Certificate no.:
TAS000047A

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Gangway

with type designation(s)
Control system for W-type walk-2-work system

issued to
Ampelmann Operations B.V.
Delft, Zuid-Holland, **Netherlands**

is found to comply with
DNV standard DNV-ST-0358 – Offshore gangways
DNV standard DNV-ST-0378 – Offshore and platform lifting appliances

Application:

Product(s) approved by this certificate is/are accepted for installation on all W-type walk-2-work system or W-type offshore gangways

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

Issued at **Høvik** on **2024-08-15**
This Certificate is valid until **2029-08-14**.
DNV local unit: **Netherlands CMC**

for **DNV**

Approval Engineer: **Jan Olav Moen**

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

Control system comprising of electrical, hydraulic, control and monitoring systems for W-type walk-2-work system (Elevator tower, Cursor and W-type offshore gangway) or W-type offshore gangway with additional crane functionality as a stand-alone equipment.

The control system functionality is as per doc no PZEAF432EHE6-599815050-46252 Rev 2.

Software revision (at the time of issuance of the Type Approval Certificate).
PLC: 1.xxx
HMI: 1.xxx

Application/Limitation

The Type Approval covers the control system design/topology required to implement the functionality, redundancy and safety requirements as per doc no. PZEAF432EHE6-599815050-46252 Rev 2 and Safety philosophy doc no. PZEAF432EHE6-599815050-639 Rev C, and pertinent/relevant requirements as per DNV-ST-0358 sections 5 and 6 for the gangway function and DNV-ST-0378 section 8 for the offshore crane function.

The control system approval for the W-type is based on customer's confirmation that the equipment will be performing/used for Walk-2-work operations and offshore lifting operations only.

The Type approval covers the following control system topologies:

- W-type walk-2-work system (Elevator tower, Cursor and W-type offshore gangway)
- W-type offshore gangway with additional crane functionality as a stand-alone equipment

The suitability of the control system for the intended application and completeness of testing scope shall be confirmed by DNV Approval Centre on a case-by-case basis delivery through issuance of a comment in the equipment's Approval Letter.

When the type approved software is revised (affecting all future deliveries), the updated software version documentation shall be submitted to DNV for evaluation. If the changes are judged to affect functionality for which rule requirements apply, a new functional/failure test may be required. The Type approval certificate may have to be renewed to identify the new software version.
All changes in software shall be recorded as long as the system is in use on board. Documentation of major changes shall be forwarded to DNV for evaluation and approval before implemented on board. Software and hardware change handling shall be as per DNV-RU-SHIP Pt 4. Ch 9. Sec 1.5.

The Type Approval is not covering the following:

- Any modes/functions or components either defined as 'optional' or not included in the functional description redundancy design intent of the type approved control system shall be subject to case-by-case evaluation by DNV.
- Component design and certification; the components for the electrical and control and monitoring systems shall be delivered with appropriate certification as per DNV-ST-0358 tables 2-2, sec 5.14, 5.15 and 5.17 and DNV-ST-0378 table 2-3.
- The control system associated with the operation of the elevator/lift.

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.

A DNV Product Certificate (form code CMC 231) will be issued for the fully assembled W-type walk-2-work system (Elevator tower, Cursor and W-type offshore gangway) or W-type offshore gangway with additional crane functionality as a stand-alone equipment upon successful completion of the onboard testing scope.

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

- The manufacturing survey shall be followed-up by a DNV Surveyor
- Complete functional and failure testing as per DNV-ST-0358 sec 7, DNV-ST-0378 sec 14 and type approved test procedures/safety diagrams shall be performed for each delivery of a fully assembled W-type walk-2-work system (Elevator tower, Cursor and W-type offshore gangway) or W-type offshore gangway with additional crane functionality as a stand-alone equipment in the presence and to the satisfaction of a DNV Surveyor.
- The motion compensating system associated with the crane function shall be subject to functional and failure testing as per DNV-ST-0378 sec 14.6 and approved test procedures. It is expected that it may not be practical for all tests to be performed at site, hence, if some testing is to be performed in a simulated environment, the requirements in DNV-ST-0378 sec 14.6 and Table 2-1 Simulator test package shall be followed.
  Test set-up shall be agreed with the DNV CMC Surveyor.
- The DNV PC shall be issued only for the fully assembled W-type walk-2-work system (Elevator tower, Cursor and W-type offshore gangway) or W-type offshore gangway with additional crane functionality as a stand-alone equipment upon successful completion of the onboard testing scope.

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