TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00005F2
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the Buoyant smoke signals (pyrotechnics)

with type designation(s)
IKAROS Buoyant Smoke Signal, Orange

Issued to
Hansson PyroTech AB
Lindesberg, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **MSN 1874 Amendment 6,**
item No. UK/1.10. SOLAS 74 as amended, Regulation III/4, III/34 & X/3 and LSA Code

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

This Certificate is valid until **2024-07-03**.

Issued at **London** on **2022-09-30**

DNV local station:
Sweden CMC

Approval Engineer:
Helge Bjørnarå

Approved Body No.: **0097**

for **DNV UK Ltd.**

Digitally Signed By: Mydlak-Röder, Christine

Christine Mydlak-Röder
MER Service Responsible

Maritime & Coastguard Agency
UK Approved Body Authorised by the MCA

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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. 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. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

"IKAROS Buoyant Smoke Signal, Orange",
buoyant smoke signals producing orange smoke for at least 3 minutes.

Design weight: 540 g

Application/Limitation

Approved for use as buoyant smoke signals (pyrotechnics).

Acceptable lifetime: 4 years

Liferaft drop test has to be performed before installation on liferafts.

The design assessment is based on IMO Res. MSC.48(66) as amended by IMO Res. MSC.207(81) and IMO Res. MSC.218(82).

A statistically adequate sample of the production shall be tested in accordance with IMO Res. MSC.81(70), Part 2, Ch.4.

Type Examination documentation

The following documentation is basis for the DNV approval:

Documents	Date
Drawings as listed in "Document structure", No. DS 342130 Rev. 2	2019-04-05
Prototype test reports witnessed by Bureau Veritas	2015-03-30~04-02 2015-08-17 2013-09-30~10-02 2012-05-29~06-01 2011-08-16~18
Temperature cycling test and Salt spray test report No. SBTC 15-0082R by Bofors Test Center, Sweden	2015-03-30
Wave test report No. SBTC 15-0070 by Bofors Test Center, Sweden	2015-04-13
Laboratory measurements report No. TR 15-007 by Nammo LIAB, Sweden	2015-04-08

Tests carried out

Tests are documented in accordance with recommendation on testing of Lifesaving Appliances, IMO Res. MSC.81(70), Part 1, including IMO Res. MSC.200(80), IMO Res. MSC.226(82) and IMO Res. MSC.323(89).

Marking of product

The product is to be marked with name and address of manufacturer, type designation, date of manufacture, date of expiry, operational restrictions and MER Mark of Conformity (see first page).

The product should be provided with brief instructions or diagrams clearly illustrating the use printed on the casing.