

ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

Certificate no.:
EIAPP-F-097436-2654

Issued under the provisions of the Protocol of 1997, as amended by resolution MEPC.176(58) in 2008, to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified of the Protocol of 1978 related thereto (hereinafter referred to as "the Convention") under the authority of the Government of

THE REPUBLIC OF SINGAPORE

by DNV

Particulars of the engine:

Engine manufacturer:	Caterpillar, Inc.
Model number:	3512
Serial number:	MXN00208
Test cycle(s):	D2 / E2
Rated power [kW] and speed [rpm]:	1432 @ 1800
Engine approval number:	EIAPP-F-097436-2654

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 2008 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 service 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 the 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 **Hamburg** on **2021-11-02**



This document is signed electronically in accordance with IMO FAL. 5/Circ.39/Rev.2. Validation and authentication can be obtained from trust.dnv.com by using the Unique Tracking Number (UTN): EIAPP-F-097436-2654

Fabian Kock
Head of Section Environmental Certification

SUPPLEMENT TO ENGINE INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE

RECORD OF CONSTRUCTION, TECHNICAL FILE AND MEANS OF VERIFICATION

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 2008.

1. Particulars of the engine

- | | | |
|-------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 | Name and address of manufacturer | Caterpillar, Inc.
100 N.E. Adams Street
Peoria, United States |
| 1.2 | Place of engine build | Lafayette, IN, USA |
| 1.3 | Date of engine build | 2016 |
| 1.4 | Place of pre-certification survey | Lafayette, IN, USA |
| 1.5 | Date of pre-certification survey | 2016 |
| 1.6 | Engine type and model number | 3512 |
| 1.7 | Engine serial number | MXN00208 |
| 1.8 | If applicable, the engine is a parent engine
of the following engine family | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> or a member engine
or engine group </div> <div style="border: 1px solid black; padding: 2px;"> 3500PA10001 </div> </div> |
| | As approved with approval no. | 97436-10 HH |
| 1.9 | Individual engine or engine family/engine group details: | |
| 1.9.1 | Approval reference | EIAPP-F-097436-2654 |
| 1.9.2 | Rated power (kW) and rated speed (rpm) values or range | 1432 @ 1800 |
| 1.9.3 | Test cycle(s) | D2 / E2 |
| 1.9.4 | Parent engine(s) test fuel oil specification | ISO-F-DMA |
| 1.9.5 | Applicable NOx emission limit (g/kWh),
regulation 13.3, 13.4 | 9.9, 7.8 /
9.9, 7.8 |
| 1.9.6 | Parent engine(s) emission value (g/kWh) | 7.7, 7.7 /
7.6, 7.6 |

2. Particulars of the technical file

The technical file, as required by chapter 2 of the NOx Technical Code 2008, 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.

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|-----|-----------------------------------------------|----------------------------|
| 2.1 | Technical file identification/approval number | EIAPP-F-097436-2654 |
| 2.2 | Technical file approval date | 2021-11-02 |

3. Specifications for the onboard NOx verification procedures

The specifications for the on board NOx verification procedures, as required by Ch. 6 of the NOx Technical Code 2008, are an essential part of the EIAPP Certificate and must always accompany an engine through its life and always be available on board a ship.

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|-------|-------------------------------------------|----------------------------|
| 3.1 | Engine parameter check method: | |
| 3.1.1 | Identification/approval number | EIAPP-F-097436-2654 |
| 3.1.2 | Approval date | 2021-11-02 |
| 3.2 | Direct measurement and monitoring method: | |
| 3.2.1 | Identification/approval number | - |
| 3.2.2 | Approval date | - |

Alternatively the simplified measurement method in accordance with 6.3 of the NOx Technical Code 2008 may be utilized.

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