

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00006V3

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)
Flame Screen Unit FS

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) 2021/1158**,

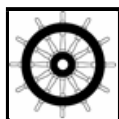
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-03-27**.

Issued at **Høvik** on **2022-03-28**

DNV local station:
Gimhae Station

Approval Engineer:
Maheshraja Venkatesan



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

Cylindrical flame screens (end-of-line deflagration flame arrester) with type designation FS mounted on a flanged pipe (JIS 5K flange) comprising of following sizes:

Model	Pipe ID (mm)	Flange size (as per JIS B2220 5K)	Mesh size
FS-6	154	6"	#30 X Ø0.3 MESH
FS-16	387	16"	
FS-18	432	18"	
FS-20	482	20"	
FS-24	581	24"	

Material of construction:

Component	Material of construction
Housing	SS400
Base, Cover and Flame screen plates	SS400
Pipe	ASTM A106 Gr. B
Base flange	SS400
Flame screen	SUS316
Support bolting	ASTM A276 type 316

Devices covered by this certificate are designed and tested according to:

- IMO MSC/Circ. 677 (as amended by MSC.1/Circ. 1324) Revised Standards for The Design, Testing and Locating of Devices to Prevent the Passage of Flame into Cargo Tanks in Tankers
- 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 and may be used as vents on tanks for cargo on board ships for the carriage of products having an MESG of 0.9 mm and greater (apparatus Gas Group IIA).

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]).

Sizing and location to be in accordance with the latest revision of MSC/Circ. 731.

A copy of the instruction manual shall be kept on board, and is to include:

- 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

Corrosion, Flow characteristics, Flash-Back (Flame transmission) tests

Marking of product

As a minimum, the final product to be marked with at least the following particulars:

- Manufacturer's name or trademark
- Manufacturer's address
- Specification or hose name
- Hose size (inside diameter in inches)
- Data code (quarterly and daily production code)
- Mark of conformity according to Article 10 of the Council Directive 2014/90/EU



Job Id: **344.1-010751-1**
Certificate No: **MEDB00006V3**

Mark of Conformity may only be affixed to the product when the corresponding certification related to production-control phase module (D, E, or F) is valid.