

# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:  
**MEDB00002XK**  
Revision No:  
**4**

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 GL AS under the authority of the Government of Norway.

## This is to certify:

**That the Marine evacuation systems**

with type designation(s)  
**Viking Evacuation Mini Chute 2.1 and 1.16**

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) 2018/773**,  
**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.**

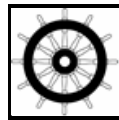
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-06-12**.

Issued at **Høvik** on **2019-05-13**

DNV GL local station:  
**Denmark CMC**

Approval Engineer:  
**Tessa Bieber**



Notified Body  
No.: **0575**

for **DNV GL AS**

**Roald Vårheim**  
**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.

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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Job Id: **344.1-003576-5**  
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## Product description

Viking Evacuation Mini Chute 2.1, VEMC 2.1, is a Marine Evacuation system with single vertical chute evacuation. This Marine Evacuation system has two variants:

1. VEMC 2.1: Single chute evacuation directly into one Viking 150 DKR+ liferaft and with a second Viking DKR+ liferaft contained in the system-container and inflated at the same time as the first liferaft (system container contains two rafts)
2. VEMC 1.16: Single chute evacuation directly into one Viking 150 DKR liferaft. The second raft is a separate drop raft which is inflated simultaneously (system container contains one liferaft)

For both variants, a bousing system with split tubes is mounted on the ship side, equipped with a second steering wire and elastic. The rafts are HSC packed.

<u>Type Designation</u>	<u>Type of Liferaft integrated</u>
VEMC 2.1	2 pcs. 150 DKR+
VEMC 1.16	1 pcs. 150 DKR

The VEMC 2.1 MES and VEMC 1.16 system has been tested according to IMO Res. MSC 81(70) item 12.6.1 and 12.6.2 with VIKING 150DKR+ and 150 DKS dropdown liferafts respectively.

For further details and materials used please see documents and list of Materials used under Type Examination documentation.

## Application/Limitation

Installation height: 4.2-14.5 meter depending on the width of the vessel

Max evacuation capacity:  
VEMC 2.1: 306 persons in 17 min. 40 sec. according to the HSC code (including 34 sec. for cut free of liferafts)  
VEMC 1.16: 320 persons in 17 min. 40 sec. according to the HSC code (including 34 sec. for cut free of liferafts) and 577 persons in 30 min.

Evacuation capacity in general (VEMC 2.1):  $\frac{\text{specified evacuation time} - 119 \text{ seconds}}{2,88 \text{ seconds/person}}$   
(119 seconds includes preparation of system and cut free of last liferaft.)

Evacuation capacity in general (VEMC 1.16):  $\frac{\text{specified evacuation time} - 136 \text{ seconds}}{2,88 \text{ seconds/person}}$   
(136 seconds includes preparation of system and cut free of last liferaft.)

The associated liferafts shall have separate EC Approval and be wheelmarked.

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

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.

It shall be verified that the ship on which the MES is installed is equipped with a sufficient number of rescue boats to satisfactory manhandle and support the bousing 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.

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The chute materials are subject to annual service according to manufacturers procedures in order to verify elastic and strength properties.

Production and installation testing shall be according to IMO Res. MSC. 81(70), part 2.

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 unfavourable conditions of trim and list as the type approval does not cover the requirements to installation covered by LSA Code Ch. 6.2.2.1.5 and SOLAS Ch. III. Details shall be shown.

## Type Examination documentation

This certificate replaces MEDB000002XK Rev.3.

<b>Drawings</b>	<b>Date</b>
Drawings as specified in approval letter	2003-12-02 2010-06-01 2012-06-11
Drawing nos.: 42002535, funnels long with funnel cover, TL – wear sheet 42002534, funnels long with funnel cover, TL – 2 pockets and wearsheet 42002385, funnels short with funnel cover, TL – 2 pockets and wearsheet 42001469, – funnels short with funnel cover, TL – wearsheet 42002735, slip hook with strap 42003223, tear brake	2010-11-24 2010-11-24 2010-07-12 2015-11-02 2011-08-16 2012-10-10
<b>Test reports</b>	<b>Date</b>
Prototype test report witnessed by DNV: - testreport 1279 - testreport 1431 - testreport 1434 - testreport 1445 - testreport 1688 - testreport 1732 - testreport 1730	2009/09/11 2010-02-23 2010-03-05 2010-04-09 2011-11-22 2011-12-12 2012-01-11
<b>Design Changes (DC) + supporting documentation</b>	<b>Date</b>
Design Change sheet 10258	2009-09-29
Design Change overview until June 2017 and supporting test reports (DC 10286/10294/10325/10329/10353/10356/10357/10361/10393/10394)	2017-06-01
Viking Design Change sheet 10416 (180° reversed inflation of 150 DKR – raft inflates outward away from the chute)	2018-01-18
Test report no. 2679 supporting DC 10416 (180° reversed inflation – 150 DKR B-pack) witnessed by DNVGL	2017-12-22
Partslist + Drawing no. 43002537.000~002 as listed on DC 10416 (Viking 150 DKR+ VEMC 1.16)	2018-01-17
DC 10435 – traffic light upgrade to generation 3.1+ supporting documents: DNV GL Advisory Maritime – report no. 1-10119722, rev.2, test & root cause discovery review	2018-11-06 2018-10-17
Statement USCG , succesfull MES deployment with traffic light system generation 3.1	2018-11-01
Viking document: A0433 Traffic light Mechanical issues, 3.1 + referenced testing	2018-10-12
Viking document: A0432 Traffic light Generation 3 + referenced testing	2018-07-13
DC10437 + DC10439 - use of alternative hardener 'Beyond' + supporting	2018-12-10/11

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documentation. Test report Nos.: 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	
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
<b>Other</b>	
Assembly- and Service manual, Viking Evacuation MiniChute.	VEMC 2.1/ 1.16 : February 2017
Viking technical documentation for Mini Chute VEMC 1.1/1.2 volume A and B as detailed in Doc. No: VEMC Volume A index, edition 1	December 2002
List of Materials, Rev.0	2017-07-06

## Tests carried out

Documentation of tests in accordance with Recommendation on Testing of Lifesaving Appliances, IMO Resolution MSC.81(70), part 1, included in volume A of 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.