed necessary by the Society
3. The relevant drawings and documents listed in the following (1) through (6) are to be submitted for reference for modules to be newly constructed ;
   (1) Specifications for modules
   (2) Calculation dates or sheets relevant to drawings and documents for approval specified in **2.** above
   (3) Instruction of protective coatings

(4) Welding procedure specifications
(5) Procedures of non-destructive testing
(6) Other drawings and documents as deemed necessary by the Society

4. At a Registration Survey of modules with installation history, the drawings and data to be submitted for the modules are to be same as specified in 2. and 3. above. However, some of these drawings and documents may be omitted submitting the past survey records and certificates if deemed appropriate by the Society.

202. Examinations for Workmanship

1. Workmanship of modules is to be examined and ascertained to be in good order when any of the following (1) through (6) is relevant;
   (1) Testing as specified in Pt 2, Ch 1 where the materials need to be in compliance with the requirements in Pt 2, Ch 1 and testing as specified in Pt 4 where the equipment need to be in compliance with the requirements in Pt 4
   (2) Testing as specified in Pt 2, Ch 2 where the welding works need to be in compliance with the requirements in Pt 2, Ch 2
   (3) Non-destructive testing and hose testing where requested by the Surveyor
   (4) When, in process of manufacturing and assembling of structural members, requested by the Society
   (5) Performance tests of various closing devices, fire detection systems, etc.
   (6) Other cases when considered necessary by the Society

203. On board installation survey

1. Survey for connection between the structural members of module and hull structure
   (1) Survey for welded connection between the structural members of module and offshore structure
   (2) Survey for connection between the structural members of module and offshore structure other than welding
   (3) Non-destructive test (When considered necessary by the Surveyor)
2. Identification of materials and equipment certificates for modules
3. Integrity of watertight penetrations and connections such as piping, electrical, machinery, ventilation systems
4. Fire-extinguishing appliances and general emergency alarm/public address system, lifesaving appliances, as applicable, fire detection, means of escape, main and emergency lighting, and any required emergency shutdowns.
5. Compliance with any special requirements from the flag Administration.
6. When the approval was granted based on a site-specific operation, the Surveyor is to confirm that the unit is within the specified geographic area.
7. Confirmation that the module is free of any physical damage or alterations that may affect its strength and effectiveness of its service
8. Other cases when considered necessary by the Society

Section 3 Periodical Survey

301. General

1. In case that the module is installed during an Annual Survey, Intermediate Survey and Special Survey for host structure, the following items are to be visually examined and ascertained to be in good order.
   (1) Connection between the structural members of modules and offshore structure
   (2) Any physical damage or alterations that may affect its strength and effectiveness of its service
   (3) Checking the provision and randomly examining the condition of the portable fire extinguishers.

Section 4 Occasional Survey

401. General

1. Occasional Surveys are conducted when they fall under either of the following conditions at the periods other than those of Periodical Survey.
   (1) When the modules have been damaged or are about to be repaired or altered. (including demolition)
   (2) Other cases where surveys are designated or whenever survey is deemed necessary by the Surveyor. ⚓

CHAPTER 3 STRUCTURE AND STABILITY

Section 1 General

101. General

1. The structure and stability of the modules are to comply with the requirements applicable to the host structure, unless otherwise specified in this Guidelines.
2. In addition, parts of this chapter can be omitted where these modules have appropriate certificates accepted by the Society.

102. Materials

1. The materials used for modules and equipment are to be those complying with the requirements in Pt 2, Ch 1, unless otherwise specified. Where materials other than those specified in the Rules are used, the use of such materials and corresponding, scantlings are to be submitted and specially approved by the Society. Full consideration is to be given to the yield ratio of the material used, structural location, and suitability for design temperature.
2. Steel plates used in construction of modules are to have good weldability, and higher strength and low alloy steel plate is to be identified their chemical and mechanical properties by the steel maker's mill sheet, etc.

Section 2 Structure Requirements

201. Arrangement

1. Modules in which industrial personnel normally work or live are not to be installed forward of the collision bulkhead.
2. Modules are not to extend beyond the ship sides.
3. Modules should generally be elevated from the deck to provide a minimum sill height of 150 mm to doors and 760 mm for ventilation openings unless otherwise approved.
4. Modules are not to be located above or below crude oil storage tanks or process areas.

202. Modules Structure

1. The design load of the module shall be greater than or equal to the water head value of the module location in the host structure, and design load is to be defined by designer or manufacturer.
2. The thickness of boundary wall plating and the scantlings of stiffeners are not to be less than those required in deckhouse of the host structure, taking the head of water specified in. 1. as h.
3. In the case of corrugated bulkheads, pitch of corrugated bulkheads is to be in accordance with following.

$$s = (a+b) + 2c\cos\phi$$

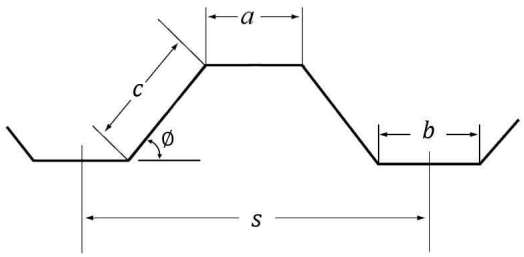

Fig 3.1 Pitch of Corrugated bulkheads

203. Deck

1. The thickness of deck where the module is installed and the scantling of stiffeners are in accordance with the deck regulations of the host structure, and the design load is determined by the designer based on the planned load of the module.
2. Girders and transverses are to be fitted, when necessary, to support the beams. Additional girders are to be fitted, under deck machinery or other heavy concentrated loads. In way of deck girders or special deep beams, the deck plating is to be of sufficient thickness and suitably stiffened to provide an effective part of the girder.
3. Deck girders are to be composed of face plates provided along the lower edge. Tripping brackets are to be provided at an interval of about 3 m and where the breadth of face plates exceeds 180 mm on either side of the girder, these brackets are to be so arranged as to support the face plates as well.

204. Structural Analysis

1. Where multiple tiers of modules are stacked two or more high, full details and calculations are to be provided.
2. The arrangement is to be designed for the most onerous combination of motions, wind, and green water in accordance with the requirements of the host structure. However, reduced environmental criteria may be considered for operations intended for a specific geographic area.
3. The analysis is to be performed using recognized calculation methods by the Society and is to be fully documented and referenced. If the Society requests information related to the program used for analysis and data to prove its accuracy, it is to be submitted if necessary.
4. Unless connections of structural members are specifically detailed, proper consideration is to be given in the structural analysis to the degree of restraint at such connections. Structural connections are to be detailed in such a manner as to provide full transmission of stresses between members joined, and to minimize stress concentrations.

205. Securing to the Deck

1. In general modules are to be permanently welded to deck via steel plates at each corner of the module. Steel plates securing the module to the deck are to be sized in accordance with Subsection **203.** and **204.**
2. Means of securing other than welding may be accepted provided the efficiency of the tie downs are design reviewed by the Society. Twist locks and corner castings may be accepted so long as the loads calculated do not exceed the maximum capacity (SWL) for shear, compression, and tension with an additional safety factor acceptable to the Society.
3. Twist locks are to be welded in the locked position to prevent inadvertent unlocking and fully automatic twist locks are not to be used.

Section 3 Stability

301. Stability Requirements

The stability information for the host structure is to be included to account for the modules.

Section 4 Equipment

401. Side Scuttles and Rectangular Windows

Side scuttles and rectangular windows applied to modules are in accordance with **Pt 4, Ch 4** and **Ch 8.**

402. Doors and Other Closing Appliances

1. The thickness of door plate and the size of stiffeners are in accordance with 202.
2. The door and other closing appliances of the module are fitted with efficient weathertight means of closing and there are to be framed and stiffened so that the whole structure is adequately designed to withstand local green water pressures.
3. Doors on exterior bulkheads are to be of steel or other equivalent material and are to be provided with gaskets and clamping devices which are to be to the satisfaction of the Society.
4. External doors are to be operable from both sides and they are to be fitted with a notice on both sides of the door stating that the doors are to be kept closed. But doors need not be self-closing.

403. Protection of Steel

Unless otherwise approved, all steel work is to be suitably coated with paint or an equivalent.

404. MLC Convention

Upon request by the applicant, the module may be reviewed to MLC Convention standard(s) for crew accommodation.

Section 5 Fire Protection and Fire Fighting

501. General

1. In principle, the fire protection and fire fighting for module shall be complied with the requirements of deckhouse or superstructure of the host structure on which the module is installed and also the provisions of this section are to be complied with.
2. Modules shall be protected Method IC as defined by SOLAS and 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).

502. Fire Integrity

1. The exterior boundaries are to be steel but are not required to be of “A” class standard. However, external doors are to be self-closing and at least “A-0” class standard.
2. Modules installed directly above or below a category A machinery space or control room are to be insulated to A-60 standard for the adjacent deck boundaries. Otherwise, it shall be of steel or equivalent materials.
3. The exterior of a module that contains a Category A Machinery Space is to be surrounded by A-60 boundaries unless the module is restricted from being installed adjacent to other modules, deckhouses, or superstructure.

503. Fire Detection and Alarm System

Modules are to be covered by an automatic fire detection system and alarm system, method IC method of protection, as defined in SOLAS Regulation 9.2.3.1.1. And the system is to be capable of being interfaced with the host structure’s fire detection system and alarm system.

504. Fire Extinguisher

In general, at least one portable fire extinguisher is to be easily accessible and located inside each deck of module. In addition, the details of the portable fire extinguishers and fixed fire extinguishing system should be determined according to the Rules of the host structure in which the module is

installed.

505. Ventilation

If the host structure is fitted with a means of automatically shutting down ventilation after combustible gas detection at the air intake, then the module is to be capable of operating in a manner consistent with this philosophy. Consideration should be given to making suitable, accessible, marked terminals available for this purpose.

506. Hazardous Areas

Modules are not to be installed in hazardous areas and their ventilation intakes, exhausts or other openings are not to be within the hazardous area. Hazardous areas follow the Rules of the host structure in which the module is installed. ⚓

CHAPTER 4 ELECTRICAL EQUIPMENT AND PIPING EQUIPMENT

Section 1 Electrical Equipment

101. Electrical Equipment

1. Electrical equipment installed in modules are to be determined in accordance with Pt 6 of the Rules for the Classification of Steel Ships, the Rules of the host structure.

2. High voltage systems should not be used on modules or for their interconnection to the host structure. Where the electrical loads are such that the operation or interconnection at less than 1 kV is not practicable, then special consideration can be given to the use of high voltages.

3. Where there is a conflict or inconsistency in design approaches (e.g., hazardous area equipment, earthed vs. unearthed systems, conduit vs. braided cable), the acceptability of the module for the host structure will need to be considered on a case-by-case basis. It is to be established that;
   (1) The electrical equipment and cables on the module are adequately sized for their design loads and protected against overload and short circuit.
   (2) When kind and adjusting value of over-current trip device, with time delay, for short-circuit protection device for modules are selected, cooperation between protection devices of host structure is to be considered.
   (3) Additional safety means are to be provided for portable electrical apparatus for use in confined or exceptionally damp spaces where particular risks due to conductivity exist.
   (4) Unused socket outlets used in wet areas are to be provided with covers to maintain their IP rating ;
      (A) Unused socket outlets in galleys and laundries are to be provided with covers so as to have a minimum IP-44 degree of protection.
      (B) Unused socket outlets in bathrooms and showers or those exposed to external weather conditions are to be provided with covers so as to have a minimum of IP-55 degree of protection.

4. A public address system and devices for sounding the general emergency alarm are to be provided and made capable of connection to the host structure. Also, speakers are to be arranged such that the public address announcements are clearly audible in all parts of the module. The sounding devices should preferably be of the same type (e.g., bells) as those installed on the host structure in order to avoid the introduction of inconsistent or confusing alarm sounds.

5. In module internal public spaces, such as those portions of the accommodation which are used for meeting halls, dining rooms, lounges and corridors, emergency lighting is to be provided for at least the same duration as required for the host structure.

Section 2 Piping Equipment

201. Piping Equipment

In principle, piping systems are to be in accordance with Pt 5, Ch 6 of the Rules for Classification of Steel Ships and Rules of the host structure in which the module is installed. ⚓

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