

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Diesel Engine

with type designations(s)
C32 ACERT / C32

Issued to

Caterpillar, Inc.
IN Lafayette, United States

is found to comply with

DNV GL Rules for classification, Ships - DNVGL-RU-SHIP-Pt.4 Ch.3 Sec.1, Reciprocating Internal Combustion Engines

Application:

propulsion, multi engine plant / auxiliary / emergency

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL

This Certificate is valid until **2nd March, 2021**

Issued at **Hamburg** on **3rd March, 2016**

DNV GL local station: New York

for **DNV GL**

Approval Engineer: Ralph Michael

Frank Lutz
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.

Job Id: **262.1-002708-10**
Certificate No **TAM000006A**

Product description

four stroke, v-engine, non-reversible, trunk-piston, with supercharging, with charge air cooling, constant-pressure charging system, direct injection, injection operation by cams, injection operation electronically controlled, valve operation by cams, liquid fuel

Cylinder bore: 145 mm
Piston stroke: 162 mm

Additional place of production

Caterpillar Inc., GRIFFIN, United States

Application / Limitation

Rated power [kW/cyl.]	118.08	107.33	87	87	82.92	72.83	59
Rated speed [rpm]	2300	2300	2300	2100	1800	1500	1600
Mean effective pressure [bar]	23.03	20.93	16.97	18.58	20.66	21.78	16.54
Max. firing pressure [bar]	170.14	152	155	140	146	158	135.44
Rating Definition	C32ACER	C32	C32	C32	C32	C32	C32
	T/Intermittent	ACERT		ACERT	ACERT	ACERT	ACERT

Type Approval documentation

04-002379, 04-127410, 06-157363, 13-061384, 14-042106

Tests carried out

Documentation:

Test report title Type Approval test Caterpillar C32 ACERT Marine Auxiliary/ Propulsion Engine
Test report reference 07-066620, 2007-03-31
Place of test Mossville, Illinois U.S.A.
Date of test 2007-03-20 until 2007-04-03

Test engine:

Model C32 ACERT
Serial no. 02393
No. of cylinders 12
Power [kW/cyl.] 107.3
Speed [rpm] 2300

Marking of product

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

Periodical assessment

For retention of the Type Approval, DNV GL shall perform a Periodical Assessment every second year and before the expiry date of this 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.



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Other conditions

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 DNV GL Rule Pt.4 Ch.9 Sec.1/ Item 1

The type approval is not valid for emergency application for liquefied gas or chemical tankers according to DNV GL Rule Pt.4 Ch.1 Sec.3/ Item 2-2.2.1

The flame resistant hoses with couplings shall DNV GL approved according to DNV GL Rule Pt.4 Ch.6 Sec.9/ Item 4-4.1.3

All connections of pipes carrying lubrication oil or fuel oil have to be provide with re-assembly screening connections in piping $P > 1.8$ bar according to DNV GL Rule Pt.4 Ch.3 Sec.1/ Item 2-2.6

The approval does not include SCAC System with seawater hoses plus double clamps according to DNV GL Rule/ Ref. 262.1-002706-4

END OF CERTIFICATE