

**FORM A OCIMF GUIDELINES FOR THE PURCHASING AND TESTING OF SPM HAWSERS
COMPLIANCE CERTIFICATE**

Date: 26 February 2016

Rope Manufacturer: DSR Corp
 Address: 7, Noksansaneopjung-ro, 192beon-gil, Gangseo-gu, Busan, Koera
 Rope Design Designation: NY PL12 (SPM)
 Material Type (nylon, polyester, etc.): Nylon
 Material Description (or mfg's code): Nylon 6.6
 Rope Structure (8-strand, double braid, etc.): 12 Parallel Strand (3-Strand Sub Rope) with Protective Jacket
 Maximum Rope Size to be Made: 20 Wight / Unit Length: 16,230 g/m

Prototype Rope Production

Plant Location: Busan, Korea Quantity Produced Date: 09 November 2015
 Quality Control Supervisor: Kyung-Wook Kang
 Name of Independent Inspector: Pan-Jun Kim
 Inspector Company: ABS
 Address: #22, 6th Floor, DK Building 6-12, Jungang-daero 180beon-gil, Dong-gu, Busan, Republic of Korea

Certified by Independent Inspector (indicate Yes or No if listed requirements have been reviewed)

Rope Design Specification?:	Yes	Material Specification?:	Yes
Manufacturing Specification?:	Yes	Splicing Instructions?:	Yes
Quality Assurance Manual?:	Yes	Quality Control Report?:	Yes
Yarn Quality Testing?:	Yes	Rope/Yarn Strength Ratio Determination?:	Yes

Prototype Rope Testing

Test Facility: 4,000kN / 12,000kN Location: Busan, Korea Date: 26 November 2015
 Test Engineer: Yong sik Yim / Hyung-il Cho
 Name of Independent Inspector: Pan-Jun Kim
 Inspector Company: ABS
 Address: #22, 6th Floor, DK Building 6-12, Jungang-daero 180beon-gil, Dong-gu, Busan, Republic of Korea

Certified by Independent Inspector (enter average test result)

	NDBS	DExt20%	DExt50%	NWBS	WExt20%	WExt50%
Size 6	67.4 tonf	6.07%	10.11%	62.0 tonf	7.73%	11.54%
Size 15	371.4 tonf	6.59%	10.48%	338.5 tonf	7.95%	11.55%

Largest Size tested (if maximum rope greater than size 20) (enter size and average test result)

Size 6 TCLL (enter test result): 76.1% Size 6 Standard Deviation (enter test result): 2.04 tonf

Certified by Independent Inspector (indicate Yes or No if listed calculations have been reviewed): Yes

Extension at 20% (Ext20%) and 50% (Ext50%) Determination? Yes

Thousand Cycle Load Level (TCLL) Determination? Yes

Rope Size/Strength Power Determination? SP=1.857

Rope/Yarn Strength Ratio Determination? 6": 0.793 / 15": 0.747

Signature/Seal of Independent Inspector



 ABS
 BUSAN
 PAN-JUN KIM 26 FEB. 2016

Certification indicates that documents have been reviewed for full compliance and that tests have been witnessed by Independent Inspector.

Compliance and/or certification do not indicate approval and/or certification by OCIMF.



AMERICAN BUREAU OF SHIPPING

Customer Name	DSR CORPORATION	Purchase Order No.	N/A
Attending Office	Busan Port	Report Number	BK2941788
First Visit Date	08-Jul-2015	Last Visit Date	26-Feb-2016

Certification Of: **Prototype Test for SPM Hawsers NY PL12 (SPM)**

Survey Location : Busan, Korea

Manufacturer DSR CORPORATION
Stamping N/A

This is to Certify that the undersigned surveyor(s) to this Bureau did, at the request of the customer, carry out the following survey and report as follows:

Manufacturer's production processes were generally examined and material flow, control and identification technique found satisfactory.

Manufacturer's quality system and workmanship standards reviewed and considered satisfactory or requested to be modified to suit the particular project requirements.

Principal data verified in accordance with the applicable specification and approved plans, and confirmed to be within acceptable tolerances.

Inspection and testing of machinery/equipment parts and assembly satisfactorily carried out in accordance with the applicable specification.

Testing machines are maintained in satisfactory condition and records of their recheck or calibration dates confirmed.

Description: Prototype Test for SPM Hawsers NY PL12 (SPM)

Rope Size: 6" and 15"

Material Specification: Nylon 6.6 Multifilament Yarn

Drawing No: SMP-151110-01

ITP No.: SPM Hawsers NY PL12 (SPM)_REV.0

The prototype tests for SPM Hawsers NY PL12 (SPM) were carried out in accordance with OCIMF Guidelines and manufacturer's specifications as follows and considered satisfactory.

1. Material Test
 - Linear Density
 - Dry & Wet Tenacity
 - Dry & Wet Elongation at Break
 - Yarn on Yarn Abrasion
2. Sub Rope Test
 - New Dry Breaking Strength Test
 - New Wet Breaking Strength Test
3. New Dry Breaking Strength Test & Elongation Measurements
4. New Wet Breaking Strength Test & Elongation Measurements
5. Cyclic Load Test
6. Rope/Yarn Strength Ratio

NOTE: This report evidences that the survey reported herein was carried out in compliance with one or more of the Rules, guides, standards or other criteria of the American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Report is a representation only that the vessel, structure, item or material equipment, machinery or any other item covered by this Report has been examined for compliance with, or has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping. The validity, applicability and interpretation of this report is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Report or in any notation made in the contemplation of this Report shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.

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For details, refer to the attached manufacturer's test report Nos. LMC4430/4810/4927/4928/4027 and MMC4067/4072/4078.

The Foam A OCIMF Guidelines for the Purchasing and Testing of SPM Hawsers Compliance Certificate was issued and attached to this report.

**Surveyor(s) to The American Bureau of Shipping
Attending Surveyors**

Im Chang-Deuk	Electronically Signed on 26-Feb-2016 by Kim, Pan-Jun
Jung Hoi-Dae	Electronically Signed on 26-Feb-2016 by Kim, Pan-Jun
Kim Duk-Yong	Electronically Signed on 26-Feb-2016 by Kim, Pan-Jun
Kim Pan-Jun	Electronically Signed on 26-Feb-2016
Lee Ki-Taek	Electronically Signed on 26-Feb-2016 by Kim, Pan-Jun
Reviewed By Moon, Yeong-Dong	Electronically Signed on 29-Feb-2016, Busan Port

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