



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 Lloyd's Register Type Approval System.

Manufacturer	KATRADIS MARINE ROPES INDUSTRY S.A.
Address	11 Psaron & Anapafseos Str.Drapetsona, Piraeus, 186 48, Greece
Type	Mooring Tails
Description	12/24 strand Reduced Snap Back
Trade Name	Nika-Flex 12/24 RSB
Application	Mooring-anchoring-tails
Specified Standard	OCIMF Mooring Equipment Guidelines (MEG-4) Fourth Edition 2018 ISO 10556:2009 (E) - Fibre ropes of polyester/polyolefin dual fibres ISO 9554:2019 (E) - Fibre Ropes - General Specification EN ISO 2307:2019 (E) - Fibre Rope - Determination of certain physical and mechanical properties
Ratings	Diameter: 40mm to 88mm

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 LR23333956TA-02 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

Andy Donovan

Non-Metallics & Coatings Team - Senior Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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LLOYD'S REGISTER TYPE APPROVAL
Issued to: KATRADIS MARINE ROPES INDUSTRY S.A.
For: NIKA-Flex 12/24 RSB (Reduced Snap Back) Tail

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure TA14 Version 03 (July 2017) and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Production Quality Assessment form, PRJ11100397597/1
ISO9001-2015 certificate
MEG4 Certification Testing Results, NIKA-Flex 12/24 RSB (Reduced Snap Back)
Base Design Performance Indicators, NIKA-Flex 12/24 RSB (Reduced Snap Back)
Data Sheet, NIKA-Flex 12/24 RSB (Reduced Snap Back)
Operational Procedure SOP.R-08.07
Inspection & Test Plan - Ropes
Splicing Instruction For 24-Strand Ropes
User's Manual Synthetic Mooring Ropes
Assessment Model

TEST REPORTS

See attached Appendix for results

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Supplementary Type Approval Terms and Conditions

Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.

Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.

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Appendix

RESULTS FOR MOORING TAIL BASE DESIGN CERTIFICATE

General Information			
Issue date	08/08/2023	Expiry date	07/08/2028
Line manufacturer	KATRADIS MARINE ROPES SA	Independent inspection agency	Lloyd's Register
Product name	NIKA-FLEX 12-24 RSB (REDUCED SNAP BACK)	Material type and grade	NIKAS [®] Steel fiber & HT PES
Tail Construction	12-24 strands	Jacketed	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Design range	40mm – 88mm		

Base design performance indicators				
Performance Indicators	Smallest Diameter		Largest Diameter	
	Design:	Measured:	Design:	Measured:
Diameter	40 mm	41.3 mm	88 mm	88.5 mm
Tail Design Break Force (TDBF)	40 tn		180 tn	
Tail Linear Density (TLD)	1.116 kg/m		5.152 kg/m	
Load Bearing Linear Density (LBLD) Kg/m:	1.02 kg/m		4.96 kg/m	
Tail Tenacity (TT) Kg/m:	39.22 tn/kg/m		36.29 tn/kg/m	
Splice type	Katradis Tuck Splice		Katradis Tuck Splice	
Maximum Line Tenacity (MLT):	39.22 tn/kg/m			
Dynamic Stiffness (Ksh, Kex) <i>Tested on a 40mm Mooring Tail</i>	Sheltered (Ksh): 422.68 kN/mtr = 1.1 x TDBF Exposed (Kex): 666.47 kN/mtr = 1.7 x TDBF			
Tension-tension endurance (CTF) <i>Tested on a 40mm Mooring Tail</i>	CTF 50%: 2.056 x 10 ⁸ cycles CTF 20%: 1.999 x 10 ¹³ cycles			

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<i>Tested on a 40mm Mooring Tail</i>	%TDBF: 10	%TDBF: 20	%TDBF: 30	%TDBF: 40	%TDBF: 50
Average Immediate Strain (e)	4.24	5.99	7.29	8.55	9.83

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