EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000024G
Revision No:
5

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Marine evacuation systems

with type designation(s)
Viking Automatic Slide - VAS 1.1 and VAS 1.3

Issued to
Viking Life-Saving Equipment A/S
Esbjerg V, **Denmark**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2021/1158,**
item No. MED/1.27. SOLAS 74 as amended, Reg. III/4, III/15, III/26, III/34 & X/3, LSA Code and 2000 HSC Code 8.

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-03-20**.

Issued at **Høvik** on **2022-03-21**

DNV local station:
Denmark CMC

Approval Engineer:
Tessa Biever

Notified Body
No.: **0575**

for **DNV AS**

Digitally Signed By:
Øyvind Hoff
Location: DNV Høvik, Norway
on behalf of

Sverre Olav Bergli
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2019 dated February 22nd, 2019.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Product description

"Viking Automatic Slide - VAS 1.1 and VAS 1.3"

The Viking Automatic Slide VAS is an automatic deployed Marine Evacuation Systems with single inflatable slide, fitted with 150 DKR+ (open reversible life raft – manufactured by Viking Life-Saving Equipment A/S). The MES system can be delivered with length of slides 2.8 – 4.0 – 5.0 and 6.0 m.

The VAS is available in two variants, differing in container size:

1. VAS 1.1: Height 1475 mm, width 2354 mm, depth 664 mm.
2. VAS 1.3: Height 1475 mm, width 2354 mm, depth 600 mm.

Max. stowage height:	3.65 m
Max. weight of system with HSC pack:	750 kg

Material:
Slide camber materials: Conti-tech NK205/2 and Phoenix Art. 029
Stowage box materials: Aluminium

Application/Limitation

The system is approved for evacuation heights of 1.5 – 3.65 metres (6.0 m slide).

Accepted with 150DKR+ as main drop rafts.

Max evacuation capacity:
153 persons in 17 min. 40 sec. according to the HSC code including cut free of liferafts.

The associated liferafts shall have separate MED Approval and bear the MED Mark of Conformity.

Gas cylinders and components in the pressure gas systems shall be of an approved type.

Components in the gas inflation system should be approved according to ISO 15738:2019.

The following is to be submitted to the Flag Administration in each case, either by the yard, owner or equipment manufacturer:

- Plan showing the MES system fully deployed on the specific vessel in side-view and cross-sectional view under required unfavorable conditions of trim and list as the type approval does not cover the requirements to installation covered by LSA Code Ch. 6.2.2.1.4 and SOLAS Ch. III. Details shall be shown.
- Plan showing the arrangement of the MES on board any vessel, including the passageway and embarkation areas, to ensure that the flow rate as stated above can be maintained throughout the total evacuation of the number of persons for which the MES is certified for.

It shall be verified that the ship on which the MES is installed is equipped with a sufficient number of rescue boats to satisfactory marshal and support the bowsing and tow away, as applicable, of all the associated life rafts within the times allowed for embarkation as per SOLAS Ch.III/Reg. 21.1.3 and 31.1.5.

The on-board arrangements and installation of this MES is not part of the design appraisal or certificate and to be of the satisfaction of the Flag Administration.

Installation tests to be carried out in accordance with IMO Res. MSC.81(70), Part 2, item 7 and to be documented by the manufacturer. This does not preclude any further testing to additional requirements of the Flag Administration or those acting on their behalf.

Inflatable components or sections of the marine evacuation systems are to be service at intervals not exceeding twelve months by a person suitably qualified and authorized by the manufacturer.

Any electrical, pressurized and hydraulic components are only assessed as integrated parts of the VAS but are not assessed individually. The electrical, pressurized and hydraulic components shall be designed to codes of practice to the satisfaction of the Flag Administration having regards to their locations and maximum ambient temperatures expected in service.

A full set of manuals and associated documents are to be provided onboard for use on all operations involved in the inspections, maintenance and resetting of the MES and associated equipment.
shown.

The arrangement of the MES onboard any vessel, including the passageway and embarkation areas, are subject to approval by the administration to ensure that the flow rate as stated above can be maintained throughout the total evacuation of the number of persons for which the MES is certified for.

Type Examination documentation

This certificate replaces MEDB000024G Rev.3 (Rev. 4 does not exist).

Technical documentation	**Date**
Approved technical documentation as listed in DNV approval letters	2002-09-06, 2003-06-19, 2004-06-18, 2005-01-19, 2010-08-13
Drawing Nos. as listed in letter from Viking Life-Saving Equipment A/S, stamped by DNV: Drawing Nos. for general arrangement VAS: - 43001949.001 Rev.0 – Deployed mode for VAS 1.1. for 2.8, 4.0, 5.0 and 6.0 meters - 43001951.000 Rev.0 – Float free sequence for VAS 1.1. - 43001952.001 Rev.0 – Deployed mode for VAS 1.1 for 2,8 m slide - 43001952.002 Rev.0 – Deployed mode for VAS 1.1 for 4,0 m slide - 43001952.003 Rev.0 – Deployed mode for VAS 1.1 for 5,0 m slide - 43001952.004 Rev.0 – Deployed mode for VAS 1.1 for 6,0 m slide - 43002282.000 Rev.0 – Footprints / foundation for VAS 1.1 Drawing Nos. for liferafts 150 DKR+ for VAS 1.1: - 43001950.000 Rev.0 – 150 DKR liferaft for VAS 1.1 part list - 43001950.001/002 Rev.0 – 150 DKR liferaft for VAS 1.1 arrangement drawing Drawing Nos. for slide for VAS 1.1: - 420002747.000 Rev.0 – VAS 2.8m detail drawing + part list - 43001945.000 Rev.0 – VAS 4.0m part list - 43001945.001 Rev.0 – VAS 4.0m detail drawing - 43001948.000 Rev.0 – VAS 5.0m part list - 43001948.001 Rev.0 – VAS 5.0m detail drawing - 43001953.000 Rev.0 – VAS 6.0m part list - 43001953.001 Rev.0 – VAS 6.0m detail drawing Drawing Nos. for storage box: - 16002730 Rev.0 – Box complete - 14001547 – Open box and closed box	2011-11-25/2012-01-16
Test reports	**Date**
Prototype test reports, witnessed by DNV, listed in letter from Viking Life-Saving Equipment A/S. Calculation Report VIKING Project 2046 Report from Heavy Weather Sea Trial Protype test reports as listed in letter HEH040528LD1	2002-06-27 2010-07-14 2003-04-30 2004-05-28
Test reports Nos. witnessed by DNV: - 1472 (Deployment test) - 1431 (Float free test) - 1460 (Drop test 1) - 1471(Drop test 2) - 1461 (Deflection test) - 1473 (Cold inflation test)	 2010-06-03 2010-02-23 2010-05-20 2010-05-26 2010-05-20 2010-06-09
Test reports Nos. witnessed by DNV: - 1669 (Static load test of slide box) - 1678 (Trim and list test) - 1662 (Deployment test) - 1664 (Ice test) - 1980 (Float Free test) - 1981 (Heavy weather sea trail)	 2011-08-05 2011-08-05 2011-08-12 2011-08-17 2011-09-15 2011-10-30
Design changes	**Date**
DC10423 – VAS type 1.3 with reduced depth of 600 mm. Supporting Test reports Nos, witnessed by DNVGL: - 2781 (Verification of packing, VAS 1.3)	2018-06-26 2018-06-25

- 2782 (Deployment test, VAS 1.3)	2018-06-25
DC10437 + DC10439 - use of alternative hardener 'Beyond' + supporting documentation. Test report Nos. witnessed by DNVGL: - 2905, 2914, 2915 (3x over pressure test) - 2880, 2881, 2882, 2883, 2884, 2885 (seam strength tests) - Viking report: Comparison of strength in existing and alternative hardener	2018-12-10/11
DC10446 – use of alternative hardener for MES system liferafts and slides – TM-93 + supporting documentation: - Report – Strength of 'TM-93' - Design review – Use of 'Beyond'	2019-03-19
DC10447 (extension of DC 10437, DC10438, DC10439, DC 10446)– Alternative hardener on patches for all liferaft and slide production – 'Beyond' and 'TM-93'+ supporting documentation: - Report – Strength of 'Beyond' - Report – Strength of 'TM-93' - Report – Use of Alternative hardener on MES patches - Design review – Use of 'Beyond'	2019-03-19

Tests carried out

Test documentation in accordance with recommendation on testing of Lifesaving Appliances, IMO Res. MSC 81(70), part 1 as given by the Technical Documentation specified above.

Marking

The product is to be indelibly marked with name and address of manufacturer, type designation, dimensions and date of manufacture, the MED Mark of Conformity and USCG Approval Number (see first page). The marking shall be according to LSA Code, item 6.2.4 and 6.2.5.