



# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TALB0000031**  
Revision No:  
**1**

## This is to certify:

that the **Buoyant smoke signals (pyrotechnics)**

with type designation(s)  
**IKAROS Buoyant Smoke 3 Minute**

issued to

**Hansson PyroTech AB**  
**Lindesberg, Örebro Län, Sweden**

is found to comply with

**SOLAS 74 as amended, LSA Code as amended. IMO Resolution MSC.81(70) as amended.**  
**TP14612E Ed.4 (2019-02) Procedures for approval of life-saving appliances and fire safety systems,**  
**equipment and products**

## Application:

**Approved for use as Buoyant smoke signals (pyrotechnics).**

**This certificate is recognized by Transport Canada.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

Issued at **Høvik** on **2024-05-16**

for **DNV**

This Certificate is valid until **2029-05-15**.

DNV local unit: **Sweden CMC**

Approval Engineer: **Tessa Bieber**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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 3 Minute”

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: Expiration date not to exceed 48 months after month of manufacture.

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 Approval documentation

Certification in accordance with DNV Class programme DNV-CP-0338, September 2021.

Documents	Date
Drawings as listed in “Document structure”, No. DS 342130 Rev. 3	2024-02-14
Prototype test reports witnessed by Bureau Veritas	2015-03-30~04-02 and 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 permanently marked with name and address of manufacturer, type designation, brief instructions or diagrams clearly illustrating the use of the product, month and year of manufacturer, lot number and expiry date. All instructions and markings shall be in both English and French (Transport Canada requirement).

### Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled “Procedures for Approval of Life Saving Appliances, Fire Safety Systems, Equipment and Products (TP 14612)”, DNV confirms that the product listed in this certificate is in accordance with Transport Canada requirements.

### Periodical assessment

DNV’s surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with the procedure described in Class Programme DNV-CP-0338, Section 4.