Certificate No: LR25411272LCS
Issue Date: 22/12/2025
Expiry Date: 21/12/2028

Certificate of General Approval

This is to certify that the undernoted Loading Computer Software has been examined in accordance with the relevant Classification Rules and Procedures, and the applicable Statutory Regulations and is approved for the functions stated below and detailed on the Supplement attached hereto.

Company	**Techmarine S/W Co., Ltd**
Address	316-ho, 85, Namhangseo-ro, Yeongdo-gu, International Ship Supply Center, Busan, 49049, South Korea
Software Name	SHIPMANAGER-88
Software ID/Version Number	8
Minimum Hardware Specifications	Pentium 4, 300MB or more of Free Hard Disk Space, 1GB RAM.
Operating System	Microsoft Windows
User's Operations Manual ID	--
Approved Functions	☒ Strength ☒ IACS UR L 5 Type 1 - Intact Stability ☒ IACS UR L 5 Type 2 - Damage Stability (Limiting Curves) ☒ IACS UR L 5 Type 3 - Damage Stability (Direct Calculaltions) ☐ IACS UR L 5 Type 4 - Damage Stability (Safe Return to Port)
Strength Design Appraisal Document	LDS/HULL/9480419-1, SOUTSO/HULL/24999561, SOUTSO/HULL/24999561/A
Stability Design Appraisal Document	MTES/SLT/WP5082159, MTES/SLT/WP19952316, SOUTSO/SLT/WP24999278

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Colin Clifford-Smith

Ship Structure - Principal Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Strength Features

Bulkhead Shear Force Correction Factors – Ship rules	Yes
Bulkhead Shear Force Correction Factors - CSR Before 1st July 2015	Yes
Bulkhead Shear Force Correction Factors - CSR From 1st July 2015	Yes
Permissible Cargo Torque	Single
Strength With Any Single Hold Flooded (URS17)	Yes
Local Double Bottom Strength (URS1A)	Yes
Permissible Shear Forces and Bending moments	Single & Multiple

Intact Stability Features

Hydrostatic Data	Trimmed (pre-programmed)
Tank capacity Data	Even keel (pre-programmed)
Cross curve Data	Trimmed (pre-programmed)
Down-flooding Data	Trimmed angles (pre-programmed)
General Criteria Check	Intact Stability Code, as amended - MSC267(85)
Weather Criteria	Intact Stability Code, as amended - MSC267(85)
Windage Data	Single table
Timber Criteria Check	No
Timber Cargo Water Absorption	No
Ice Accumulation	No
Inland Waterways (ADN) (1)	No
Free Surface Moment calculation	Maximum values - Even keel (pre-programmed); Calibrated values - Even keel (pre-programmed)
GZ Curve Calculation	Corrected by the maximum upright inertia for all heeling angles; Corrected by the actual upright inertia distributed by sine
Free Surface Select Options for Each Tank	Maximum free surface moment; Free surface moment at the actual filling level
Grain Stability	Trimmed, untrimmed and partly filled data (pre-programmed); Allowable grain heeling moments check (pre-programmed); Grain stability criteria direct calculation and check
Limiting KG/GM Curves	Single parameter (limit versus even keel draught or displacement); Two parameters (limit versus trimmed draught or displacement)

Damage Stability Features

(1) Type C Tank Ships, Tank Width > 0.7B
(2) Applicable to Type 3 functionality only

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Limiting KG/GM Curves	Single parameter (limit versus even keel draught or displacement); Two parameters (limit versus trimmed draught or displacement); Combined intact and damage limit curve option
Direct Calculations	Pre-programmed damage cases; Five intermediate flooding stages (2); Intact reference displacement (2)
Operational Information for Safe Return to Port	No

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