TEMPORARY REFUGE

A blast-rated Temporary Refuge (TR) suitable for offshore operations. Consisting of an air-tight strengthened 30ft A60 container with air-supply for over 2 hours, the TR offers a safe location for personnel in the event of fire, explosion, or a release of toxic and explosive gases, notably H_2S and hydrocarbons.

PARTICULARS

Type	Temporary Refuge
Classification Society	Bureau Veritas
Notation	BV - Offshore Container
Design Reference	DNV 2.7-1: 2017/ ISO 10855-1:2-18
Design Approval	BVCT2180007/O
Container Number	TL 2106006344
Builder	TLS Offshore Containers, Singapore

PERFORMANCE

Endurance	2hrs with 20POB
Blast Rating	0.1 bar
Fire-Proofing	A60 at all boundaries B15 at air-lock
HVAC	Purafil PPU-500 ducted type. External Ventilation and AC shutdown in toxic gas event. Constant Cabin Overpressure 50Pa > ambient Constant Airlock Overpressure 25Pa > ambient
Main Power	From deck generators in lounge mode
Rating	All external electrical equipment required to operate in an emergency Zone 1 rated.
Internal Temperature	+20°C to +25°C
Ambient Temperature	-20°C to +40°C
Documentation	All safe operational procedures in place

PRINCIPLE PARAMETERS

Length	9.14m
Width	2.44m
Height	2.90m
Weight	12,000kg tare and 7,200kg max payload
Internal Floor Area	18.73m^2
Deck Area Occupied	TR container 22.2m^2 Air cylinder box 3.9m^2

CAPACITIES

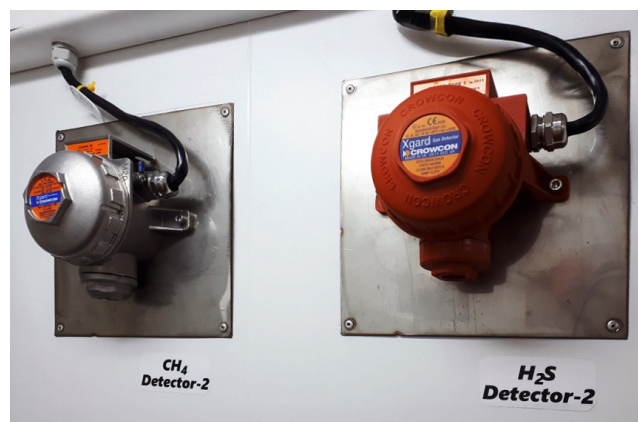|	
Bottled Air	24 of 8m^3 cylinders for >2hr closed air supply system & airlock shower
Emergency Power	Capacity for power supply for >2hrs Battery: 16 of 12V 65Ah deep cycle dry cells UPS: HP Enterprise 6
POB	20 persons at 0.8m^2 per person
Boarding	Airlock capacity to allow access of 20POB within 15min period

EQUIPMENT

PLC	MASK VM-E30-CP-001
On Board Control Panel	Monitoring of all alarms and air-lock
Fire & gas detectors	Fully self-contained with audible and visual alarms in following arrangement:

External:
- 2 x CH_4 detectors
- 2 x H_2S detectors

Inside airlock:
- 1 x CH_4 detector
- 1 x H_2S detector
- 1 x differential pressure sensor

Inside main cabin:
- 1 x CH_4 detector
- 1 x H_2S detector
- 1 x CO_2 monitoring sensor
- 1 x O_2 Monitoring sensor
- 1 x Differential pressure sensor GE-923-Ex
- 1 x Explosion-proof smoke detector AW-EXD101DC24V
- 1 x Explosive-proof heat detector AW-EXD102DC24V

Fire fighting	2 x 5 kg powder extinguishers
Air Scrubber	Hyper Flow CO_2 Scrubber SMP CRTS.
Heater	DL-TB1600A 2,000W wall heater
Air-Conditioning Unit	BKT-5.0 External unit ATEX type Refrigeration rated power 1,612W Maximum input power 2,800W
Compressor	COLTRI Super Silent TPS 345 ET 7.5KW 400V 50 Hz 3 Phase 345 bars max pressure For charging cylinders / SCBA units
Internal Lighting	BAD310-2×20W – 1 unit BAD310-2×20W-J - 2 units with battery backup
External Lighting	Deck lighting with battery backup
Toilet	Chemical cartridge type

COMMUNICATION EQUIPMENT

Radios	3 of Handheld VHF radios ICOM IC-M88 Ex-proof notation 2EXic IIA T6 X
CCTV	BTS—1Q Infrared explosion-proof high-speed ball series ATEX type II 2GD Ex db IIC T6 Gb Ex tb IIIC T85°C IP65 Ta=-25°C~+60°C

GENERAL PLAN