PETROBRAS	**TECHNICAL SPECIFICATION**	**Nº:** I-ET-3010.00-5400-947-P4X-008	
	CLIENT:		**SHEET:** 1 of 7
	JOB:		-
	AREA:		
SRGE	**TITLE:** **ESCAPE ROUTE**		INTERNAL
			ESUP

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INDEX OF REVISIONS

REV.	DESCRIPTION AND/OR REVISED SHEETS
0	ORIGINAL. Cancels and replaces I-ET-3010.00-5400-947-PPC-015_B ESCAPE ROUTE.
A	REVISED WHERE INDICATED
B	REVISED WHERE INDICATED

	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G	REV. H
DATE	AUG/23/18	JUN/30/20	AUG/22/22						
DESIGN	ESUP	EPS	EPS						
EXECUTION	LNOGUEIRA	CWEQ	CWEQ						
CHECK	DANIELA	B79G	B79G						
APPROVAL	B.FERREIRA	UP6E	EK9U						

SUMMARY

1 SCOPE

This document establishes the minimum technical requirements for escape routes to be provided to an Offshore Unit.

2 ABBREVIATIONS AND DEFINITIONS

2.1 Abbreviations

- **DPC:** *Diretoria de Portos e Costas* - Brazilian Ports and Coasts Directory
- **FSS:** Fire Safety Systems
- **IMO:** International Maritime Organization
- **MODU:** Mobile Offshore Drilling Units
- **NORMAM:** *Normas da Autoridade Marítima* - Brazilian Maritime Authority Standards
- **NR:** *Normas Regulamentadoras* – Regulatory Standards
- **SOLAS**: Safety of Life at Sea

2.2 Definitions

- **Main Escape Route:** A demarcated route to conduct people to a safer place (accommodations, muster station or embarkation station).
- **Secondary Escape Route:** A demarcated route to conduct people from a certain place to a main escape route.

3 APPLICABLE STANDARDS AND RECOMMENDATIONS

Basic and/or detailing designs shall be developed in accordance with the requirements herein established. It must always be considered publications in course.

- IMO-SOLAS: International Convention for the Safety of Life at Sea - 1974, and Amendments in Force
- IMO-MODU CODE: Code for the Construction and Equipment of Mobile Offshore Drilling Units - 2009, and Amendments in Force
- FSS CODE – Fire Safety Systems Code – The International Code for Fire Safety Systems
- *NORMAM* 01: *Normas da Autoridade Marírtima para Embarcações em Mar Aberto – Ministério da Marinha – DPC* (meanning: Maritime Authority

Standards for Vessels Employed in Open Sea Navigation – Ministry os the Marine).

- *NORMAM* 05: *Normas da Autoridade Marírtima para Homologação de Material e Autorização de Estações de Manutenção - Ministério da Marinha - DPC* (meaning: Maritime Authority Standards for Approval of Material and Authorization of Mantenance Stations - Ministry os the Marine).

- *NORMA REGULAMENTADORA* - NR-37 *Segurança e Saúde em Plataformas de Petróleo NR-37* (meaning: Regulatory Standards – NR-37 – Safety and Health Oil Plataforms NR-37).

- ABNT NBR 12694:1992 *Especificação de Cores de Acordo com o Sistema de Notação Munsell* (meanning: Color Specification According to the Munsell Notation System)

- Requirements of the Classification Society of the Unit;

3.1 PETROBRAS Specification

- I-ET-3010.00-5400-947-P4X-002 – Safety Signaling

4 TECHINICAL REQUIREMENTS

4.1 General

4.1.1 All areas of Offshore Units shall be provided with signaled escape routes and with emergency lighting.

4.1.2 The escape routes shall be designed in such a way that there is always the possibility of escape of all the places of the Offshore Unit, considering possible accidental scenarios that can prevent any route, ensuring that there is always an alternative unimpeded route.

4.1.3 Process areas, utilities, engine rooms, pump rooms and similar spaces shall have at least two escape routes in opposite positions and at all elevations. In engine rooms and pump rooms, one of the routes shall be protected against fire and smoke (escape trunk).

4.1.4 Main corridors of Accommodations shall be classified as main escape routes. The main corridors are those that give access to the cabins, muster stations, and the internal and external stairs to the Accommodation module.

4.1.5 Main escape routes of Offshore Units shall be designed in a way other than the cargo handling routes, and their use shall be prohibited for other purposes, so they are always completely unobstructed and available.

4.1.6 At the first level of the process plant, intersections between cargo handling routes and main escape routes will be accepted for eventual passage of cargo between

the Unit's sides. In these cases, alternative routes shall be proposed during project and later considered in EERS analyses.

4.1.7 On main deck, intersections between cargo handling routes and main escape routes should be limited to the minimum necessary. In these cases, alternative routes shall be proposed in the project and later considered in EERS analyses.

4.1.8 Areas or rooms with CO_2 central batteries, rooms protected by CO_2 and inert gas generators rooms shall have, at least two access doors and, at least one of them shall open to external area and the others can open for rooms not protected by CO_2. When one of the doors cannot access the external area, the other doors shall give access to rooms which are not protected by CO_2.

4.1.9 No escape route doors shall be locked, latched or hold, either internally or externally, and may only be locked with a safety device enabling any worker to open it easily from within the workplace or accommodation.

4.2 Construction Details

4.2.1 The main escape routes in external areas shall be placed around the periphery of the Unit, as much as possible.

4.2.2 All main routes, both outside and inside, shall be at least 1.2 m wide and 2.1 m high (free). Landings thereat shall enable stretcher carrying an injured person to pass, held by two attendants.

4.2.3 In escape routes inside the accommodation block, the distance of 1.2 m shall be taken as the distance between the handrail and the opposite bulkhead or between the two handrails.

4.2.4 All secondary routes shall be at least 1.0 m wide and 2.1 m high (free), for Hullside and Topside.

4.2.5 Lines to be used to mark the main and secondary routes limits shall be 100 mm wide and shall be painted in White color (Munsell notation N 9.5). (ATTACHMENT).

4.2.6 Arrows showing direction of main and secondary routes shall be painted in White color (Munsell notation N 9.5). (ATTACHMENT)

4.2.7 Escape routes shall be painted in Green color (MUNSELL notation 2.5 G 5/10) in anti-slippery coating, surrounded on each side by 100 mm width stripes and having arrows spaced at maximum 3000 mm. Arrows and stripes shall be in White (Munsell notation N 9.5).

4.2.8 Emergency exit doors: Safety Red (Munsell notation 5 R 4/14) with marking “Saída de Emergência”, “Emergency Exit” (red letters) over horizontal 500mm height White stripe.

4.2.9 Escape Hatches: Safety Red (Munsell notation 5 R 4/14).

4.2.10 Surface of escape route deck shall be of non-slip type and painted in Green color

(Munsell notation 2.5 G 5/10).

4.2.11 All corridors that are in the way of the Escape Routes must have at least the same dimensions of them.

4.2.12 Double leaf internal doors must be provided in rooms where it will be possible to have a great number of people. e.g., mess room; cinema; TV/video room and; briefing room.

4.2.13 The escape routes doors shall not cause obstruction on such escape routes.

4.2.14 Emergency doors at enclosed places shall open outward.

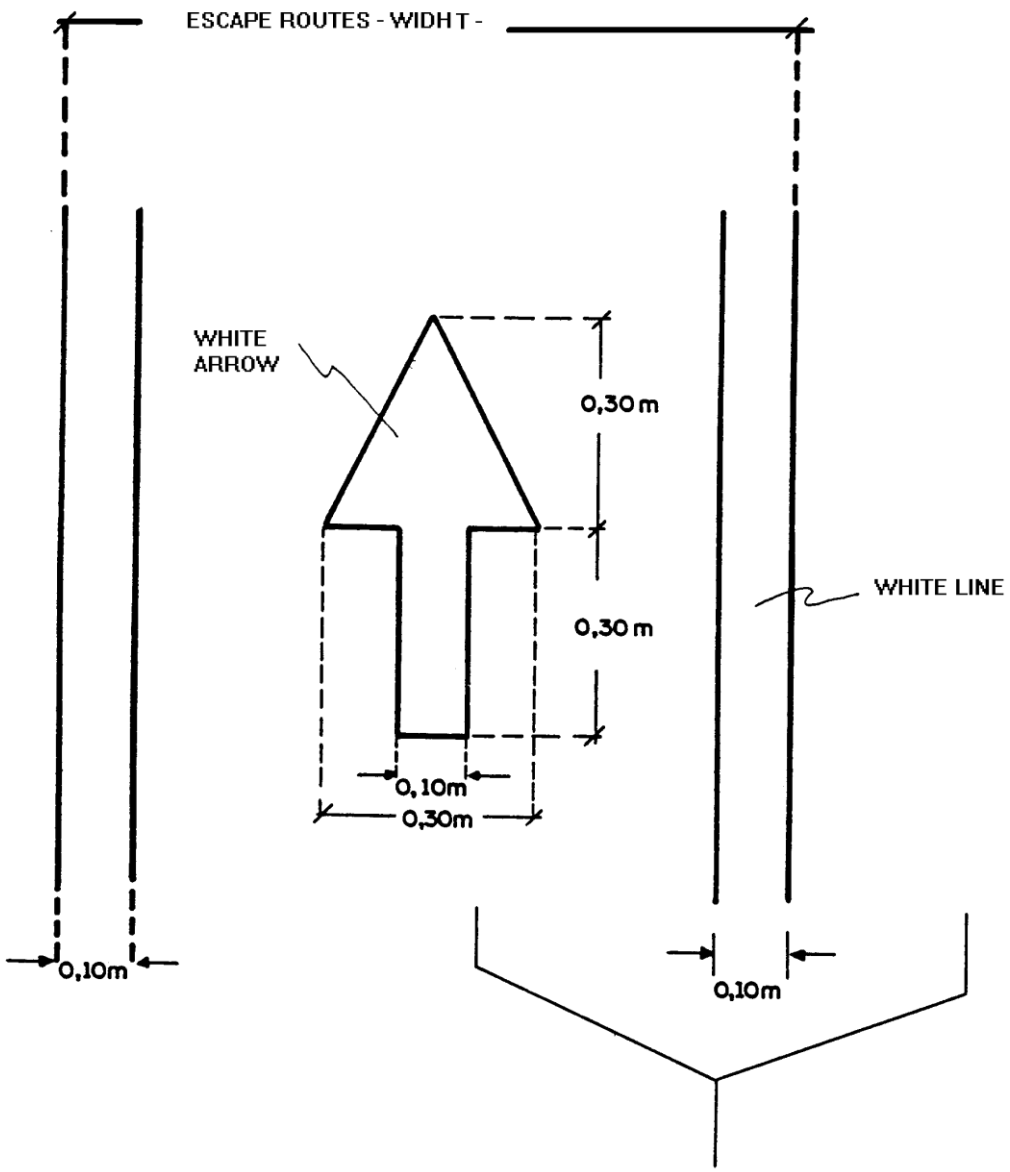
4.2.15 Vertical main escape routes shall be stairways whose width shall not be less than 1.2 m.

4.2.16 Any accommodation level shall have at least two opposite emergency exits and their doors shall open in the direction of the escape routes.

4.2.17 At least a stairway with landing shall be installed on each leg located in the vertexes of a semi-submersible unit.

5 ATTACHMENT

5.1 Escape Route Signaling


ESCAPE ROUTES - WIDHT -
WHITE ARROW
0,30 m
0,30 m
0,10m
0,30m
WHITE LINE
0,10m
0,10m