

PETRONAS TECHNICAL STANDARDS

DESIGN AND ENGINEERING PRACTICE

Technical, procedural and specifications

Offshore Buildings

PTS 37.17.01.40

NOVEMBER 2010



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PTS Circular 2010 – 37.17.01.40



PTS No:	37.17.01.40
PTS Title:	Offshore Building

This revision of PTS **37.17.01.40 - Offshore Buildings (November 2010, Revision 1)** is the updated version of PTS **20.070**.

The PTS **20.132 (December 1983)** will be obsolete and removed from PTS binder / e-repository from herein onwards.

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Revision History

Rev No.	Reviewed by	Approved by	Date

PREFACE

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1.0 SCOPE

This specification establishes the minimum requirements for offshore buildings, excluding the Accommodation Modules.

2.0 GENERAL

The Contractor shall design, fabricate and install the offshore buildings as depicted on the contract drawings and specifications.

3.0 BUILDING REQUIREMENTS

The Contractor shall be responsible for the following:-

- a. The facilities and equipment by this specification, both inside and outside of the buildings.
- b. All material, labour, equipment, testing, supervision, plant facilities, consumable supplies, and tools as required for, and incidental to, the design and fabrication of all the buildings required to complete the offshore facilities.
- c. Ensure that all materials, equipment, tools, or supplies to be incorporated permanently into the buildings are new, sound, free from defects and conform to the size and/or capacity and quality specified and approved by the Company. Contractor shall, when required, furnish satisfactory evidence as to type and quality of materials, equipment, tools and supplies.
- d. Perform the architectural, structural, mechanical, and electrical design of the buildings.
- e. Ensure that the buildings are suitable for a marine environment and are structurally sound to withstand the loads developed during handling, transportation, and inplace conditions.
- f. Ensure that the buildings are completely furnished, operational, and otherwise ready for use after fabrication and prior to offshore installation.
- g. Ensure that non-combustible materials are used in the buildings and that A-60 (one-hr) fire rating walls and roofs are installed in accordance with the specified codes and standards.
- h. Provide gutters for all buildings in accordance with standard industry practices.

4.0 CODES AND STANDARDS

All buildings design, fabrication, testing and acceptance shall conform to the requirements of the latest edition of the following codes and standards, except as otherwise provided in this specification:

- a. AISC "Specification for the Design, Fabrication and Erection of Structural Steel Buildings," latest edition.
- b. OSHA "Occupational, Safety and Health Administration," latest edition.
- c. BSI-BS 476 "Fire Tests on building materials and structures".
- d. "National Plumbing Code, "latest edition.

- e. "Illumination Engineering Society's Lighting Handbook", latest edition.
- f. U.K. Department of Energy "Offshore Installations: Guidance on Design and Construction" (known as D.O.E. Guidance Notes).
- g. Inter-Governmental Maritime Consulting Organization International Conference on Safety of Life at Sea (known as SOLAS). The requirement for passenger ship carrying more than 36 passengers shall apply.
- h. PETRONAS Technical Standards (PTS) that are specified in this PTS 20.132.
- i. Other British Standards specified in this PTS 20.132.

5.0 ENVIRONMENTAL CONDITIONS

The environmental conditions are as specified in PTS 20.073 and 20.074.

6.0 STRUCTURAL

The building frame shall consist of structural steel and/or framed-steel members, connected together to form a self-supporting rigid frame that is adequately designed to withstand all applicable design loads in accordance with PTS 20.074 "Design of Decks, Modules and Bridges". All grits shall be flushed with the exterior of the members.

Structural steel shall conform to ASTM A-36, or equal.

Steel for studs, tracks and bridging shall meet the requirements of ASTM-A570-78 "Specification for Hot rolled Carbon Steel Sheet and Strip, Structural Quality, " and shall be given a factory-applied oven-dried coat of rust-resisting red-zinc-chromate paint.

The buildings shall be fabricated with framed openings in the walls and roof for equipment, piping, exhausts, doors, and any other items.

7.0 ARCHITECTURAL

7.1 General

The building materials and construction shall conform to the requirements of SOLAS and DOE specifications. The buildings shall be properly enclosed and corrosion-resistant materials shall be used for floor, wall and roof. Joints and openings shall be sealed against moisture penetration and to reduce thermal conductivity.

The overall heat-transfer coefficient of all exterior walls and roof shall be a maximum 0.068 KJ/sec-m² °C (0.20 Btu/hr-sq ft- °F), using the combined values of the exterior and interior finish materials and insulation. All closures in walls, floor and roof shall form an incombustible, water and air tight seal around the service lines, electrical cables, etc. Use of M.C.T.'s shall be mandatory for all cables and service lines entering and leaving the building. All marks and scratches shall be touched up to match the original coating. Fire ratings of walls, roof and flooring shall be indicated on the drawings.