



Certificate of Approval

Certificate No: CLI/22/321

Issue Date: 08/02/2022

Expiry Date: 07/02/2025

This certificate is issued to: Kongsberg Maritime AS

Bekkajordet 8A
PO. Box 1009
3189 Horten
Norway

Program Name: K-LOAD

Program ID/Version Number: 5.0

Minimum Hardware Specification: Processor: 4GHz, Hard Drive: SSD 250 GB, No CDROM,
RAM: 4 GB, Monitor: 24" LCD

Operating System: Windows 7 or later.

Strength Design Appraisal Document: SOUTSO/HULL/32397468/A & UKITSO/HULL/43036682

Stability Design Appraisal Document: WP4799702 & UKITSO/SLT/43322364

User's Operations Manual ID:

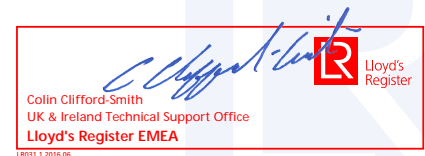
This is to certify that the above Strength and Intact (Type 1) & Damage (Type 2 & 3) Stability calculation program has been examined in accordance with the relevant Classification Rules and the requirements of Statutory Regulations and is approved for the functions stated on the Supplement attached hereto.

Conditions of Certification:

Approval of test conditions will be required together with an installation test for each specific ship.

The supplier is responsible for ensuring that any computer software and hardware is capable of handling date changes without loss of performance or functionality. The capability of the computer software and hardware to handle date changes without loss of performance or functionality has not been demonstrated to Lloyd's Register EMEA.

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C. Clifford-Smith
Surveyor to Lloyd's Register EMEA
A Subsidiary Of Lloyd's Register Group Limited

Program Name : K-LOAD

Program Version : 5.0

	INTACT	DAMAGED
<u>Strength Features:</u>		
	* Indicates Not Applicable	
Shear Forces and Bending Moments	Yes	N/A *
Multiple Shear Forces and Bending Moments	Yes	N/A *
Bulkhead Shear Force Correction Factors, Ship Rules	Yes	N/A *
Bulkhead Shear Force Correction Factors, CSR Up To June 2015	Yes	N/A *
Bulkhead Shear Force Correction Factors, CSR From July 2015	Yes	N/A *
Cargo Torque	No	N/A *
Multiple Cargo Torque	No	N/A *
Longitudinal Strength In Flooded Hold Conditions	Yes	N/A *
Local Double Bottom Strength	Yes	N/A *
<u>Stability Features:</u>		
IACS URL5 Compliant for the approved stability features only	Type 1	Type 2 & 3
Program Type:		
Hydrostatic data- Pre-programmed Even Keel, Trimmed or 3D Hullform	3D	3D
Cross curve data- Pre-programmed Even Keel, Trimmed or 3D Hullform	3D	3D
Tank capacity data- Even keel, Trimmed, 3D hullform or 3DI (3D ignoring trim)	3D	3D
Downflooding Data- Even keel angles, Trimmed: angles or 3D points	3D	3D
Intact Stability:		
A749(18) General Criteria check (A167 para. 3.1.2)	Yes	N/A *
A749(18) Timber Criteria check (A206 para. 4.1.3)	No	N/A *
Automatic Timber Cargo Water Absorption Calculation	No	N/A *
A749(18) Weather Criteria (A562 para. 3.2.2.)	Yes	N/A *
Windage Data- Single Table, Variable Table or Direct Area Calculation	D	N/A *
Icing - Deadweight item or density on Surface area	D	N/A *
Inland Waterways (ADN) Intact Stability, Type C Tank Ships, Tank Width > 0.7B	No	N/A *
Free Surfaces:		
Pre-defined Maximum values (at zero heel, Even keel or Trimmed)	None	None
Pre-defined Calibrated data (at zero heel, Even keel or Trimmed)	None	None
Directly calculated from tank geometry, taking heel into account	No	No
Directly calculated from tank geometry taking heel and trim into account	Yes	Yes
GZ Curve:		
Program calculates ship's overall TCG	Yes	N/A *
GZ curve calculations included for any initial heel angle (using GM or GZ)	YesGZ	YesGZ
GZ corrected for constant FSM/GGo for all heel angles	No	No
GZ corrected for FSM/GGo varying with heel (from pre-defined tables)	No	No
GZ directly calculated from 3D hull/tank geometry and floating position	Yes	Yes
Reference displacement - Intact, Intact minus Outflow	N/A *	I
Intermediate Stages assessed (number of stages)	N/A *	5
Limiting GM/KG Curve:		
Single parameter, pre-programmed (ie. limit versus draught)	Yes	Yes
Two parameter, pre-programmed (ie. see DAD for parameters)	Yes	Yes
Multiple parameter, pre-programmed (ie. see DAD for parameters)	Yes	Yes
Combined limit curve option (only where no separate curves exist)	Yes	N/A *
Grain Stability:		
Pre-programmed trimmed/partly filled data	Yes	N/A *
Pre-programmed trimmed/untrimmed/partly filled data	Yes	N/A *
Grain stability individual criteria check	Yes	N/A *
Pre-programmed allowable heeling moment check	Yes	N/A *
GZ curve with heeling moment plot shown	No	N/A *