DNV·GL

Certificate No:
TAP000015S

TYPE APPROVAL CERTIFICATE

This is to certify:

That the exhaust gas cleaning systems for the reduction of NOx

with type designation(s)
DI13 M, DI16 M Selective Catalytic Reduction System

Issued to
Scania CV AB (Publ)
Södertälje Stockholms Län, Sweden

is found to comply with
DNV GL class programme DNVGL-CP-0353 – Type Approval - Selective catalytic reduction systems
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems

Application :

Selective Catalytic Reduction (SCR) System with bypass
Products approved by this certificate are accepted for installation on all vessels classed by DNV GL

Design pressure:	**14.5 bar (Urea dosing side)**
	3 bar (ERV Cooling system)
Pressure drop:	**400 mbar (max. including all SCR components)**
	150 mbar (bypass)
Design temperature:	**200-550 °C (reactor side)**
	55 °C (Urea dosing side)
	105 °C (ERV Cooling system)

Issued at **Høvik** on **2017-11-27**
This Certificate is valid until **2022-11-26**.
DNV GL local station: **Høvik LNG, Cargo Handling & Piping Systems**

for **DNV GL**

Approval Engineer: **Hans Jacob Horgen**

Torill Grimstad Osberg
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

The Scania SCR system is designed for reduction of NOx emissions, applicable for engine models DI13 092M (257-405kW), DI13 091M (269-426kW) and DI16 091M (430-596kW).

The SCR system consists of 24L reductant service tank/pump assembly including hoses (see application/limitation) and cabinet, SCR units with catalyst modules, evaporator, dosing unit, bypass valves and actuators, and sensors.

Treatment fluid system :
1. Reactant: Aqueous urea solution (AdBlue)
2. UREA Supply pump : membrane pump (design capacity 350 g/min, 14.5 bar)
3. Pipe materials: Stainless steel

Application/Limitation

1. The system is not approved for use with HFO. Ref. Rules for ships Pt.4 Ch.6 Sec.8 [2.2.5]

2. Certification of hoses within pump/service tank cabinet are covered by this TA certificate, see test procedures and reports[10]. Hoses H4 and H5 shall be Type Approved

3. Installation procedures according to [8] and [9] shall be observed

4. Urea pipe dimensions and standard shall be according to DNV Rules Pt.4 Ch.6 Sec.9

5. Below items are not scope of this Type Approval

    - NOx reduction capacity
    - Control and monitoring system (See TAC TAA00000K5)
    - Urea storage arrangements, including tank instrumentation, filling, ventilation and sounding arrangements. These shall be submitted for approval for each installation
    - Drainage arrangements for urea tank/pump assembly spill tray
    - Wet exhaust system installations as described in installation manuals

6. The following documentation of each actual installation shall be submitted in each case:

    - Reference to this Type Approval Certificate
    - Information about engine type and intended use (propulsion, auxiliary, etc.)
    - Information on all pipes and hoses to be delivered by the yard as referenced in the installation manual and PID
    - Pressure drop calculation for the complete exhaust line

Type Approval documentation

Tests carried out

According to submitted Pressure test report reductant hose [10]

Marking of product

The products to be marked with manufacturer’s name or trademark and type number identification

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a periodical assessment 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. The main scope of the Periodical Assessment will normally include:

- Verification of the Type Approval applicant's production and quality system w.r.t. ensuring continued consistent production of the Type Approved products at the Type Approval applicant's own premises and at other companies that are given the responsibility for manufacturing of the products.
- Review of the Type Approval documentation and that this is still used as basis for the production
- Review of possible changes to the design, the material and the performance of the product
- Verification of the product marking.

-END OF CERTIFICATE-