DESIGN VERIFICATION REPORT

DVR-445.3 Equipment & Systems-J-172

Particulars of Design

Manufacturer:	**VIKING Life-Saving Equipment Norway AS**
Location:	**FÆRVIK, NORWAY**
Purchase order no:	
Installation:	
Id No:	**445.3 Equipment & Systems**
Archive no:	
Regulatory body:	

This is to verify that the design of:

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VIKING SES-Basic Offshore Evacuation System

has been reviewed and found to comply with:
[1] LSA Code (IMO Res MSC.48(66)) – Ch. 6.2 – design requirements for Marine Evacuation Systems
[2] IMO Res MSC.81(70) Part 1 – Ch. 12 – prototype test requirements for Marine Evacuation Systems

with the following deviations from design requirements – LSA Code (IMO Res MSC.48(66)):
- Item 6.2.1.3.3: platform area 9.5 m^2 instead of required 10 m^2

The following prototype tests has not been performed - IMO Res MSC.81(70) Part 1:
- Item 12.2.5 (deployment under trim/list): not applicable due to installation on fixed platform
- Item 12.3.1 (load test for inflated passage): not applicable as the slide is not of an inflated type
- Item 12.5.4 (float free demonstration): not applicable, this is a fixed platform
- Item 12.5.5 (direct access in liferafts): not applicable, no direct access to liferaft
- Item 12.6.2 (heavy weather sea trial test): not performed.

The following prototype tests are equivalent to earlier performed tests: IMO Res MSC.81(70) Part 1:
- Item 12.3.2.4 (10 descents on wetted passage): performed on equivalent chute SES-2A
- Item 12.4 (boarding platform): performed on equivalent liferaft Viking 25 DK+ (see tests listed on MEDB00001JE Rev.7**)**

A. Design Specifications.

VIKING SES-Basic Offshore Evacuation System is an evacuation system intended for installation on fixed platforms. The system consists of an evacuation chute and a boarding platform which are packed in a container made of glass reinforced plastic (GRP). The container protects the system against all types of weather and is fitted with a load bearing welded frame for bolting onto a foundation in the deck structure.

The evacuation chute provides evacuation from deck level down to a boarding platform at sea level. The chute has cells with speed restricting slides running at opposing angles in a zigzag effect. Openings in the chute located behind each slide, provide easy entry and exit at any level. The length of the chute is calculated to allow for side motion under strong wind and heavy sea currents. The stabilizing weight (500 kg) is attached to 3 ropes at the base of the chute and hangs below the waterline when deployed. It keeps the escape passage/chute stable and reduces side motion from wind and sea current.

The SES Basic Offshore evacuation system can be deployed by one person. The system is drop released using a special knife or pneumatic cutter. After the strap has been cut the stabilizing weight, boarding platform and chute fall freely down to sea level. The associated liferafts will be deployed separately and be transferred and moored to the boarding platform.

Max. capacity of SES Basic:	70 persons (82.5 kg/person)
Material chute:	DuPont™ Kevlar® & Nomex offering fire resistance to 400 °C
Boarding platform:	VIKING 25-UT-RS (identical to MED approved Viking 25 DK+ liferaft but without canopy – 25 persons capacity)
Max. allowed weight on platform:	1875 kg
Associated drop-down liferafts:	VIKING 12DK+ RS, 16 DK+ RS, 20 DK+ RS, 25 DK+ RS, 35 DK+ RS. (RS = used when the liferafts covered by MEDB00001JE rev.7 are used in combination with the SES Basic offshore evacuation system)

B. Application/Limitation

This general DVR is a gap analysis of the SES Basic Offshore evacuation system verifying the design against SOLAS/ LSA Code and is in any case not substituting a Type Approval.

This general DVR has a validity of two years (expiry date 2026-06-11).

This general DVR is subject for approval by the regulating Authorities.

The arrangement of the SES Basic Offshore evacuation system including the passageway and embarkation areas, are subject to approval by the relevant regulating authorities as this DVR does not cover the requirements to installation of this evacuation system. The following is to be submitted to the relevant regulating Authority for each project, either by the yard, owner or equipment manufacturer:

- Plan showing the arrangement of the evacuation system on board the fixed platform, including the passageway and embarkation areas, to ensure that the flow rate can be maintained throughout the total evacuation of the number of persons for which the evacuation system is certified for.

The installation tests as required by SOLAS - IMO Res. MSC.81(70), Part 2, item 7 and any other further testing in accordance with additional requirements by relevant authorities are not within the scope of this DVR and shall be considered on a case-by-case basis by the relevant regulating Authorities.

The SES Basic Offshore Evacuation system is verified for the max. installation height of 30 m.

The SES Basic Offshore Evacuation system is designed for the max. 70 persons with 82.5 kg/person.

Max. no. of persons in the evacuation chute is 29 persons (based on chute length of 35.25 m).

Gas cylinders used for inflation of the SES Basic Offshore Evacuation system (i.e. boarding platform) and associated liferafts shall be of an approved type.

Components in the gas inflation system for the boarding platform and associated liferafts shall be approved according to ISO 15738:2019 or equivalent standard.

Inflatable components or sections of the evacuation systems are to be serviced at intervals not exceeding 12 months or 30 months in case liferafts/boarding platform are used with type designation S30 (i.e., tested for extended service interval of 30 months). The service to be performed by a person suitably qualified and authorized by the manufacturer.

Any electrical, pressurized and hydraulic components are only assessed as integrated parts of the SES Basic Offshore evacuation system and are not assessed individually. The electrical, pressurized and hydraulic components shall be designed to codes of practice to the satisfaction of the relevant regulating Authorities having regards to their locations and maximum ambient temperatures expected in service.

A full set of operation, maintenance and inspection manuals and associated documents are to be provided onboard the fixed platform for use on all operations involved in the inspections, maintenance and resetting of the evacuation system and associated equipment.

The following design basis apply:

Operational in air temperatures SES Basic:	-20 ºC to +65 ºC
Operational limits Wind speed:	max. 30 m/s
Current speed:	1 m/s
Wave:	no limits

C. Documentation

This general DVR is based on drawings, reports, calculations, type approval certs of components, technical datasheets and other relevant documentation covered by Document No. 980003-VLSE-RD-Q-0002, Rev.3 dated 01 June 2022.

Høvik, 2024-06-11

for DNV

Digitally Signed By: Permoda, Jowita

Location: DNV Gdynia, Poland

Permoda, Jowita
Head of Section
M-SA-GT

Biever, Tessa
Principal Approval Engineer

Verified by: Bjørnarå, Helge

Distribution:
Orig: **VIKING Life-Saving Equipment Norway AS** att.: Sarah Dekke Eik
CC: