

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB0000815

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 Devices to prevent the passage of flame into the cargo tanks in tankers: flame arresters

with type designation(s)
Gas Free Cover

Issued to

Prosave Co.,Ltd.
Gimhae-si, Gyeongsangnam-do, Korea, Republic of

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

Regulation (EU) 2023/1667,
item No. MED/3.12b. SOLAS 74 as amended, Regulation II-2/4 & II-2/16, IMO Res. MSC.98 (73)-(FSS Code) 15,
IMO MSC/Circ.677

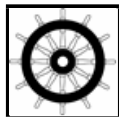
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-10-26**.

Issued at **Høvik** on **2023-10-27**

DNV local unit:
AK Admin Support

Approval Engineer:
Andreas Hansen



Notified Body
No.: **0575**

for **DNV AS**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

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

End-of-line deflagration flame arresters with flanged connections according to JIS 5K, made from materials listed below:

Component	Material			
	Spec.1	Spec.2	Spec.3	Spec.4
Body	A261-WCB	A351-CF8	A351-CF8M	A351-CF3M
Cover	A216-WCB	A351-CF8	A351-CF8M	A351-CF3M
Snap ring	SUS304	SUS304	SUS316	SUS316
Gas free screen	SUS316	SUS316	SUS316	SUS316
Stop ring	A240-304	A276-304	SUS316	SUS316

Design confirming to:

1. IMO MSC/Circ. 677 (as amended by IMO MSC/Circ.1009 & IMO MSC/Circ.1324) – Revised standards for design, testing and locating of devices to prevent the passage of flame into cargo tanks
2. ISO 16852:2016 – Flame arresters – Performance requirements, test methods and limits for use.

Application/Limitation

The flame screen units covered by this certificate are approved as end-of-line device to be used as vents on tanks for cargo on board ships for the carriage of products having an MESG as below:

Model	GFC-03	GFC-04	GFC-05	GFC-06	GFC-08	GFC-10	GFC-12
Size ID (mm)	80	100	125	150	200	250	300
Explosion group	IIB3	IIB3	IIB3	IIB3	IIA	IIA	IIA
MESG	≥0.65	≥0.65	≥0.65	≥0.65	>0.90	>0.90	>0.90

Products covered by this certificate shall only be used on tankers protected by inert gas system (Reference is made to IMO MSC/Circ.677 [1.2.2])

A copy of the instruction manual shall be kept on board. It shall at least contain the following information:

- Installation instructions
- Operating instructions
- Maintenance requirements including cleaning
- A copy of the laboratory report
- Flow test data, incl. flow rates under both positive and negative pressures, operating pressures, operating sensitivity, flow resistance and velocity.

Type Examination documentation

Tests carried out

Flame transmission, corrosion, and flow conditions.

Marking of product

For traceability to this type approval each product is to be marked with:

- Manufacturer's name or trade mark
- Type designation
- Additional marking acc. IMO MSC/Circ.677 Sec. 4.1