

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 Expansion foam for fixed fire extinguishing systems for chemical tankers

with type designation(s)
SKUM ARC 3x3 EG

Issued to

SABO FOAM S.r.l.
Cologno Al Serio, BG, Italy

is found to comply with the requirements in the following Regulations/Standards:

Regulation **(EU) 2017/306**,
item No. MED/3.59. SOLAS 74 as amended IMO Res. MSC.4(48)-(IBC Code) 11, Reg. II-2/1,
IMO MSC/Circ.553 and IMO MSC.1/Circ.1312 incl. Corr.1

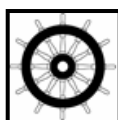
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2023-05-31**.

Issued at **Høvik** on **2018-06-01**

DNV GL local station:
Milan

Approval Engineer:
Nanna Martine Jacobsen



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



Product description

"SKUM ARC 3x3 EG"

is an aqueous film-forming alcohol resistant foam concentrate (AFFF-AR).

Application/Limitation

Approved for use as a low expansion, multi-purpose foam concentrate (Type A) for fixed and mobile fire-fighting systems.

Description	SKUM ARC 3x3 EG
Nominal mixing ratio with seawater:	3% (hydrocarbon fires and alcohol fires)
Kinematic viscosity (0 °C):	N/A, non-Newtonian foam concentrate
pH value (20 °C):	7.3
Expansion ratio:	7.9
Drainage time (25%):	11:35 (min:s)
Volumetric mass/density (20 °C):	1.031 g/ml
Temperature, storage and usage:	-13 °C to +60 °C
Onboard tank/ storage material:	Glass composite, polyethylene, stainless steel or carbon steel. For details see Technical bulletin no. T-2016111.
Foam use, filling, maintenance, storage, transport, etc. are to be in accordance with the manufacturer's instructions.	

The validity of the certificate is dependent on the compliance of each manufactured product with the prototype which underwent the type approval tests and such compliance shall be stated by the manufacturer.

The storage facilities and piping arrangement onboard the vessel are to be designed and constructed with regard to seawater exposure (where applicable), and the minimum allowed temperature for the foam liquid.

Non-Newtonian, Pseudo-plastic foam concentrate. This concentrate can require special proportioning equipment.

This approval does not address the foam generating equipment, only the foam concentrate.

The foam concentrate does not contain PFOS.

Each product is to be supplied with its manual for application, use, storage, transport and maintenance.

Periodical controls of foam concentrates stored on board (to be done in accordance with IMO MSC.1/Circ. 1312):

- The foam liquid is to be delivered with a declaration of conformity and a declaration of the main characteristics (sedimentation, pH-value, expansion ratio, drainage time and volumetric mass). The declaration will be the basis for the annual condition test (each year after 3 years).

Type Examination documentation

Declaration of conformity no. KB 48/18 dated 08 February 2018 from MPA Dresden GmbH, Freiberg, Germany.

Test Report No. 20171029/Ty 196 dated 08 February 2018 from MPA Dresden GmbH, Freiberg, Germany.

Tests carried out

Tested according to IMO MSC.1/Circ. 1312 and IMO MSC.1/Circ.1312/Corr.1

Marking of product



Job Id: **344.1-008109-1**
Certificate No: **MEDB0000414**

The packing is to be marked with MED Mark of Conformity (see page 1) and according to IMO MSC.1/Circ. 1312, 3.13, including among other things name and address of manufacturer, type designation, storage/use temperature, production date, expiry date and SHE information.