
Approved Manufacturer of Steel Wire Rope

Manufacturer **DSR Wire Corp.**

Address 80-21, Yulchonsandan 1-ro, Haeryong-myeon, Suncheon-si, Jeonnam, 58034,
Korea, Republic of

Type Steel Wire Rope

This approval is subject to compliance with the Rules for the Manufacture, Testing and Certification of Materials. The full details of the processes and grades to which this approval applies are given on subsequent pages of this certificate.

This certificate is issued to the named manufacturer, and is valid until the expiry date specified. Lloyd's Register is to be notified of any change that may affect the validity of this certificate, and reserves the right to cancel or withdraw this certificate.



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

Gavin Young

Senior Metallurgist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Approved Manufacturer of Steel Wire Rope

Steel Wire Rope	Steel Wire Rope	Grades	Maximum Diameter	Units
-	-	Wire rope	154.00	mm

Additional Remarks

* 2160 MPa grade ropes may be accepted for approved applications only.



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**Lloyd's Register Asia**

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<http://www.lr.org>

Date 04 November 2020

Your ref -

Our ref CHA 2004364

Memorandum

To Material & NDE Fax
Cc Fax
From Page 1 of 1
Subject Periodical inspection of DSR Corp(List 11)

To whom may concern,

I have checked manufacturer's system according to MQPS 1-1 Point 2.2.4 by selecting one of order as follows.

1. Verification of Pur. Orders (QC3059, Check items: Ø 52mm, Gal. wire rope for HENDRIK VEDER GROUP B.V), Standards & Spec's, manufacturer Procedures, visual inspection of dimension check sheets, mill cert and PA procedure with satisfactory.

2. Enclosed documents herewith.

- 2.1. FORM 2035 – Periodical Inspection of Approved Works
- 2.2. Manufacturer's Statement
- 2.3. Initial Approved Certificate

Best Regards,

K. J. Lee
Changwon Office
Lloyd's Register Asia

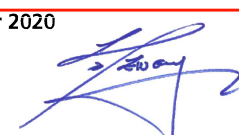



Surveyor to Changwon office



Periodical Inspection of Approved Works

Periodic Inspection is to be carried out against the current scope of approval for the works concerned. Items which are outside the current scope of approval should be highlighted in appropriate comments included in this document.

Name of firm (as- published in the approved List) DSR WIRE CORP.(Yulchon Plant)		Date of inspection 29 October 2020	
		Control Number CHA 2004364	
GENERAL INFORMATION		COMMENTS	
Is the firm's published name correct? Yes If not please indicate opposite the correct details to appear in the List			
Full manufacturing works address 80-21, Yulchonsandan 1-ro, Haeryong-myeon, Suncheon-si, Jeonnam, 58034, Korea		Approved lists and current prestige certificate numbers List 11 Certificate MD00/3989/0005/11 List Certificate List Certificate List Certificate	
Contact Name For Order Enquiries S. J. Kim / Manager		For List 1 works, has Form 2035 Appendix 1 been completed and included in this submission? No	
Email address for Order Enquiries sjkim@dsr.com		Has a product audit been completed (as per MQPS 1-1 section 2.2.4)? Yes Order Number(s) of order(s) used in product audit: QC3059	
Name of Quality Manager Seung-Jin, Kim			
Tel Number +82 061-729-3541			
Fax number +82 061-729-3600			
Mobile Number 010-7751-3080			
Website www.dsr.com			
Is the scope of approval advised correct? Yes If not what amendments are required -		If applicable, have any restrictions or conditions of the scope of approval been adhered to? No	
Are the testing machines advised correct? Yes If not what amendments are required -		List 8 Companies must include copies of Calibration Certificates with this submission N/A	
Number of visits per year. (approximately) 20 What is the main application for the manufactured products? Marine		Number of visits during the recent 3 year period (approximately) 60	
Lloyd's Register Group Office Changwon office		Date	29 October 2020
LR Office(s) to which Certificates (and copies) should be sent:		  Lloyd's Register K. J. Lee Changwon Office Lloyd's Register Asia <small>LR035 Surveyor to Lloyd's Register Asia</small>	
a member of the Lloyd's Register group			

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Testing And Certification	Yes	No	NA	Comments
Are the facilities for signing and review demonstrated to be satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there a current copy of the LR Rules and Rule Notices available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	LR Rule July 2019 Edition available
Are relevant copies of national and international standards available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is testing carried out by subcontract Test House?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If so, what is the quality approval status of the subcontracted Test House? Specify the accreditation body.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are all testing machines calibrated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Verified(Tensile, etc)
Have the calibration Certificates been viewed by the surveyor?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Verified
Is the frequency of calibration to the Rule requirements (ie on an annual basis)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Annual Based
Are there written test procedures?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the procedure for removal and machining of test pieces satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there an adequate procedure for ensuring that test specimen dimensions are in compliance with the relevant specification?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	According to Purchaser order specification and LR Rule.
Is sub-zero impact testing carried out?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If so, is the method of cooling the impact specimens satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are all tests for certified material witnessed by the Surveyor? If not, on what basis is the witnessing of tests designated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the system for recording test results satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the surveyors have access to test records?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there a written procedure for non-compliance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is certification presented in an acceptable manner with appropriate supporting documentation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is all the required information present on the certificate (Reference: certification section of the relevant Chapter of Part 2)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is chemical analysis carried out satisfactorily?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reviewed mill sheet issued by LR approved work(POSCO)
Are records kept for at least 7 years? (Ref Rules for Materials Ch 1 and Ch10))	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Obtaining Tests	Yes	No	NA	Comments
Is there a controlled process for obtaining the required tests for the products made according to the Rule requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are test coupons removed prior to heat treatment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	After Patenting Heat treatment
Is the system of identification satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there a process for storing spare chemical analysis coupons and spare mechanical test materials? What is the storage period?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Min, 3 Months after delivery
Is the frequency of the testing of products satisfactory according to Rule requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Melting/Casting	Yes	No	NA	Comments
If this section is not relevant indicate here and do not answer the questions	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Does the company have a melting facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are raw materials checked, graded and stored satisfactorily?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are written procedures available for melting?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the method of melting suitable and satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are pyrometers calibrated? What is the frequency of calibration checks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are temperature recorders calibrated? What is the frequency of calibration?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are there adequate controls on melt additions?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are analysis checks carried out during melting?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the method of moulding and control of sand satisfactory? (for castings)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are continuous casting methods used?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are these approved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is the method of identification satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are all non-conforming items segregated/identified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is there a written non-conformance procedure?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
For iron castings, is inoculation and/or nodularising technique satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
For List 1 works are the grain refining elements used as approved (e.g. Part 2, Chapter 3, and Table 3.3.2.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Where special grade steel castings are specified (stern frame, rudder horn and anchor castings) is nitrogen content determined for each cast? If not, what system is used to control nitrogen additions?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Hot working and Forming	Yes	No	NA	Comments
If this section is not relevant indicate here and do not answer the questions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the stock obtained from an approved works? List the names of the main suppliers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Posco pohang and shagang
Is the stock which is purchased within the approval scope of the supplying works?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is it adequately identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is correct certification available for rolling/forging stock products?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are re-heating facilities satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are furnaces regularly checked for temperature distribution?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are pyrometers and temperature recorders calibrated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
What is the frequency of pyrometer and temperature recorder calibration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are normalising rolling (NR) or thermo-mechanical controlled (TM) rolled methods used?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If so, is the control system satisfactory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are surveyors informed when LR material is rolled outside the control parameters?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
For chain cable works, are welding parameters monitored (see Rules Ch. 10 Section 3.2.7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

For chain cable works, is annual approval undertaken for substitution of single links (see Rules Ch 10 Section 2.14.1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Heat Treatment				
Are parts/materials supplied in the heat treated condition (including parts welded?)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Patenting heat treatment carried out before/during drawing process
Are heat treatment facilities available on site?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is heat treatment carried out by subcontractors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is heat treatment carried out to LR Rule requirements?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are thermocouples attached to material during heat treatment (casting and forgings)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
If thermocouples are not attached, specify what verification process is used to ensure that correct heat treatment is applied	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Annually checked(patenting)
Is there a procedure to ensure correct heat treatment time for each product/grade and is this adhered to?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Where continuous heat treatment furnaces are used, is the temperature in each zone and throughput time controlled for each grade/dimension (e.g. pipes or chain cable)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For mooring chain works, are the required checks of actual link temperatures made (see Rules, Ch 10 Section 3.5.5)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Final Inspection				
Is the identification of the finished items satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are the inspection facilities adequate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are inspection personnel trained/qualified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Have inspector qualifications been verified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are there written NDE inspection procedures?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is there a written visual inspection procedure?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there a formal record of visual inspection of product? Is this on route card, Test Certificate or both?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is non-conforming material segregated and dealt with in a satisfactory manner?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are satisfactory processing records kept?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the NDE procedures cover all the methods of NDE used?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are welders qualifications current?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are weld repairs allowed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are weld repairs approved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are weld procedures approved?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are records kept for a period which complies with Rule requirements (Ch 1, Section 4.1.4)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Min. 7 years

Subcontractor control	Yes	No	NA	Comments
Are there any other operations which are subcontracted (List these operations)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Have the subcontractors been audited as part of the triennial review process?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Overall Product Quality	Yes	No	NA	Comments
Have there been any changes in company structure or equipment which could affect quality of products. List any such items. Please submit signed statement from company (see MQPS 1.1 Section 2.3.1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Additional Comments
