



## **RULES FOR BUILDING AND CLASSING**

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# **MOBILE OFFSHORE DRILLING UNITS 2008**

### **PART 1 CONDITIONS OF CLASSIFICATION**

**(Supplement to the ABS Rules for Conditions of Classification –  
Offshore Units and Structures)**

**American Bureau of Shipping  
Incorporated by Act of Legislature of  
the State of New York 1862**

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## PART

# 1

### **Foreword** (1 January 2008)

For the 2008 edition, Part 1, “Conditions of Classification” was consolidated into a generic booklet, entitled *Rules for Conditions of Classification – Offshore Units and Structures (Part 1)* for all units, installations, vessels or systems in offshore service. The purpose of this consolidation was to emphasize the common applicability of the classification requirements in “Part 1” to ABS-classed offshore units, pipelines, risers, and other offshore structures, and thereby make “Conditions of Classification” more readily a common Rule of the various ABS Rules and Guides, as appropriate.

Thus, this supplement specifies only the unique requirements applicable to mobile offshore drilling units. This supplement is always to be used with the aforementioned *Rules for Conditions of Classification – Offshore Units and Structures (Part 1)*.

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## Conditions of Classification

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## **1 Scope and Conditions of Classification**

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### **1 Classification** *(1 January 2008)*

The requirements for conditions of classification are contained in the separate, generic *ABS Rules for Conditions of Classification – Offshore Units and Structures (Part 1)*.

Additional requirements specific to mobile offshore drilling units are contained in the following Sections of this Part.

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### **2 Classification Symbols and Notations** *(1 January 2008)*

A listing of Classification Symbols and Notations available to the Owners of vessels, offshore drilling and production units and other marine structures and systems, “List of ABS Notations and Symbols” is available from the ABS website “<http://www.eagle.org/absdownloads/index.cfm>”.

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# **3 Rules for Classification** *(1 January 2008)*

## **1 Application of Rules**

### **1.1 General**

These Rules are applicable to Mobile Offshore Drilling Units intended for unrestricted ocean service, except where specifically mentioned otherwise.

These requirements are applicable to those features that are permanent in nature and can be verified by plan review, calculation, physical survey or other appropriate means. Any statement in the Rules regarding other features is to be considered as a guidance to the designer, builder, Owner, et al.

### **1.3 Application** *(2005)*

The application of the Rules is, in general, based on the contract date for construction between the shipbuilder and the prospective owner. (e.g., Rules which became effective on 1 July 2004 are not applicable to a drilling unit for which the contract for construction was signed on 30 June 2004.) See also 1-1-4/3 *of the ABS Rules for Conditions of Classification – Offshore Units and Structures (Part 1)*.

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## CHAPTER 1 **Scope and Conditions of Classification**

## SECTION 4 **Plans and Design Data to be Submitted**

### 1 **Hull and Design Data (1992)**

Plans showing the scantlings, arrangements and details of the principal parts of the structure of each unit to be built under survey are to be submitted for review and approved before the work of construction are commenced. These plans are to clearly indicate the scantlings, joint details and welding, or other methods of connection. In general, plans are to include the following, where applicable, and are to be submitted in triplicate. Additional plans may be required where the required attendance of the Surveyor is anticipated at more than one location.

- General arrangement
- Inboard and outboard profile
- An arrangement plan of watertight compartmentation
- Diagrams showing the extent to which the watertight and weathertight integrity is intended to be maintained, including the location, type and disposition of watertight and weathertight closures.
- Summary of distributions of fixed and variable weights for each reviewed condition.
- Type, location and quantities of permanent ballast.
- Loadings for all decks
- Transverse sections showing scantlings
- Longitudinal sections showing scantlings
- Decks
- (1999) Structural fire protection layout plan for decks and bulkheads
- (1999) Plans or a booklet of joiner work details of construction for all decks, bulkheads and doors
- (1999) Ventilation plan showing all horizontal and vertical duct work listing all materials, duct size and gauge

- (1999) Penetration details through bulkheads and decks to accommodate ventilation, piping, electrical, etc.
- (1999) Escape plan (depicting escape routes as determined by 5-3-1/1)
- (1996) Helicopter deck with helicopter particulars (See 3-2-2/3.1)
- Framing
- Shell plating
- Watertight bulkheads and flats
- Structural bulkheads and flats
- Tank bulkheads and flats with level of top of overflows and air pipes
- Pillars and girders
- Diagonals and struts
- Legs
- Structure in way of jacking or other elevating arrangements
- Structures supporting the drilling derrick
- Stability columns and intermediate columns
- Hulls, pontoons, footings, spudcans, pads or mats
- Superstructures and deck houses
- Arrangement and details of watertight doors and hatches
- Foundations for anchoring equipment, industrial equipment, etc., where attached to hull structure, superstructures or deckhouses
- Welding details and procedures
- Lines and offsets
- Curves of form or equivalent data
- Wind heeling moment curves or equivalent data
- Capacity plan
- Tank sounding tables
- Corrosion control arrangements
- Methods and locations for nondestructive testing
- Plans for conducting underwater inspections in lieu of drydocking
- A description of environmental conditions including minimum anticipated atmospheric and sea temperatures for each mode of operation

### 3 Machinery Plans

Plans are to be submitted showing the arrangements and details of all propulsion and auxiliary machinery, steering gear, boilers and pressure vessels, electrical systems, jacking or other self-elevating systems, bilge and ballast systems, fire extinguishing systems, and other pumps and piping systems as described in 4-1-1/9, 4-2-1/3, 4-3-1/5 and 5-2-1/3.

## 5 Calculations

The following calculations are to be submitted.

- Structural analysis, including fatigue analysis
- Resultant forces and moments from wind, waves, current, mooring and other environmental loadings
- Effects of icing on structural loadings and stability
- Wind resistance area of exposed structural elements
- Stability calculations, both intact and damaged
- Significant operational loads from drilling derrick, riser tensioners and other similar type significant loadings
- Calculations substantiating adequacy of structure to transmit forces between legs and hull through the jacking or other self-elevating system
- Evaluation of the unit's ability to resist overturning while bearing on the sea bed
- Submitted calculations are to be suitably referenced
- Results from model tests or dynamic response calculations may be submitted as alternatives or a substantiation for required calculations.

## 7 Additional Plans

Where certification under the other regulation described in Section 1-1-5 *of the ABS Rules for Conditions of Classification – Offshore Units and Structures (Part 1)* is requested, submission of additional plans and calculations may be required.

## 9 Submissions

Plans from designers and builders are generally to be submitted in triplicate, one copy to be returned to those making submission, one copy for the use of Surveyor where the unit is being built and one copy to be retained in the Technical office for records.

Manufacturer's plans are to be submitted in quadruplicate where construction is to be carried out at a plant other than that of the builder.

Additional copies may be required when the required attendance of the Surveyor is anticipated at more than one location.

All plan submissions originating from manufacturers are understood to have been made with the cognizance of the builder.

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## CHAPTER 1 Scope and Conditions of Classification

### SECTION 5 Operating Manual

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An operating manual which is consistent with the information and criteria upon which classification is based is to be placed aboard the unit for the guidance of the operating personnel. Units not meeting the criteria of 3-1-2/1.3, 3-2-3/7.1.2 and 3-2-3/7.3.2 for unrestricted service are to have the notation **Restricted Service** placed in the Operating Manual. In cases where units are designed to the criteria for unrestricted service, but where certain additional conditions specified by the Owner are presented which do not meet the criteria for unrestricted service, the Operating Booklet is to contain a notation **Limited Service Condition** for such additional condition. Insofar as classification is concerned, the operating manual is to include, as appropriate, the following information:

#### 1.1

A general description of the unit, including major dimensions, lightship characteristics;

#### 1.3

Summaries of approved modes of operation (See 3-1-1/17), including for each mode of operation:

- i) (2008) Limiting environmental conditions, including wave height and period, wind velocity, current velocity, minimum air and sea temperatures, sea bed penetration, spud can-soil stiffness, air gap, and water depth;
- ii) Design deck loadings, mooring loads, icing loads, variable load, total elevated load, cantilever load, rated capacities of derricks, cranes and elevating systems and types of helicopter for which the helideck is designed;
- iii) Draft or draft range, leg length, spud can position and whether buoyant or non-buoyant, disposition of movable equipment (See 3-3-1/3.1) such as cantilevers, drilling masts, crane booms, etc.;
- iv) Maximum allowable KG versus draft curves or equivalent and associated limitations or assumptions upon which the allowable KG is based;
- v) Disposition (open or closed) of watertight and weathertight closures (See 3-3-1/9);
- vi) Identification of “Restricted Service” or “Limited Service” conditions.

## 1.5

Information showing:

- i)* General arrangements;
- ii)* Preload capacity (See 3-1-2/1.13 and 3-2-3/5.7);
- iii)* Watertight and weathertight boundaries, location of unprotected openings, and watertight and weathertight closures;
- iv)* Type, location and quantities of permanent ballast;
- v)* Allowable deck loadings (See 3-1-2/1.11);
- vi)* Capacity, centers of gravity and free surface correction for each tank;
- vii)* Capacity and centers of gravity of each void provided with sounding arrangements but not provided with means of draining [See 3-1-2/1.3.3(a)];
- viii)* Location and means of draining voids, as specified in 4-2-4/3.3
- ix)* Hydrostatic curves or equivalent;
- x)* Hazardous areas (See Section 4-3-6);
- xi)* (2003) Simplified electrical one line diagrams of main power and emergency power systems;
- xii)* Schematic diagrams of the bilge, ballast and ballast control system;

## 1.7

Ballasting procedure as specified in 4-2-4/13.1;

## 1.9

Recommended sequence of emergency shut-downs as specified in 4-3-5/7;

## 1.11

Procedure for elevating and preloading;

## 1.13

Loading and KG work sheets, sample calculations for each mode of operation and instructions for their use.

## 1.15

A description of the specific locations on the unit where equipment brought onboard for the purpose of conducting well test operations may be placed and any action that need be taken to safely accommodate this equipment.

The Operating Manual is to be submitted for review by the American Bureau of Shipping solely to ensure the presence of the above information which is to be consistent with the design information and limitations considered in the unit's classification. The American Bureau of Shipping is not responsible for the operation of the unit.

The Operating Manual required by this section does not need to be in addition to that required by flag and coastal Administrations. These administrations may require that additional information be included in the Operating Manual.

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### **6 Construction Booklet**

A set of plans showing the location and extent of different grades and strengths of structural materials, together with a description of the material and welding procedures employed, should be placed aboard the unit.

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