



TYPE APPROVAL CERTIFICATE

Certificate No:
TAS00001BZ
Revision No:
3

This is to certify:

That the Chain, shackles, swivels, sockets

with type designation(s)

Open Spelter sockets (OSS) and Closed Spelter Sockets (CSS and CR)

Issued to

De Haan Special Equipment B.V.
Stadskanaal, Groningen, Netherlands

is found to comply with

DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2023-05-16**

for **DNV**

This Certificate is valid until **2028-05-15**.

DNV local unit: **Netherlands CMC**

Approval Engineer: **Luisa Brites**

Per Esvall
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

- Open spelter sockets (OSS) with pin; MBL = 8 to 2500 mT
- Open spelter sockets (OSS) with safety pin; MBL = 8 to 2500 mT
- Closed spelter sockets (CSS); MBL = 8 to 2500 mT
- Closed sockets (CR); MBL = 140 to 1250 mT
- Design temperature: -40 degC

Relevant parts of the following standards have been used for reference:

- EN 13411-4: 2002
- EN 12385-1: 2002
- ISO 3189/1: 1985

Application/Limitation

- Socketing procedure to be according to EN13411-4.
- If used as end termination for spiral rope, the socketed rope shall be tested in accordance with EN 13411-4 Annex C.
- The arrangement connecting to the pin/bolt in the open spelter sockets shall be such that equally distributed load on the pin is ensured.
- All materials are to be delivered with 3.1 certificates (EN 10204:2004), documenting mechanical properties and chemical composition in accordance with the Type Approval documentation, and shall comply with DNV-ST-0378 "Standard for offshore and platform lifting appliances" Ed. July 2019 amended October 2021.
- NDT requirements as per DNV-OS-E304 Ch. 2 Sec. 5 2.2.

Wire rope diameters, fill factors and minimum breaking strength of the assembly:

The use of the sockets, corrosion and difference between onshore/offshore is given by De Haan and is not evaluated by DNV.

Open Spelter Socket (OSS) with Pin		Offshore, Galvanised or Painted / Onshore, Painted or Galvanised		
Nr	mm	2160 MBL [tons]	WLL [tons]	Fill factor
192	6 - 7	8	1,6	0,79
194	8 - 10	12	2,4	0,79
196	11 - 13	20	4	0,79
198	14 - 16	30	6	0,79
100	17 - 19	40	8	0,79
104	20 - 22	60	12	0,79
108	23 - 26	75	15	0,79
111	27 - 30	100	20	0,79
115	31 - 36	125	25	0,79
118	37 - 39	150	30	0,79
120	40 - 42	180	36	0,79
125	43 - 48	230	46	0,79
128	49 - 54	280	56	0,79
130	55 - 60	375	75	0,79
132	61 - 68	425	85	0,79
135	69 - 75	500	100	0,79
138	76 - 80	600	120	0,79
140	81 - 86	700	140	0,79

142	87 - 93	750	150	0,79
144	94 - 102	950	190	0,79
146	108 - 115	1200	240	0,79
150	122 - 130	1400	280	0,79
160	140 - 155	2000	400	0,79
170	158 - 167	2500	500	0,79

Open Spelter Socket (OSS) with Safety Pin	Offshore, Galvanised or Painted / Onshore, Painted or Galvanised
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Nominal Diameter or wire rope		2160 MBL	WLL	Fill factor
Nr	mm	[tons]	[tons]	
192	6 - 7	8	1,6	0,79
194	8 - 10	12	2,4	0,79
196	11 - 13	20	4	0,79
198	14 - 16	30	6	0,79
100	17 - 19	40	8	0,79
104	20 - 22	60	12	0,79
108	23 - 26	75	15	0,79
111	27 - 30	100	20	0,79
115	31 - 36	125	25	0,79
118	37 - 39	150	30	0,75
120	40 - 42	180	36	0,75
125	43 - 48	230	46	0,75
128	49 - 54	280	56	0,75
130	55 - 60	375	75	0,75
132	61 - 68	425	85	0,75
135	69 - 75	500	100	0,64
138	76 - 80	600	120	0,64
140	81 - 86	700	140	0,64
142	87 - 93	750	150	0,64
144	94 - 102	950	190	0,64
146	108 - 115	1200	240	0,64
150	122 - 130	1400	280	0,64
160	140 - 155	2000	400	0,79
170	158 - 167	2500	500	0,79

Closed Spelter Socket (CSS)	Offshore, Galvanised or Painted / Onshore, Painted or Galvanised
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Nominal Diameter or wire rope		2160 MBL	WLL	Fill factor
Nr	mm	[tons]	[tons]	
290	6 - 7	8	1,6	0,79
292	8 - 10	12	2,4	0,79
294	11 - 13	20	4	0,79
296	14 - 16	30	6	0,79
298	17 - 19	40	8	0,79
201	20 - 22	60	12	0,79
204	23 - 26	75	15	0,79
207	27 - 30	100	20	0,79
212	31 - 36	125	25	0,79
215	37 - 39	150	30	0,75
217	40 - 42	180	36	0,75
219	43 - 48	230	46	0,75
222	49 - 54	280	56	0,75
224	55 - 60	375	75	0,75
226	61 - 68	425	85	0,75
227	69 - 75	500	100	0,64
228	76 - 80	600	120	0,64
229	81 - 86	700	140	0,64
230	87 - 93	750	150	0,64
231	94 - 102	950	190	0,64
233	108 - 115	1200	240	0,64
240	122 - 130	1400	280	0,64
250	140 - 155	2000	400	0,79
260	158 - 167	2500	500	0,79

CR Socket	Offshore, Galvanised or Painted / Onshore, Painted or Galvanised
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Nominal Diameter or wire rope		2160 MBL	WLL	Fill factor
Nr	mm	[tons]	[tons]	
512	31 - 36	140	28	0,79
517	40 - 42	160	32	0,75
519	43 - 48	200	40	0,75
522	49 - 54	250	50	0,75
524	55 - 60	300	60	0,75
526	61 - 68	400	80	0,75
527	69 - 75	500	100	0,64
528	76 - 80	600	120	0,64
529	81 - 86	700	140	0,64
530	87 - 93	800	160	0,64
531	94 - 102	900	180	0,64
533	108 - 115	1000	200	0,64
540	122 - 130	1250	250	0,64

Type Approval documentation

Drawing No	Rev.	Title	Status
		COMPLETE REPORT	For Information
DHPL46398	2	PROOF LOAD PROCEDURE SOCKETS	For Information
R16021_CSS	0	STRENGTH AND FATIGUE ANALYSIS OF 24 CLOSED SPELTER SOCKETS	For Information
Booklet	0	CLOSED SPELTER SOCKETS	Type Approved
-	0	MATERIAL - OPEN SPELTER SOCKET WITH PIN	For Information
-	0	MATERIAL - OPEN SPELTER SOCKET WITH SAFETY PIN	For Information
-	0	MATERIAL - CLOSED SPELTER SOCKET	For Information
-	0	MATERIAL - CR SOCKET STANDARD	For Information
R16021_OSS	0	STRENGTH AND FATIGUE ANALYSIS OF 24 OPEN SPELTER SOCKETS	For Information
016-0141	0	OPEN SPELTER SOCKET NO. 192 WITH PIN	Type Approved
016-0140	0	OPEN SPELTER SOCKET NO. 192 WITH BOLT	Type Approved
14006_CR524	1	STRENGTH ANALYSIS OF A CR-SOCKET 524	For Information
14006_CR522	1	STRENGTH ANALYSIS OF A CR-SOCKET 522	For Information
14006_CR519	1	STRENGTH ANALYSIS OF A CR-SOCKET 519	For Information
14006_CR517	1	STRENGTH ANALYSIS OF A CR-SOCKET 517	For Information
14006_CR512	1	STRENGTH ANALYSIS OF A CR-SOCKET 512	For Information
14006_CR540	1	STRENGTH ANALYSIS OF A CR-SOCKET 540	For Information
14006_CR533	1	STRENGTH ANALYSIS OF A CR-SOCKET 533	For Information
14006_CR531	1	STRENGTH ANALYSIS OF A CR-SOCKET 531	For Information
14006_CR530	1	STRENGTH ANALYSIS OF A CR-SOCKET 530	For Information
14006_CR529	1	STRENGTH ANALYSIS OF A CR-SOCKET 529	For Information
14006_CR528	2	STRENGTH ANALYSIS OF A CR-SOCKET 528	For Information
14006_CR527	1	STRENGTH ANALYSIS OF A CR-SOCKET 527	For Information
14006_CR526	1	STRENGTH ANALYSIS OF A CR-SOCKET 526	For Information
-	04/ 2009	CR-SOCKET PRODUCT INFORMATION	For Information

9-2593	A	CR SOCKET NO.540 WIRE 5" (122 - 130)	Type Approved
9-1460	A	CR SOCKET NO.533 WIRE 4 1/4 - 4 1/2" (108 - 115)	Type Approved
9-1459	A	CR SOCKET NO.531 WIRE 3 3/4 - 4" (94 - 102)	Type Approved
9-1458	A	CR SOCKET NO.530 WIRE 3 1/2 - 3 5/8" (87 - 93)	Type Approved
9-1457	A	CR SOCKET NO.529 WIRE 3 1/4 - 3 3/8" (81 - 86)	Type Approved
9-1456	A	CR SOCKET NO.528 WIRE 3 - 3 1/8" (76 - 80)	Type Approved
9-1455	A	CR SOCKET NO.527 WIRE 2 3/4 - 2 7/8" (69 - 75)	Type Approved
9-1454	A	CR SOCKET NO.526 WIRE 2 1/2 - 2 5/8" (61 - 68)	Type Approved
9-1453	A	CR SOCKET NO.524 WIRE 2 1/4 - 2 3/8" (55 - 60)	Type Approved
9-1452	A	CR SOCKET NO.522 WIRE 2 - 2 1/8" (49 - 54)	Type Approved
9-1451	A	CR SOCKET NO.519 WIRE 1 3/4 - 1 7/8" (43 - 48)	Type Approved
9-1450	A	CR SOCKET NO.517 WIRE 1 1/2 - 1 5/8" (37 - 42)	Type Approved
9-1449	A	CR SOCKET NO.512 WIRE 1 1/4 - 1 3/8" (31 - 36)	Type Approved

Tests carried out

Prototype testing for Open spelter sockets (OSS), following procedure according to ISO3189-1985, 6.1.1 and 6.2.1, and relevant parts of EN 12385-1-2002, was performed 14-08-2017.

Prototype testing for Closed spelter socket (CSS) and CR sockets following procedure according to ISO3189-1985, 6.1.1 and 6.2.1, and relevant parts of EN 12385-1-2002, was performed 27-06-2018.

If a DNV Product Certificate is requested by the manufacturer, each socket shall be tested in accordance with ISO 3189/1 Sec.8 in the presence of a DNV surveyor.

Marking of product

Each socket shall be marked according to DNV-ST-0378 "Standard for offshore and platform lifting appliances" Ed. July 2019 amended October 2021, Section 14.

Periodical assessment

For retention of the Type Approval, a DNV surveyor shall perform periodical assessment after two years (+/-90 days) and after 3.5 years (+/-90 days) to verify that the conditions for the approval are complied with. Reference is made to DNV-CP-0338.

END OF CERTIFICATE