Certificate no.:
TAS00004TX

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Lift Component

with type designation(s)
Spreader beams

issued to
Aertssen Machinery Services Limited
Abu Dhabi, **United Arab Emirates**

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 **2025-04-25**
This Certificate is valid until **2030-04-24**.
DNV local unit: **VMC UAE**

for **DNV**

Approval Engineer: **Thomas Henrik Tranesen**

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.

Product description

Range of spreader beams intended for operation with end units.

Application/Limitation

Design temperature: -20°C to +85°C
Max number of struts in assembly: 5
Dynamic amplification factor See “Application and comments”

	Sling to vertical				EU = end unit					
MOD 70H	@ 45deg		@ 30deg							
Span [m]	WLL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	Configuration					
1.0	100	0.7	100	1.0	EU	EU				
1.5	100	1.1	100	1.5	EU	0.5	EU			
2.0	100	1.5	100	2.0	EU	1.0	EU			
2.5	100	1.8	100	2.5	EU	1.0	0.5	EU		
3.0	100	2.2	100	3.0	EU	2.0	EU			
3.5	100	2.5	100	3.5	EU	2.0	0.5	EU		
4.0	100	2.9	100	4.0	EU	2.0	1.0	EU		
4.5	100	3.2	100	4.5	EU	0.5	2.0	1.0	EU	
5.0	100	3.6	100	5.0	EU	4.0	EU			
5.5	100	3.9	100	5.5	EU	4.0	0.5	EU		
6.0	100	4.3	100	6.0	EU	4.0	1.0	EU		
6.5	88	4.6	100	6.5	EU	0.5	4.0	1.0	EU	
7.0	76	5.0	100	7.0	EU	4.0	2.0	EU		
7.5	67	5.3	100	7.5	EU	0.5	4.0	2.0	EU	
8.0	58	5.7	100	8.0	EU	1.0	4.0	2.0	EU	
8.5	51	6.0	89	8.5	EU	0.5	1.0	4.0	2.0	EU
9.0	44	6.4	77	9.0	EU	4.0	4.0	EU		
9.5	39	6.8	68	9.5	EU	0.5	4.0	4.0	EU	
10.0	34	7.1	59	10.0	EU	4.0	4.0	1.0	EU	
10.5	30	7.5	53	10.5	EU	1.0	4.0	4.0	0.5	EU
11.0	27	7.8	47	11.0	EU	2.0	4.0	4.0	EU	
11.5	25	8.2	43	11.5	EU	2.0	4.0	4.0	0.5	EU
12.0	22	8.5	38	12.0	EU	2.0	4.0	4.0	1.0	EU

EU = end unit

	Sling to vertical										
MOD 110H	@ 45deg		@ 30deg								
Span [m]	SWL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	Configuration						
2.0	125.0	1.50	170.0	2.00	EU	EU					
2.5	124.0	1.80	170.0	2.50	EU	0.5	EU				
3.0	124.0	2.20	170.0	3.00	EU	1	EU				
3.5	123.0	2.50	170.0	3.50	EU	1	0.5	EU			
4.0	122.0	2.90	170.0	4.00	EU	2	EU				
4.5	120.0	3.20	170.0	4.50	EU	2	0.5	EU			
5.0	118.0	3.60	170.0	5.00	EU	2	1	EU			
5.5	115.0	3.90	170.0	5.50	EU	0.5	2	1	EU		
6.0	112.0	4.30	170.0	6.00	EU	4	EU				
6.5	109.0	4.60	170.0	6.50	EU	4	0.5	EU			
7.0	106.0	5.00	170.0	7.00	EU	4	1	EU			
7.5	102.0	5.30	170.0	7.50	EU	0.5	4	1	EU		
8.0	98.0	5.70	170.0	8.00	EU	4	2	EU			
8.5	93.0	6.00	161.0	8.50	EU	0.5	4	2	EU		
9.0	88.0	6.40	152.0	9.00	EU	4	2	1	EU		
9.5	83.0	6.80	144.0	9.50	EU	0.5	4	2	1	EU	
10.0	78.0	7.10	135.0	10.00	EU	4	4	EU			
10.5	72.0	7.50	125.0	10.50	EU	0.5	4	4	EU		
11.0	66.0	7.80	114.0	11.00	EU	4	4	1	EU		
11.5	62.0	8.20	107.0	11.50	EU	0.5	4	4	1	EU	
12.0	58.0	8.50	100.0	12.00	EU	4	4	2	EU		
12.5	53.0	9.00	92.0	12.50	EU	0.5	4	4	2	EU	
13.0	48.0	9.50	84.0	13.00	EU	1	4	4	2	EU	
13.5	45.0	9.75	80.0	13.50	EU	0.5	1	4	4	2	EU
14.0	43.0	10.00	75.0	14.00	EU	4	4	4	EU		
14.5	39.0	10.25	69.0	14.50	EU	0.5	4	4	4	EU	
15.0	35.0	10.50	62.0	15.00	EU	4	4	4	1	EU	
15.5	33.0	11.00	58.0	15.50	EU	0.5	4	4	4	1	EU
16.0	31.0	11.50	53.0	16.00	EU	4	4	4	2	EU	

EU = end unit

	sling to vertical												
MOD 250	@ 45deg		@ 30deg		@ 20deg								
Span [m]	SWL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	Configuration						
2.0	250	0.9	250	1.5	250	2.4	EU	EU					
2.5	250	1.6	250	2.5	250	3.9	EU	0.5	EU				
3.0	250	1.6	250	2.5	250	3.9	EU	1	EU				
3.5	250	2.3	250	3.5	250	5.4	EU	1	0.5	EU			
4.0	250	2.3	250	3.5	250	5.4	EU	2	EU				
4.5	250	3.1	250	4.5	250	6.8	EU	2	0.5	EU			
5.0	250	3.1	250	4.5	250	6.8	EU	3	EU				
5.5	250	3.8	250	5.5	250	8.3	EU	3	0.5	EU			
6.0	250	3.8	250	5.5	250	8.3	EU	3	1	EU			
6.5	250	4.5	250	6.5	250	9.7	EU	0.5	3	1	EU		
7.0	250	4.5	250	6.5	250	9.7	EU	3	2	EU			
7.5	250	5.2	250	7.5	250	11.2	EU	0.5	3	2	EU		
8.0	250	5.2	250	7.5	250	11.2	EU	6	EU				
8.5	250	5.9	250	8.5	250	12.7	EU	6	0.5	EU			
9.0	250	5.9	250	8.5	250	12.7	EU	6	1	EU			
9.5	250	6.6	250	9.5	250	14.1	EU	0.5	6	1	EU		
10.0	250	6.6	250	9.5	250	14.1	EU	6	2	EU			
10.5	234	7.3	250	10.5	250	15.6	EU	0.5	6	2	EU		
11.0	234	7.3	250	10.5	250	15.6	EU	6	3	EU			
11.5	204	8.0	250	11.5	250	17.1	EU	0.5	6	3	EU		
12.0	204	8.0	250	11.5	250	17.1	EU	3	6	1	EU		
12.5	178	8.7	250	12.5	250	18.5	EU	0.5	3	6	1	EU	
13.0	178	8.7	250	12.5	250	18.5	EU	3	6	2	EU		
13.5	158	9.4	250	13.5	250	20.0	EU	0.5	3	6	2	EU	
14.0	158	9.4	250	13.5	250	20.0	EU	6	6	EU			
14.5	138	10.1	235	14.5	250	21.4	EU	0.5	6	6	EU		
15.0	138	10.1	235	14.5	250	21.4	EU	6	6	1	EU		
15.5	120	10.8	211	15.5	250	22.9	EU	0.5	6	6	1	EU	
16.0	120	10.8	211	15.5	250	22.9	EU	6	6	2	EU		
16.5	105	11.5	185	16.5	250	24.4	EU	0.5	6	6	2	EU	
17.0	105	11.5	185	16.5	250	24.4	EU	6	6	3	EU		
17.5	91	12.2	160	17.5	250	25.8	EU	0.5	6	6	3	EU	
18.0	91	12.2	160	17.5	250	25.8	EU	1	6	6	3	EU	
18.5	80	13.0	141	18.5	226	27.3	EU	0.5	1	6	6	3	EU
19.0	80	13.0	141	18.5	226	27.3	EU	2	6	6	3	EU	
19.5	69	13.7	122	19.5	196	28.8	EU	0.5	2	6	6	3	EU
20.0	69	13.7	122	19.5	196	28.8	EU	1	2	6	6	3	EU
20.5	59	14.4	106	20.5	171	30.2	EU	0.5	1	2	6	6	3	EU
21.0	59	14.4	106	20.5	171	30.2	EU	2	2	6	6	3	EU

	sling to vertical STV						EU = end unit						
MOD400	@ 45deg		@ 30deg		@ 20deg								
Span [m]	SWL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	SWL [mT]	min sling length [m]	Configuration						
2.0	400	0.8	400	1.4	400	2.3	EU	EU					
2.5	400	1.5	400	2.4	400	3.8	EU	0.5	EU				
3.0	400	1.5	400	2.4	400	3.8	EU	1	EU				
3.5	400	2.2	400	3.4	400	5.2	EU	1	0.5	EU			
4.0	400	2.2	400	3.4	400	5.2	EU	2	EU				
4.5	400	2.9	400	4.4	400	6.7	EU	2	0.5	EU			
5.0	400	2.9	400	4.4	400	6.7	EU	3	EU				
5.5	390	3.6	400	5.4	400	8.2	EU	3	0.5	EU			
6.0	390	3.6	400	5.4	400	8.2	EU	3	1	EU			
6.5	361	4.3	400	6.4	400	9.6	EU	0.5	3	1	EU		
7.0	361	4.3	400	6.4	400	9.6	EU	3	2	EU			
7.5	325	5.0	400	7.4	400	11.1	EU	0.5	3	2	EU		
8.0	325	5.0	400	7.4	400	11.1	EU	6	EU				
8.5	296	5.7	400	8.4	400	12.5	EU	6	0.5	EU			
9.0	296	5.7	400	8.4	400	12.5	EU	6	1	EU			
9.5	264	6.5	400	9.4	400	14.0	EU	0.5	6	1	EU		
10.0	264	6.5	400	9.4	400	14.0	EU	6	2	EU			
10.5	234	7.2	400	10.4	400	15.5	EU	0.5	6	2	EU		
11.0	234	7.2	400	10.4	400	15.5	EU	6	3	EU			
11.5	204	8.0	355	11.4	400	16.9	EU	0.5	6	3	EU		
12.0	204	7.9	355	11.4	400	16.9	EU	3	6	1	EU		
12.5	187	8.6	310	12.4	400	18.4	EU	0.5	3	6	1	EU	
13.0	187	8.6	310	12.4	400	18.4	EU	3	6	2	EU		
13.5	158	9.3	270	13.4	400	19.8	EU	0.5	3	6	2	EU	
14.0	158	9.3	270	13.4	400	19.8	EU	6	6	EU			
14.5	138	10.0	235	14.4	384	21.3	EU	0.5	6	6	EU		
15.0	138	10.0	235	14.4	384	21.3	EU	6	6	1	EU		
15.5	120	10.7	211	15.4	337	22.8	EU	0.5	6	6	1	EU	
16.0	120	10.7	211	15.4	337	22.8	EU	6	6	2	EU		
16.5	105	11.4	185	16.4	296	24.2	EU	0.5	6	6	2	EU	
17.0	105	11.4	185	16.4	296	24.2	EU	6	6	3	EU		
17.5	91	12.1	160	17.4	258	25.7	EU	0.5	6	6	3	EU	
18.0	91	12.1	160	17.4	258	25.7	EU	1	6	6	3	EU	
18.5	80	12.8	141	18.4	226	27.2	EU	0.5	1	6	6	3	EU
19.0	80	12.8	141	18.4	226	27.2	EU	2	6	6	3	EU	
19.5	69	13.5	122	19.4	196	28.6	EU	0.5	2	6	6	3	EU
20.0	69	13.5	122	19.4	196	28.6	EU	1	2	6	6	3	EU
20.5	59	14.2	106	20.4	171	30.1	EU	0.5	1	2	6	6	3	EU
21.0	59	14.2	106	20.4	171	30.1	EU	2	2	6	6	3	EU

Type Approval documentation

Application and comments

- Categorization as Lifting beam (ref. DNV-ST-0378 §5.2.9.6), requires absolute control of the load magnitude during lifting e.g. by means of limiting the maximum hoisting speed based on the crane geometry and stiffness for the specific operation.
  This is not considered in this Type Approval Certificate and remains in responsibility of the operator. Strict control of dynamic amplification factor is demanded.
- It is the operator's responsibility to ensure that the lifting operations executed as engineered lifts (see DNV-ST-0378 clauses 1.1.5.22 and 10.1.2.2), the real dynamic coefficient does not exceed the design dynamic coefficient.

Tests carried out

1. All materials shall be delivered with 3.1 certificates, documenting mechanical properties and chemical composition in accordance with the Type Approval documentation, and shall comply with DNV-ST-0378 §3.
2. Charpy impact testing of the materials shall be carried out at or below min design temperature in accordance with DNV-ST-0378 §3.2.2.
3. Qualification of welding procedures and qualification of welders shall be in accordance with DNV-ST-0378 §3.11.
4. Each unit shall be load tested in accordance with DNV-ST-0378 §14 and Table 14-2 (test load applicable as for Lifting beams).
5. When a CG3 or DNV product certificate is required by end user or relevant local regulations, testing of the fully assembled lifting beam at final installation shall be carried out in accordance with DNV-ST-0378 Table 14-2 and witnessed by a DNV surveyor. Assembling of the lifting tool at final installation to be carried out by qualified personnel according to assembling procedure.

Marking of product

Each unit shall be marked in accordance with DNV-ST-0378 §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.

Manufactured by:

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P.O. Box: 40196, Abu Dhabi, United Arab Emirates

END OF CERTIFICATE