



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

26-0609296-PDA
24-Jun-2026
23-Jun-2031
Houston Offshore Engineering

CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

DE HAAN SPECIAL EQUIPMENT B.V.

located at

P.O. BOX 4, , 9500 AA STADSKANAAL, Netherlands

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: Mooring Socket
Model: CR Sockets 512 - 540
Endorsements:
Tier: 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 23/Jun/2031 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Daniel Hyun SON

Hyun Young Son, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Netherlands

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Web: www.dehaan-se.com

Tier: 3 - Type Approved, unit certification not required

Product: Mooring Socket

Model: CR Sockets 512 - 540

Endorsements:

Intended Service:

Marine and Offshore Application -

Description:

CR-Sockets 512 - 540 - Material Grade: GS18NiMoCr36 (ABS R3S)

Rating:

MBL for Socket of ABS Grade R3S are as follow:

Size 512 MBL= 140 ton

Size 517 MBL= 160 ton

Size 519 MBL= 200 ton

Size 522 MBL= 250 ton

Size 524 MBL= 300 ton

Size 526 MBL= 400 ton

Size 527 MBL= 500 ton

Size 528 MBL= 600 ton

Size 529 MBL= 700 ton

Size 530 MBL= 800 ton

Size 531 MBL= 900 ton

Size 533 MBL= 1000 ton

Size 540 MBL= 1250 ton

Service Restriction:

- Unit Certification is not required for this product.

- To be used on ABS classed MODUs or temporary moored installation which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the product.

- Production testing and inspection are to be in accordance with the ABS Guide for the Certification of Offshore Mooring Chain December 2009 (Up-dated February 2017):

- Proof tests and break load tests are to be carried out to loads required for Socket as specified in the above Ratings.

- Mechanical tests are to be carried out in accordance with the ABS Guide for Offshore Mooring Chain and to meet the following Grade mechanical properties:

Steel Grade	Yield Strength	Tensile Strength	Elongation	Reduction of Area	CVN Impact
Tests @ -20°C					
GS18NiMoCr36 (ABS R3S)	630 MPa	780 MPa	12%	-	>=50 Joules

- Manufacturing and QA approval process is to be in accordance with the ABS Guide for Offshore Mooring Chain, and submitted to ABS.

- The tests are to be performed in the presence of an ABS Surveyor.

- If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

Comments:

- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

- All materials and welding are to be in accordance with Rules and Surveyor's Satisfaction.

Notes/Drawing/Documentation:

Report No.14006_CR512,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 512,Revision:3

Report No.14006_CR517,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 517,Revision:3

Report No.14006_CR519,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 519,Revision:3

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Report No.14006_CR522,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 522,Revision:3
Report No.14006_CR524,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 524,Revision:3
Report No.14006_CR526,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 526,Revision:3
Report No.14006_CR527,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 527,Revision:3
Report No.14006_CR528,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 528,Revision:5
Report No.14006_CR529,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 529,Revision:3
Report No.14006_CR530,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 530,Revision:3
Report No.14006_CR531,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 531,Revision:3
Report No.14006_CR533,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 533,Revision:3
Report No.14006_CR540,STRENGTH AND FATIGUE ANALYSIS OF A CR-SOCKET 540,Revision:3
Report No. DH-Q-INS-ABS-014, DH-Q-INS-014-ABS_Rev00 AMM Testing Procedure CR Mooring Socket, Revision:0

Drawing No.015-0025,CR SOCKET NO.512 WIRE 1 1/4 - 1 3/8 IN(31-36mm)/Specification Sheet 015-0025 Sheet 1
Drawing No.015-0026,CR SOCKET NO.517 WIRE 1 1/2 - 1 5/8 IN(37-42mm)/Specification Sheet 015-0026 Sheet 1
Drawing No.015-0027,CR SOCKET NO.519 WIRE 1 3/4 - 1 7/8 IN(43-48mm)/Specification Sheet 015-0027 Sheet 1
Drawing No.015-0028,CR SOCKET NO.522 WIRE 2 - 2 1/8 IN(49-54mm)/Specification Sheet 015-0028 Sheet 1
Drawing No.015-0029,CR SOCKET NO.524 WIRE 2 1/4 - 2 3/8 IN(55-60mm)/Specification Sheet 015-0029 Sheet 1
Drawing No.015-0030,CR SOCKET NO.526 WIRE 2 1/2 - 2 5/8 IN(61-68mm)/Specification Sheet 015-0030 Sheet 1
Drawing No.015-0031,CR SOCKET NO.527 WIRE 2 3/4 - 2 7/8 IN(69-75mm)/Specification Sheet 015-0031 Sheet 1
Drawing No.015-0032,CR SOCKET NO.528 WIRE 3 - 3 1/8 IN(76-80mm)/Specification Sheet 015-0032 Sheet 1
Drawing No.015-0033,CR SOCKET NO.529 WIRE 3 1/4 - 3 3/8 IN(81-86mm)/Specification Sheet 015-0033 Sheet 1
Drawing No.015-0034,CR SOCKET NO.530 WIRE 3 1/2 - 3 5/8 IN(87-93mm)/Specification Sheet 015-0034 Sheet 1
Drawing No.015-0035,CR SOCKET NO.531 WIRE 3 3/4 - 4 IN(94-102mm)/Specification Sheet 015-0035 Sheet 1
Drawing No.015-0036,CR SOCKET NO.533 WIRE 4 1/4 - 4 1/2 IN(108-115mm)/Specification Sheet 015-0036 Sheet 1
Drawing No.015-0037,CR SOCKET NO.540 WIRE 5 IN(122-130mm)/Specification Sheet 015-0037 Sheet 1

Terms of Validity:

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STANDARDS

ABS Rules:

2025 ABS Rules for Conditions of Classification, Part 1B – 2025 Offshore Units and Structures, 1B-1-4/9.7, 1B-1-A2, 1B-1-A3;
2025 Requirements for the Certification of Offshore Mooring Chain, 1/3-5, 1/11.21.2, 5/3.1, 5/3.3, and 5/5.1.

National:

NA

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International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA