

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the LR Type Approval System.

This certificate is issued to:

PRODUCER MARTEK MARINE LTD

PLACE OF PRODUCTION Century Business Park
Manvers Way
Rotherham, S63 5DA
United Kingdom (UK)

DESCRIPTION Marine diesel exhaust gas monitoring system

TYPE MariNOx ®

Comprising

MINX-GA10 multi gas analyser;
MINX-GC100 sample gas preparation and conditioning apparatus;
MINX-HM1130 touch screen visual interface;
MINX-PC140 data processor;
MINX-ENG input sensors;
MINX-FOP1 fuel flow transducer;
MINX-HSP heated gas sample filter;
MINX-HSL heated sample line.

APPLICATION Monitoring of marine diesel exhaust emissions in accordance with the Direct Monitoring requirements for on-board verification specified in MARPOL 73/78 Annex VI, Regulation 13, and the NOx Technical Code, in marine environmental categories ENV1 & ENV2 as described in Lloyd's Register Test Specification No. 1: 2002.

Certificate No. 05/00044

Issue Date 25 April 2005

Expiry Date 24 April 2010

Sheet 1 of 2



P. F. Moysey
London Plan Approval
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

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SPECIFIED STANDARD

IMO Resolution MEPC.103(49) – Guidelines for On-Board NOx Verification Procedure – Direct Measurement and Monitoring Method.

RATINGS

Analyser range: NOx (ppm): 0 to 2500
CO₂ (%): 0 to 25

APPROVAL CONDITIONS

1. The MariNOx® system uses an alternative analyser, which in accordance with MEPC.103 (49) section 1.1.3 requires the approval of the Administration. Equivalence of the alternative analyser has been demonstrated to the satisfaction of LR in accordance with ISO 8178 Part 1, Section 7.
2. Use of the MariNOx® system for on-board verification must be included in the engine's Technical File, which must be approved on behalf of the Administration.
3. The gas analysers must be operated and calibrated in accordance with the requirements and intervals as specified in MEPC.103(49) Section 3.3.

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The Design Appraisal Document No. 05/00044 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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