

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Crane Pedestal**with type designation(s)
Standard interface frame (SIF) 2

Issued to

SMST Designers & Constructors B.V.
Drachten, Friesland, Netherlands

is found to comply with

DNV GL standard DNVGL-ST-0358 – Certification of offshore gangways for personnel transfer**Application :****Deck grillage for offshore gangway****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2020-10-26**This Certificate is valid until **2025-10-25**.DNV GL local station: **Netherlands CMC**for **DNV GL**Approval Engineer: **Florian Teica**

Aldo Matteucci
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-034603-1**
Certificate No: **TAS00002SY**

Product description

Interface frame (deck grillage) for offshore gangway

Application/Limitation

Offshore gangway type designation	TAB-L without offshore crane function			TAB-L with offshore crane function			TAB-L without offshore crane function			TAB-L with offshore crane function				
Standard interface frame (SIF) configuration	ref drg. nos. 1600224-B-B3-01 Rev A and 1600224-B-30-20 Rev A													
2 SIFs														
Maximum number of modules/nominal stack height (from deck face to to gangway tip @0 deg bridge angle)	7 modules / 24.0 m						up to 8 modules / 26.83 m							
Stack configuration	The pedestal stack may be formed of modules of 2 types, i.e. regular and reinforced. Ref 1600224-B-B3-01 Rev A, the reinforced pedestal modules (Stacking module 2) shall always be placed at the bottom of the stack; for any stack configuration, the maximum number of reinforced pedestal modules may be up to 3.													
Self-weight of access platform and jib crane(at the top of the pedesta/stack)	4.0 tonnes													
Self-weight Flatrack (at the top of the pedestal/stack)	7.0 tonnes													
Maximum mass above slewing bearing	19 tonnes													
Working parameters (at gangway slewing bearing, based on a mass above the slewing bearing as defined above)	Operational	Transit/parked		Operational	Transit/parked		Operational	Transit/parked		Operational	Transit/parked			
Axial force	19 tonnes	**		19 tonnes	**		19 tonnes	**		19 tonnes	**			
Overturning moment [kN x m]	1700	**		2000*	**		1700	**		2000*	**			
Torsion excl. Wind [kN x m]	650	**		700*	**		650	**		700*	**			
Vessel accelerations														
Vertical (in addition to gravity) [m/s ²]	±3,5	±10	±10	±6	±6	±2,5	±10	±10	±6	±6	±3,5	±10	±6	±6
Longitudinal (parallel with the length of the module) [m/s ²]	3,5	10,0	0	0	8,0	2,5	10,0	0	0	8,0	3,5	5,0	8,0	0
Transverse (parallel with the width of the module) [m/s ²]	3,5	0	10,0	8,0	0	2,5	0	10,0	8,0	0	3,5	5,0	0	8,0
Wind speed (at gangway level) [m/s]	25	44		63		25	44		63		25	44		25
Maximum forces at the interface with the supporting structure	see 1600224-C-07-14 Rev A Table 17													
Notes	*) When a dual-purpose equipment is used (i.e. capable of performing both gangway and offshore crane functions), the above defined values, except the axial force, already include the offshore safety factor SF1 = 1.3; consequently, the equipment's nominal working parameters, except the axial load, shall be decreased accordingly. **) The loads at the top of the pedestal during transit/parked condition are the resultant loads due to a mass above the slewing bearing as defined above and a Centre of Gravity with coordinates as per 1600224-C-07-14 Rev A Table 11 measured from the top of the SIF 2 and aligned with the centreline of the pedestal stack.													
Boundary conditions	The boundary conditions location and arrangement (pairing) shall be as per 1600224-C-07-05A sec 4.1 and 6.2 The SIFs may be oriented both longitudinally and transvers relative to the vessel's orientation as long as: - The SIF side rails vertical supports (global Z axis direction) will always be located on top of girders or bulkheads, thus ensuring supports of similar/close stiffness - Symmetry between the 2 side rails vertical supports (of the same SIF) is ensured Supports in global Z-direction: will always be in form of brackets transferring the vertical loads (compression/tension) through the HEB 1000 web only Supports in Y-direction: plates/brackets arranged such that the horizontal forces (transverse to the frame) are transmitted through the HEB 1000 web and lower flange (i.e. flanges will never be subject to out of plane loads). Location and height of Y-supports as per 1600224-C-07-05 Rev A sec 4.1.2. Location and height of Y-supports as per 1600224-C-07-05 Rev A sec 4.1.2. Supports in X-direction: plates/brackets arranged such that the horizontal forces (transverse to the frame) are transmitted through the HEB 1000 web and lower flange (i.e. flanges will never be subject to out of plane loads). Location and height of X-supports as per 1600224-C-07-05 Rev A sec 4.1.3.													

Minimum design temperature: -20deg C

The SIF 2 is approved for use solely in conjunction with:

- The stacking modules covered by Type approval TAS00001HU or
- The stacking modules 2 covered by Type approval TAS00002T0 or
- The TAB-M flatrack covered by Type approval TAS00000TU or
- The TAB-L flatrack covered by Type approval TAS00002GG.

Approval conditions

This review has not covered the following:

1. The adequacy of the deck and supporting structure (foundation) of the vessel, nor the connection to the deck (e.g. brackets, shear stoppers, clamps, etc. design); these are expected to be subject to class approval.
2. The connection between the stacking modules / flatrack to the SIF 2. The bolts and shear pins connecting the pedestal modules 2 to the SIFs 2 shall be inspected regularly for integrity and tightness. Should any sign of loosening or significant wear or damage be evident, these shall be tightened and/or replaced with equivalent fasteners.

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3. It is expected that the shear connection between the pedestal modules 2 and the SIF 2 (ref drg. nos. 1600224-B-30-20 Rev A detail 01) will be assembled according to SMST procedures, thus ensuring the adequate efficiency of the connection between the 2 equipment.
4. Lifting during installation
5. It is expected that the frames are subject to regular inspections (e.g. yearly) and prior to each mobilisation. Maintenance to be performed according to SMST procedures.

Type Approval documentation

Testing

For issuance of a DNVGL Product certificate, each SIF 2 shall be load tested as part of an 8-module stack/pedestal in the presence of a DNVGL Surveyor. Test loads in accordance with DNVGL-ST-0358 Section 7.

Marking of product

Each SIF 2 shall be marked in accordance with DNVGL-ST-0358 Section 7.5.

Periodical assessment

For retention of the Type Approval, a DNVGL 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 DNVGL-CP-0338.

End of certificate