



Certificate No:
TAS00003FR

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Crane Pedestal

with type designation(s)

Flatrack and pedestal version 1.0, Flatrack and pedestal version 2.0

Issued to

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

is found to comply with

DNV standard DNV-ST-0358 – Offshore gangways

Application :

Support structure for offshore gangway

Issued at **Høvik** on **2022-07-08**

This Certificate is valid until **2027-07-07**.

DNV local station: **Netherlands VMC**

for **DNV**

Approval Engineer: **Florian Teica**

.....
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.



Form code: TA 251

Revision: 2021-03

www.dnv.com

Page 1 of 4

Product description

Equipment type: Flatrack and pedestal for SMST gangways

Application/Limitation

Flatrack and pedestal version 1.0 (1320570-B-02-110 Rev A)

Equipment use: without gangway elevation system

Self-weight: 5.9 tonnes (flatrack, pedestal, boom rest, slew drives)

HPU: 5.0 tonnes

Working parameters (at gangway slewing bearing)	Operational	Transit/parked
Axial force (based on a mass = 8.5 tonnes above the slewing bearing)	117.5kN	*
Radial force (excl. wind)	43.1kN	*
Overturning moment	670kN x m	*
Torsion (excl. wind)	200kN x m	*
Vessel accelerations		
Vertical (in addition to gravity)	$\pm 3.5\text{m/s}^2$	$\pm 10\text{m/s}^2$
Horizontal	$3.5/3.5\text{m/s}^2$	$5/5 - 10/0 - 0/10\text{m/s}^2$
Wind speed (at gangway location)	25m/s	63m/s

*) The loads at the top of the pedestal during transit/parked condition are the resultant loads due to a mass = 8.5 tonnes above the slewing bearing and a Centre of Gravity with coordinates (3.5m, 0m, 1m) measured from the top of the slewing bearing

Flatrack and pedestal version 2.0 (1611570-B-02-161 Rev A)

Self-weight: 7.6 tonnes (flatrack, pedestal, boom rest, boom rest platform, slew drives)

HPU: 5.0 tonnes

Equipment use: without gangway elevation system

Working parameters (at gangway slewing bearing)	Operational	Transit/parked
Axial force (based on a mass = 10tonnes above the slewing bearing)	180kN	**
Radial force		
excl. wind	70kN	**
incl. wind	80kN	**
Overturning moment	1100kN x m	**
Torsion		
excl. wind	260kN x m	**
incl. wind	330kN x m	**
Vessel accelerations		
Vertical (in addition to gravity)	$\pm 3.5\text{m/s}^2$	$\pm 10\text{m/s}^2$
Horizontal	$3.5/3.5\text{m/s}^2$	$5/5 - 10/0 - 0/10\text{m/s}^2$
Wind speed (at gangway location)	25m/s	63m/s

**) The loads at the top of the pedestal during transit/parked condition are the resultant loads due to a mass = 10 tonnes above the slewing bearing and a Centre of Gravity with coordinates (3.5m, 0m, 1m) measured from the top of the slewing bearing

Equipment use: with gangway elevation system

Self-weight gangway elevation system: 5000kg

Maximum height: 6.035m (from flatrack deck interface to gangway slewing bearing, 5m vertical stroke)

Working parameters (at gangway slewing bearing)	Operational	Transit/parked
Axial force (based on a mass = 8.5 tonnes above the slewing bearing)	117.5kN	***
Radial force (excl. wind)	43.1kN	***
Overturning moment	670kN x m	***
Torsion (excl. wind)	200kN x m	***
Vessel accelerations		
Vertical (in addition to gravity)	$\pm 3.5\text{m/s}^2$	$\pm 10\text{m/s}^2$
Horizontal	$3.5/3.5\text{m/s}^2$	$5/5 - 10/0 - 0/10\text{m/s}^2$
Wind speed (at gangway location)	25m/s	63m/s

***) The loads at the top of the pedestal during transit/parked condition are the resultant loads due to a mass = 8.5 tonnes above the slewing bearing and a Centre of Gravity with coordinates (3.5m, 0m, 1m) measured from the top of the slewing bearing

Minimum design temperature: -20°C

The operational limitations defined above have been provided by SMST, data and procedures adopted for estimating which have not formed part of this review. It is the end user's responsibility to ensure that these are never exceeded during service.

Approval conditions

The approval is based on the following assumptions:

- The flatrack is assumed properly supported in one of the following two ways:
 - Version 1.0
 - At all four corners without counterweight or lashings
 - At all four corners with 13.0 tonnes counterweight and no lashings.
 - At all four corners with lashings and counterweight.
 - Version 2.0
 - At all four corners without counterweight or lashings
 - At all four corners with 17.5 tonnes counterweight and no lashings.
 - When using without gangway elevation system and a mass above the slewing bearing = 10 tonnes, the flatrack shall be connected to its supporting structure by means ensuring a support footprint as per 1700209-C-07-00 Rev A Figure 21
- During transit, it is assumed that the gangway bridge will be adequately seafastened to the flatrack. Gangway bridge seafastenings are not part of the approval.
- The deck foundation below the pedestal stack shall provide a stiff support according to the design assumptions, ref. doc no. 1320570-C-07-00 Rev B Figures 9 and 10 (version 1.0) and 1700209-C-07-00 Rev A Figure 7 (version 2.0)). Any other arrangement/stiffness of the vertical support structure (foundation) is not covered by the approval.
- The approval has not covered the following:
 - Adequacy of the deck and supporting structure (foundation) of the vessel.
 - In-air lifting of the flatrack
 - The gangway slewing ring
 - The gangway elevating system
 - Flatrack connections to its supporting structure
- The twistlocks connecting the flatrack to the supporting vessel are inspected according to SMST maintenance schedule for integrity and tightness.

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.

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

- The ISO blocks shall be delivered with 3.2 Type certificates.
- The manufacturing survey shall be followed-up by a DNV Surveyor
- Each flatrack and pedestal shall be tested as per DNV-ST-0358 Sec 7 and DNV approved test procedures in the presence of a DNV Surveyor.

Marking of product

Marking shall be in accordance with DNV-ST-0358 Section 7.4.

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 only valid 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