



Certificate no.:
TAM00001E2

TYPE APPROVAL CERTIFICATE

This is to certify:
that the Ammonia Engine

with type designation(s)
H22CDF-LA

issued to
HD Hyundai Heavy Ind. Co., Ltd. Engine & Machinery Division
Ulsan, Korea, Republic of

is found to comply with
DNV rules for classification – Ships Pt.4 Ch.3 Sec.1 Reciprocating internal combustion engines

Application:
propulsion, multi-engine plant, auxiliary

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2025-07-04**

This Certificate is valid until **2030-07-03**.

for **DNV**

DNV local unit: **Ulsan**

Approval Engineer: **Dag Harald Williksen**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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.



Form code: TA 251

Revision: 2023-09

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Product description

four stroke, in-line engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant pressure charging system, direct injection, injection operation by cams, electronically controlled fuel injection, valve operation by cams, dual fuel, marine fuel oil and ammonia

Cylinder bore [mm]	220
Piston stroke [mm]	330
No. of cylinders	6, 7, 8, 9

Additional place of production

Hyundai Heavy Ind. Co., Ltd. Engine & Machinery Division, Ulsan, Republic of Korea

Application/Limitation

Rated power [kW/cyl.]	240	240
Rated speed [rpm]	900	1000
Mean effective pressure [bar]	25,5	23
Max. firing pressure [bar]	237	237

Type Approval documentation**Tests carried out**

Documentation:

Test report title	Type Approval Test Report H22CDF-LA
Place of test	HD Hyundai Heavy Industries Co. Ltd Ulsan, Korea
Date of test	2024-09-30 until 2024-10-02

Test engine:

Model	H22CDF-LA
Serial no.	KYE001203
No. of cylinders	6
Power [kW/cyl.]	240
Speed [rpm]	900

Marking of product

The product to be marked with manufacturer's name or trademark and type number identification.

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The objective of the Periodical Assessment is to verify that the conditions for the Type Approval are not altered since the Type Approval certificate was issued.

In case where the Type Approved product is manufactured at other companies, the Periodical Assessment shall verify that the Type Approval applicant has a quality control system for consistent production at their licensees/subcontractors. Furthermore Periodical Assessment shall be carried out randomly at these companies.

Other Conditions

Flexible hoses to be Type Approved by DNV.

Engine safety, control and monitoring systems, including sensors and actuators are not covered by this type approval certificate. Documentation for engine safety, control including speed governing and monitoring systems shall be submitted for approval according to the Rules Pt.4 Ch.9 Sec.1 Table 5 and/or as listed in relevant type approval certificates.

Electric cables and installation of this is not covered by this approval and must be verified to comply with the requirement of the Rules Pt.4 Ch.8 - Electrical Installation

END OF CERTIFICATE