

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Gangway**with type designation(s)
15m Docking Gangway

Issued to

Undertun Industri AS
SKODJE, Norway

is found to comply with

DNV GL standard DNVGL-ST-0358 – Certification of offshore gangways for personnel transfer**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2017-05-11**This Certificate is valid until **2022-05-10**.DNV GL local station: **Ålesund**for **DNV GL**Approval Engineer: **Iselinn Vindstad**

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.



Product description

Product: 15m telescopic docking gangway

Application/Limitation

Categorization: TYPE 2 offshore gangway

Operational		
Live Load (LL)		120 kg
Maximum operational length*		14.8 m
Minimum operational length*		7.67 m
Wind speed (at gangway location)		20 m/s
Gangway operating angle		$\pm 20^\circ$
Vessel accelerations**	Vertical	0.6 g
	Longitudinal	0.3 g
	Transverse	0.3 g
Parked/Transit/Survival		
Configuration		Bridge supported in boom rest
Safe Working Load (Live load)		-
Maximum length		14.8 m
Wind speed (at gangway location)		44 m/s
Vessel accelerations**	Vertical	0.6 g
	Longitudinal	0.3 g
	Transverse	0.3 g

*) measured from the center of the pedestal to the outmost part of the gangway tip

**) relative to the vessel axis

Design temperature: -20°C

Self-Weight:

Foundation (deck mount, incl. pedestal): 2263 kg

Telescope assembly: 1060 kg

Slewing ring reaction forces:

$F_x = -12.8 \text{ kN}$

$F_y = 16.7 \text{ kN}$

$F_z = -68.2 \text{ kN}$

$M_x = -35.6 \text{ kNm}$

$M_y = -279.7 \text{ kNm}$

$M_z = 74 \text{ kNm}$

Hydraulic cylinder axial force: 145.2 kN

The operational limitations defined above have been provided by Undertun, 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.

It has been confirmed by the designer that the flow of people will be continuously monitored and regulated throughout the period in which the gangway is in operational / working condition, thus preventing the load on the gangway to exceed the above defined LL at any given time.

The Type Approval is not covering the following components:

- Slewing ring
- Slewing gear

- Hydraulic cylinders

For certification requirements for components see DNVGL-ST-0358, Section 2.

Materials for all components are to be in compliance with DNVGL-ST-0358, Section 3.

The material for the rais/low mount on telescope, reference to drawing 16042011 revision J, are to be ordered in accordance with material standard EN 10088.

The system (electrical, hydraulical, control and monitoring) are to be covered by separate approval, and is thus not covered by this approval.

Type Approval documentation

Production test and Certification

Factory testing of the gangway is to be performed in accordance with DNVGL-ST-0358 Section 7 in presence of a DNVGL Surveyor.

The gangway assembly shall be subject to onboard tests prior to be taken into use. If the gangway is to be installed on vessel assigned DNVGL class notation Walk2Work (reference is made to DNVGL-RU-SHIP Pt.6 Ch.5 Sec.16) or DNVGL qualifier Windfarm maintenance (requires DNVGL class notation Offshore service vessel – reference is made to DNVGL-RU-SHIP Pt.5 Ch.9 Sec.6), the Society shall approve onboard test procedures, conduct onboard installation survey as well as witness final onboard testing of the gangway. If the referred DNVGL class notation or DNVGL qualifier has not been assigned to vessel, onboard test procedures as well as witness/acceptance shall be endorsed by a competent person accepted by flag/state authorities. Reference is made to DNVGL-ST-0358 Section 2.2.2.3.

Marking of product

The gangway is to be marked in accordance with DNVGL-ST-0358 Section 7.4.

Periodical assessment

For retention of the Type Approval, a DNV GL surveyor shall perform a survey every second year and before expiry date of this certificate in order to verify that the conditions of the type approval are complied with.