

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB00006X6
Revision no.:
2

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, Veritasveien 1, 1363 Høvik, Norway under the authority of the Government of Norway.

This is to certify:

that the **Inert gas systems: - single components: - inert gas blowers**

with type designation(s)

Inert Gas Blowers, Types BK 10, BK 12.5, BK 16, BK 20, BK 21, BK 25, BK 28, BK 31.5, BK31.5-2S, BK35.5, BK37.5, BK 40, BK 45 and BK50

issued to

Flebu International AS
Gamle Borgenvei 3 1383 Asker Norway

is found to comply with the Implementing Regulation (EU) 2026/1434 for
Item no. **MED/3.42c (Row 1 of 1)**

according to the following requirements:

SOLAS 74 Reg. II-2/4, IMO Res. A.567(14), IMO Res. MSC.98(73)-(FSS Code) 15, IMO MSC/Circ.353, IMO MSC/Circ.485, IMO MSC/Circ.731, IMO MSC/Circ.1120

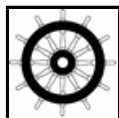
Further details of the equipment and conditions for certification are given overleaf.

Date of issue: **2026-09-17**

Expiry date: **2031-09-16**

DNV local unit:
Oslo Maritime and CAP

Approval Engineer:
Andreas Hansen



Notified Body
no.: **0575**



for **DNV AS**

Digitally Signed By:

Christine Mydlak-Röder

Christine Mydlak-Röder
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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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 USD 300 000.

Product description

Centrifugal inert gas fans.

Arrangement 1: Impeller is mounted directly on to the motor shaft

Arrangement 5: Impeller is mounted to a separate shaft with bearings and coupling

Arrangement -2S: Bearings are installed on both side of the fan

Capacity range: 1000 to 25.000 m³/h

Pressure range: 1200 to 3000 mmWG

Application/Limitation

Fan arrangement 1 and 5 may both be used in combination with -2S. Either configuration shall meet the below requirements to minimize the risk of spark generation when used in hazardous spaces.:

The following combinations of materials of materials and clearances used in way of the impeller and duct are considered non-sparking:

- impellers and/or housing of non-metallic material, due regard being paid to the elimination of static electricity
- impellers and housings of non-ferrous metals
- impellers of aluminium alloys or magnesium alloys and a ferrous (including austenitic stainless steel) housing on which a ring of suitable thickness of non-ferrous materials is fitted in way of the impeller, due regard being paid to static electricity, reliability of the arrangement for securing of the ring to the housing and corrosion between ring and housing
- impellers and housing of austenitic stainless steel
- any combination of ferrous (including austenitic stainless steel) impellers and housing with not less than 13 mm tip design clearance.

The radial air gap between the impeller and the casing shall not be less than 0.1 of the diameter of the impeller shaft in way of the bearing, but not less than 2 mm.

Any combination of an aluminium or magnesium alloy fixed or rotating component, and a ferrous fixed or rotating component, regardless of tip clearance, is considered a spark hazard and shall not be used in these places.

Type Examination documentation

Please see Appendix: Type Examination Documentation

Tests carried out

Performance test report SP05275 (32439-AA) for single fan BK31,5-2S, including overspeed test, dated 2021-06-28

Function test report

Marking of product

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

- Manufacturer's name or trade mark
- Type designation
- Serial No.
- Mark of conformity according to Article 10 of the Council Directive 2014/90/EU

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.

APPENDIX

Type Examination documentation

Certificate no.:
MEDB00006X6
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Document No.	Rev.	Title
32009-413	A	Centr. Fan for high pressure BK 50-1, arrangement Gas for fan wheels up to ø1060
32011188	A	CENTR. FAN FOR HIGH PRESSURE BK 2,45/35,5-5, ARRANGEMENT GAS For fan whels up to ø1060
32007041	A	Centrifugal-Fans, 1900mmwg For impellers up to ø900. Arrangement
32007-319	A	CENTR. FAN FOR HIGH PRESSURE BK 12,5-1, ARRANGEMENT AIR For fan wheels up to ø1061-1270
12004-032	E	H-1554, TOP-UP-UNIT
32004-043	E	H-1554-1, IGS FAN BK 25-2S, ARRANGEMENT GAS For fan wheels up to ø1060
1K9106-96	M	BK 25/31.5/40/50-2S AIR/GAS Fan housing & support, details For wheels up to ø1060
1K9308-208	L	BK 25/31.5/40/50-2S AIR/GAS Fan housing & support For wheels up to ø1060
12004-033	A	H-1554, TOP-UP-UNIT FOR IGS, Fan wheel BK10-2S
32010-153	A	CENTR. FAN FOR HIGH PRESSURE BK 21-1, AIR, Right
22004-005	B	Shaft Seal ø40mm
32010-335	D	AALBORG IGS, BK 31,5-1 (BK 3,06/28-1), Gas 9400m3/h , 1900mmwg
32439-	2	Run test report _FAT 11.06.2021.
32439-	1	Run test report _FAT 11.06.2021.
12025-005	B	IG Fan Family - Allowable variations for Arr.1 / Arr.5 / Arr.-2S