

TYPE APPROVAL CERTIFICATE

Certificate No:
TAM000014J**This is to certify:****That the Dual Fuel Engine**with type designation
H54DF

Issued to

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

is found to comply with

**DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt4 Ch3 Sec1,
Reciprocating Internal Combustion Engines****Application :**

Multi engine plants: propulsion and auxiliary

Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.

This Certificate is valid until **28th May, 2025**.Issued at **Høvik** on **29th May, 2020**DNV GL local station: **Ulsan**for **DNV GL**Approval Engineer: **Tage Olav Alexander Strøm**

**Oddvar Deinboll
Head of Section**

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.

Product description

Four stroke, in-line engine, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, pulsating pressure charging system, direct injection, injection operation by cams, valve operation by cams, dual fuel. Pilot Fuel injection and the gas admission is electronically controlled.

Cylinder bore [mm]	540
Piston stroke [mm]	600
No. of cylinders	In-line: 6, 7, 8, 9 V: 12, 14, 16, 18

Application/Limitation

Rated power [kW/cyl.]	1470
Rated speed [rpm]	600
Mean effective pressure [bar]	21.4

Type Approval documentation

Tests carried out

Documentation:

Test report title	Type Approval Test report H54DF
Place of test	Hyundai, Ulsan Korea
Date of test	2019-09-19 until 2019-09-23

Test engine:

Model	H54DFV
Serial no.	KYE000914
No. of cylinders	12
Power [kW/cyl.]	1470
Speed [rpm]	600

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

The engine type is approved for use in both gas safe and emergency shutdown protected (ESD) machinery spaces as specified in the Rules, Pt.6 Ch.2 Sec.5 [3.2.2] - ESD protected machinery spaces and [3.2.3] - Gas safe machinery spaces.

Flexible hoses to be type approved by DNV GL.

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.



Job Id: **262.1-030586-1**
Certificate No: **TAM000014J**

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.

Integration test shall be performed and witnessed by the societies surveyor and reported before the first engine delivery to a DNVGL classed vessel.

Maintenance and Operation manual, to be received before first engine delivery.

END OF CERTIFICATE