



Certificate no.:
TAS00004JT

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Chain, shackles, swivels, sockets**

with type designation(s)

Closed Spelter Sockets, Open Spelter Sockets, Shortbow Sockets

issued to

Ropeblock B.V.

Oldenzaal, Overijssel, Netherlands

is found to comply with

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

DNV standard DNV-ST-0377 – Standard for shipboard lifting appliances

Application:

Sockets used as wire rope end terminations.

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

Issued at **Høvik** on **2025-08-29**

This Certificate is valid until **2030-08-28**.

for **DNV**

DNV local unit: **Netherlands VMC**

Approval Engineer: **Florian Teica**

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 USD 300 000.

Product description

Sockets used as wire rope end terminations:

- Open spelter sockets, with Pin or Bolt
- Closed spelter sockets
- Shortbow sockets

Application/Limitation

Equipment type	Type	Category (DNV-ST-0378)	Minimum breaking load (MBL)	Safe Working Load (SWL)	Service class (EN 13001-1 and EN 13001-3-5 sec 6.6)**
Open spelter socket with Pin	OSS - P	industrial*	up to 3200 t	depending on the application standard: - DNV-ST-0378 sec 5.2.5.3 - DNV-ST-0377 sec 8.2.3.1	Ref DNV doc no 394
Open spelter socket with Bolt	OSS - B	offshore	up to 3200 t		Ref DNV doc no 394
Closed spelter socket	CSS	offshore	up to 3200 t		Ref DNV doc no 393
Short bow socket	SBS	offshore	up to 1000 t		Ref DNV doc no 395

*) Open spelter sockets with pin (without nut) to be specially considered by end user if suitable for the specific application, i.e. offshore operations. Statutory requirements or other regulations may prohibit such installations. Special precautions to be made to prevent damage to locking pin.

**) For the fatigue evaluation, the cyclic loading is defined as *pulsating*, where a cycle represents one full repetition of the loading pattern, thus a stress cycle is counted each time the stresses return to minimum. A load cycle is equal to a stress cycle.

Maximum roughness: 200 µm

Design temperature (T_d):

- OSS and CSS: -30 deg C
- SBS: -20 deg C

The following is not part of the Type approval; it is the end user's responsibility to ensure these aspects are considered prior to using the sockets:

- The arrangement connecting to the pin/bolt in open spelter sockets shall be such that equally distributed load on the pin is ensured
- Corrosion in offshore environment
- Socketing; this shall follow an applicable standard, such as EN 13411-4.

Socket specification

SBS	MBL [t]	Wire rope ø [mm]
512	140	31-36
517	160	37-42
519	200	43-48
522	250	49-54
524	320	55-60
526	400	61-68
527	500	69-75
528	600	76-80
529	700	81-86
530	800	87-93
531	900	94-102
533	1000	108-115

OSS - P	OSS - B	CSS	MBL [t]	Wire rope ø [mm]
196	196	296	8	6-7
128	128	222	310	49-54
144	144	231	920	94-102
180	180	270	3200	192-204
196	196	296	8	6-7
197	197	297	13	8-10
198	198	298	22	11-13
199	199	299	33	14-16
100	100	200	45	18-19
104	104	201	60	20-22
108	108	204	85	23-26
111	111	207	100	27-30
115	115	212	135	31-36
118	118	215	160	37-39
120	120	217	205	40-42
125	125	219	270	43-48
128	128	222	310	49-54
130	130	224	385	55-60
132	132	226	460	61-68
135	135	227	510	69-75
138	138	228	610	76-80
140	140	229	700	81-86
142	142	230	760	87-93
144	144	231	920	94-102
146	146	233	1250	108-115
150	150	240	1470	120-130
155	155	245	1750	135-140
160	160	250	2100	142-153
165	165	255	2300	154-165
170	170	260	2600	166-178]
175	175	265	2900	180-191
180	180	270	3200	192-204

Type Approval documentation

Certification

This Type Approval covers design(s) only, i.e. the Type Approval is not valid for the final product, but may be used as basis for obtaining a product certificate.

It is the responsibility of the manufacturer to ensure compliance with the approved scope and technical specifications referenced in this Type approval. Any deviations or modifications shall be communicated to DNV prior to implementation.

If a DNV Product Certificate is required, the following shall apply:

- The manufacturing survey shall be followed-up by a DNV Surveyor, unless covered by the Manufacturing Survey Agreement (MSA).
- Materials
 - All materials shall be delivered with 3.1 certificates (EN 10204:2004)
 - Material manufacturing, heat treatment and inspection shall be as per manufacturer's steel casting specification and/or applicable international standard.
 - Mechanical testing including sampling location to be carried out as per manufacturer's steel casting specification or DNV Pt.2 Ch.2 Sec.8 if stricter.
 - Impact testing requirements – for the design temperature specified in above section *Application/Limitation*, impact test temperature shall be at least 5°C below the design temperature ($T_d - 5^\circ\text{C}$):
 - Castings – as per DNV-OS-B101 Ch 2 Sec 5 table 3
 - Forgings – as per DNV-OS-B101 Ch 2 Sec 4 table 4
 - Rolled steel not for welding – as per DNV-ST-0378 table 3-2, $T_d = -35^\circ\text{C}$; impact energy as per DNV-ST-0378 sec 3.2.1.5.
- Prototype testing:
 - All sockets/pins shall be examined by magnetic particle inspection (MPI) and ultrasonic testing (UT) methods in specified areas as per DNV reviewed NDT specifications.
 - Load testing and acceptance criteria:
 - as per ISO 3189/1 sec 6.1.1. For stage 2 testing, the test load (i.e. 90% x MBL) to be sustained for not less than 30 seconds.
 - For OSS, the pin/bolt shall be able to be removed from the socket and replaced without unreasonable application of force
 - Socketed assemblies to be load tested as per EN 13411-4 Annex C.

Prototype testing, except for socketed assemblies, has been successfully carried-out on a representative selection of socket types and sizes, ref DNV correspondence number J-5.
- Production testing:
 - Proof load testing (i.e. method) and acceptance criteria shall be as per ISO 3189/1 sec 8; test load:
 - Sockets delivered as stand-alone items: 40% x MBL
 - Socketed assemblies: 40% x min (MBL_socket; MBL_wire rope)
 - For socket production, samples shall be taken from representative test coupons and tested as per manufacturer's steel casting specification or DNV Pt.2 Ch.2 Sec.8 whichever is stricter.
 - All castings shall be visually inspected by the manufacturer on accessible surfaces for surface finish and dimensional and geometrical tolerances. Roughness shall not exceed the value specified in above section *Application/Limitation*.
 - Surface condition for each socket: to be free of defects.
 - All sockets/pins shall be examined by magnetic particle inspection (MPI) and ultrasonic testing (UT) methods in specified areas as per DNV reviewed NDT specifications.

Marking of product

Each socket shall be marked in accordance with DNV-ST-0378 sec 14.5. Supporting documentation shall indicate, among others, the MBL.



Job ID: **262.1-037980-1**
Certificate no.: **TAS00004JT**

Manufactured by:

The list of material suppliers shall be made available to the DNV surveyor for assessment. Attendance at the manufacturer's location to be planned and facilitated as deemed necessary by DNV.

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

This certificate is valid only if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.

End of certificate