

ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE



Rewritten

Certificate No. 22IT0399-EAP-1
(Ex.Cert.No. 14JB00048EAP)

Issued under the provisions of the Protocol of 1997 to the
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973,
as modified by the Protocol of 1978 relating thereto (hereinafter referred to as 'the Convention')
under the authority of the Government of

the Republic of Panama
by **NIPPON KAIJI KYOKAI**

Engine Manufacturer	Model number	Serial number	Test Cycle(s)	Rated Power (kW) and Speed (RPM)	Engine Approval number
JSC BMZ Bryansk Engineering Works	DB72 (5S50MC-C Mk7)	0703	E3	7,900 kW 127 RPM	14JB00048

THIS IS TO CERTIFY:

1. That the above-mentioned marine diesel engine has been surveyed for pre-certification in accordance with the requirements of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines made mandatory by Annex VI of the Convention; and
2. That the pre-certification survey shows that the engine, its components, adjustable features, and Technical File, prior to the engine's installation and/or services on board a ship, fully comply with the applicable regulation 13 of Annex VI of the Convention.

This Certificate is valid for the life of engine subject to surveys in accordance with regulation 5 of Annex VI of the Convention, installed in ships under the authority of this Government.

Issued at Istanbul on 21 May 2022

The undersigned declares that he is duly authorized by the said Government to issue this certificate.



Note: This certificate was rewritten because of change of the Ship's flag.

E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI

**SUPPLEMENT TO
ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(EIAPP CERTIFICATE)
RECORD OF CONSTRUCTION, TECHNICAL FILE AND MEANS OF VERIFICATION**

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred as “the Convention”) and of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (hereinafter referred to as the “NOx Technical Code”).

Notes:

1. This Record and its attachments shall be permanently attached to the EIAPP Certificate. The EIAPP Certificate shall accompany the engine throughout its life and shall be available on board the ship at all times.
2. The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and the requirements for an engine's Technical File and means of verifications refer to mandatory requirements from the NOx Technical Code.

1. Particulars of the engine

1.1	Name and address of manufacturer	JSC BMZ Bryansk Engineering Works 26 Ulyanova Street, 241015 Bryansk, Russia
1.2	Place of engine build	as above
1.3	Date of engine build	December 2007
1.4	Place of pre-certification survey	Bryansk, Russia
1.5	Date of pre-certification survey	20 February 2008
1.6	Engine type and model number	DB72 (5S50MC-C Mk7)
1.7	Engine serial number	0703
1.8	If applicable, the engine is a parent engine <input type="checkbox"/> or a member engine <input checked="" type="checkbox"/> of the following engine family <input type="checkbox"/> or engine group <input checked="" type="checkbox"/> Gr-06-DB72 (5S50MC-C Mk7)	
1.9	Test cycle(s) (see chapter 3 of the NOx Technical Code)	E3
1.10	Rated Power (kW) and Speed (RPM)	7,900 kW 127 RPM
1.11	Engine approval number	14JB00048
1.12	Specification(s) of test fuel	DMA(ISO8217)
1.13	NOx reducing device designated approval number (if installed)	Nil
1.14	Applicable NOx Emission Limit (g/kWh) (regulation 13 of Annex VI)	17.00 g/kWh
1.15	Engine's actual NOx Emission Value (g/kWh)	14.37 g/kWh



2. Particulars of the Technical File

- 2.1 Technical File identification/approval number Gr-06-DB72 (5S50MC-C Mk7) / 14JB00048TF
- 2.2 Technical File approval date 27 March 2008
- 2.3 The Technical File, as required by chapter 2 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

3. Specification for the On-board NOx Verification Procedures for the Engine Parameter Survey

- 3.1 On-board NOx verification procedures identification/approved number Gr-06-DB72 (5S50MC-C Mk7) / 14JB00048TF
- 3.2 On-board NOx verification procedures approval date 27 March 2008
- 3.3 The specifications for the on-board NOx verification procedures, as required by chapter 6 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at Istanbul on 21 May 2022



E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI



ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE



Rewritten

Certificate No. 22IT0399-EAP-2
(Ex.Cert.No. 14JB00049EAP)

Issued under the provisions of the Protocol of 1997 to the
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973,
as modified by the Protocol of 1978 relating thereto (hereinafter referred to as 'the Convention')
under the authority of the Government of

the Republic of Panama
by **NIPPON KAIJI KYOKAI**

Engine Manufacturer	Model number	Serial number	Test Cycle(s)	Rated Power (kW) and Speed (RPM)	Engine Approval number
Hyundai Heavy Industries Co., Ltd.	5H17/28	BA2669-1	D2	575 kW 900 RPM	14JB00049

THIS IS TO CERTIFY:

1. That the above-mentioned marine diesel engine has been surveyed for pre-certification in accordance with the requirements of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines made mandatory by Annex VI of the Convention; and
2. That the pre-certification survey shows that the engine, its components, adjustable features, and Technical File, prior to the engine's installation and/or services on board a ship, fully comply with the applicable regulation 13 of Annex VI of the Convention.

This Certificate is valid for the life of engine subject to surveys in accordance with regulation 5 of Annex VI of the Convention, installed in ships under the authority of this Government.

Issued at Istanbul on 21 May 2022

The undersigned declares that he is duly authorized by the said Government to issue this certificate.



Note: This certificate was rewritten because of change of the Ship's flag.

E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI

**SUPPLEMENT TO
ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(EIAPP CERTIFICATE)
RECORD OF CONSTRUCTION, TECHNICAL FILE AND MEANS OF VERIFICATION**

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred as “the Convention”) and of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (hereinafter referred to as the “NOx Technical Code”).

Notes:

1. This Record and its attachments shall be permanently attached to the EIAPP Certificate. The EIAPP Certificate shall accompany the engine throughout its life and shall be available on board the ship at all times.
2. The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and the requirements for an engine's Technical File and means of verifications refer to mandatory requirements from the NOx Technical Code.

1. Particulars of the engine

- | | | | |
|------|--|--|---------|
| 1.1 | Name and address of manufacturer | Hyundai Heavy Industries Co., Ltd.
1, Cheonha-Dong, Dong-Gu, Ulsan, Korea | |
| 1.2 | Place of engine build | as above | |
| 1.3 | Date of engine build | July 2008 | |
| 1.4 | Place of pre-certification survey | Ulsan, Korea | |
| 1.5 | Date of pre-certification survey | 11 July 2008 | |
| 1.6 | Engine type and model number | 5H17/28 | |
| 1.7 | Engine serial number | BA2669-1 | |
| 1.8 | If applicable, the engine is a parent engine <input type="checkbox"/> or a member engine <input checked="" type="checkbox"/> of the following engine family <input type="checkbox"/> or engine group <input checked="" type="checkbox"/> | HYUNDAI-HiMSEN 5H17/28-2008-08 | |
| 1.9 | Test cycle(s) (see chapter 3 of the NOx Technical Code) | D2 | |
| 1.10 | Rated Power (kW) and Speed (RPM) | 575 kW | 900 RPM |
| 1.11 | Engine approval number | 14JB00049 | |
| 1.12 | Specification(s) of test fuel | DMC(ISO8217) | |
| 1.13 | NOx reducing device designated approval number (if installed) | Nil | |
| 1.14 | Applicable NOx Emission Limit (g/kWh) (regulation 13 of Annex VI) | 11.54 g/kWh | |
| 1.15 | Engine's actual NOx Emission Value (g/kWh) | 11.10 g/kWh | |



2. Particulars of the Technical File

- 2.1 Technical File identification/approval number HiMSEN 5H17/28-2008-08-B2669-1 / 14JB00049TF
- 2.2 Technical File approval date 6 October 2008
- 2.3 The Technical File, as required by chapter 2 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

3. Specification for the On-board NOx Verification Procedures for the Engine Parameter Survey

- 3.1 On-board NOx verification procedures identification/approved number HiMSEN 5H17/28-2008-08-BA2669-1 / 14JB00049TF
- 3.2 On-board NOx verification procedures approval date 6 October 2008
- 3.3 The specifications for the on-board NOx verification procedures, as required by chapter 6 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at Istanbul on 21 May 2022



E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI



ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE



Rewritten

Certificate No. 22IT0399-EAP-3
(Ex.Cert.No. 14JB00050EAP)

Issued under the provisions of the Protocol of 1997 to the
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973,
as modified by the Protocol of 1978 relating thereto (hereinafter referred to as 'the Convention')
under the authority of the Government of

the Republic of Panama
by **NIPPON KAIJI KYOKAI**

Engine Manufacturer	Model number	Serial number	Test Cycle(s)	Rated Power (kW) and Speed (RPM)	Engine Approval number
Hyundai Heavy Industries Co., Ltd.	5H17/28	BA2669-2	D2	575 kW 900 RPM	14JB00050

THIS IS TO CERTIFY:

1. That the above-mentioned marine diesel engine has been surveyed for pre-certification in accordance with the requirements of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines made mandatory by Annex VI of the Convention; and
2. That the pre-certification survey shows that the engine, its components, adjustable features, and Technical File, prior to the engine's installation and/or services on board a ship, fully comply with the applicable regulation 13 of Annex VI of the Convention.

This Certificate is valid for the life of engine subject to surveys in accordance with regulation 5 of Annex VI of the Convention, installed in ships under the authority of this Government.

Issued at Istanbul on 21 May 2022

The undersigned declares that he is duly authorized by the said Government to issue this certificate.



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E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI

**SUPPLEMENT TO
ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(EIAPP CERTIFICATE)
RECORD OF CONSTRUCTION, TECHNICAL FILE AND MEANS OF VERIFICATION**

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred as “the Convention”) and of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (hereinafter referred to as the “NOx Technical Code”).

Notes:

1. This Record and its attachments shall be permanently attached to the EIAPP Certificate. The EIAPP Certificate shall accompany the engine throughout its life and shall be available on board the ship at all times.
2. The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and the requirements for an engine's Technical File and means of verifications refer to mandatory requirements from the NOx Technical Code.

1. Particulars of the engine

1.1	Name and address of manufacturer	Hyundai Heavy Industries Co., Ltd. 1, Cheonha-Dong, Dong-Gu, Ulsan, Korea	
1.2	Place of engine build	as above	
1.3	Date of engine build	July 2008	
1.4	Place of pre-certification survey	Ulsan, Korea	
1.5	Date of pre-certification survey	11 July 2008	
1.6	Engine type and model number	5H17/28	
1.7	Engine serial number	BA2669-2	
1.8	If applicable, the engine is a parent engine <input type="checkbox"/> or a member engine <input checked="" type="checkbox"/> of the following engine family <input type="checkbox"/> or engine group <input checked="" type="checkbox"/>	HYUNDAI-HiMSEN 5H17/28-2008-08	
1.9	Test cycle(s) (see chapter 3 of the NOx Technical Code)	D2	
1.10	Rated Power (kW) and Speed (RPM)	575 kW	900 RPM
1.11	Engine approval number	14JB00050	
1.12	Specification(s) of test fuel	DMC(ISO8217)	
1.13	NOx reducing device designated approval number (if installed)	Nil	
1.14	Applicable NOx Emission Limit (g/kWh) (regulation 13 of Annex VI)	11.54 g/kWh	
1.15	Engine's actual NOx Emission Value (g/kWh)	11.10 g/kWh	



2. Particulars of the Technical File

- 2.1 Technical File identification/approval number HiMSEN 5H17/28-2008-08-BA2669-2 / 14JB00050TF
- 2.2 Technical File approval date 6 October 2008
- 2.3 The Technical File, as required by chapter 2 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

3. Specification for the On-board NOx Verification Procedures for the Engine Parameter Survey

- 3.1 On-board NOx verification procedures identification/approved number HiMSEN 5H17/28-2008-08-BA2669-2 / 14JB00050TF
- 3.2 On-board NOx verification procedures approval date 6 October 2008
- 3.3 The specifications for the on-board NOx verification procedures, as required by chapter 6 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at Istanbul on 21 May 2022



E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI



ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE



Rewritten

 Certificate No. 22IT0399-EAP-4
 (Ex.Cert.No. 14JB00051EAP)

Issued under the provisions of the Protocol of 1997 to the
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973,
 as modified by the Protocol of 1978 relating thereto (hereinafter referred to as 'the Convention')
 under the authority of the Government of

the Republic of Panama
 by **NIPPON KAIJI KYOKAI**

Engine Manufacturer	Model number	Serial number	Test Cycle(s)	Rated Power (kW) and Speed (RPM)	Engine Approval number
Hyundai Heavy Industries Co., Ltd.	5H17/28	BA2669-3	D2	575 kW 900 RPM	14JB00051

THIS IS TO CERTIFY:

1. That the above-mentioned marine diesel engine has been surveyed for pre-certification in accordance with the requirements of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines made mandatory by Annex VI of the Convention; and
2. That the pre-certification survey shows that the engine, its components, adjustable features, and Technical File, prior to the engine's installation and/or services on board a ship, fully comply with the applicable regulation 13 of Annex VI of the Convention.

This Certificate is valid for the life of engine subject to surveys in accordance with regulation 5 of Annex VI of the Convention, installed in ships under the authority of this Government.

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E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI

**SUPPLEMENT TO
ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE
(EIAPP CERTIFICATE)
RECORD OF CONSTRUCTION, TECHNICAL FILE AND MEANS OF VERIFICATION**

In respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred as “the Convention”) and of the Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines (hereinafter referred to as the “NOx Technical Code”).

Notes:

1. This Record and its attachments shall be permanently attached to the EIAPP Certificate. The EIAPP Certificate shall accompany the engine throughout its life and shall be available on board the ship at all times.
2. The Record shall be at least in English, French or Spanish. If an official language of the issuing country is also used, this shall prevail in case of a dispute or discrepancy.
3. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and the requirements for an engine's Technical File and means of verifications refer to mandatory requirements from the NOx Technical Code.

1. Particulars of the engine

- | | | | |
|------|--|--|---------|
| 1.1 | Name and address of manufacturer | Hyundai Heavy Industries Co., Ltd.
1, Cheonha-Dong, Dong-Gu, Ulsan, Korea | |
| 1.2 | Place of engine build | as above | |
| 1.3 | Date of engine build | July 2008 | |
| 1.4 | Place of pre-certification survey | Ulsan, Korea | |
| 1.5 | Date of pre-certification survey | 11 July 2008 | |
| 1.6 | Engine type and model number | 5H17/28 | |
| 1.7 | Engine serial number | BA2669-3 | |
| 1.8 | If applicable, the engine is a parent engine <input checked="" type="checkbox"/> or a member engine <input type="checkbox"/> of the following engine family <input type="checkbox"/> or engine group <input checked="" type="checkbox"/> | HYUNDAI-HiMSEN 5H17/28-2008-08 | |
| 1.9 | Test cycle(s) (see chapter 3 of the NOx Technical Code) | D2 | |
| 1.10 | Rated Power (kW) and Speed (RPM) | 575 kW | 900 RPM |
| 1.11 | Engine approval number | 14JB00051 | |
| 1.12 | Specification(s) of test fuel | DMC(ISO8217) | |
| 1.13 | NOx reducing device designated approval number (if installed) | Nil | |
| 1.14 | Applicable NOx Emission Limit (g/kWh) (regulation 13 of Annex VI) | 11.54 g/kWh | |
| 1.15 | Engine's actual NOx Emission Value (g/kWh) | 11.10 g/kWh | |



2. Particulars of the Technical File

- 2.1 Technical File identification/approval number HiMSEN 5H17/28-2008-08-BA2669-3 / 14JB00051TF
- 2.2 Technical File approval date 6 October 2008
- 2.3 The Technical File, as required by chapter 2 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

3. Specification for the On-board NOx Verification Procedures for the Engine Parameter Survey

- 3.1 On-board NOx verification procedures identification/approved number HiMSEN 5H17/28-2008-08-BA2669-3 / 14JB00051TF
- 3.2 On-board NOx verification procedures approval date 6 October 2008
- 3.3 The specifications for the on-board NOx verification procedures, as required by chapter 6 of the NOx Technical Code, is an essential part of the EIAPP Certificate and must always accompany an engine throughout its life and always be available on board a ship.

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at Istanbul on 21 May 2022



E. NAMOGLU, Surveyor

NIPPON KAIJI KYOKAI

