

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Gangway**with type designation(s)
Uptime 23,4m offshore gangway

Issued to

Marine Aluminium AS
Avaldsnes, Norwayis 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 **2017-04-24**This Certificate is valid until **2022-04-23**.DNV GL local station: **Haugesund**Approval Engineer: **Paulo Correia**for **DNV GL**

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: 23.4m telescopic gangway
Product Name: Uptime 23,4m

Application/Limitation

Categorization: TYPE 1 Offshore gangway supported at both ends.
TYPE 2 Offshore gangway with motion compensating system.

Operational				
Configuration		supported at both ends (Type1)	supported at one end (Type2)	deployment / retrieval
Live Load (LL)		4 kN/m²	7 kN	-
Maximum operational length*		22 m	23.4m	
Minimum operational length*		15.3 m		
Wind speed (at gangway location)		20 m/s		
Gangway Operating angle		+10° / -10°		NA
Vessel accelerations**	Vertical	±0.3g		
	Longitudinal	±0.3g		
	Transverse	±0.3g		
Parked / Transit / Survival				
Configuration		Bridge supported in boom rest, gangway parked in any direction		
Maximum Length*		12.6 m		
Wind speed (at gangway location)		51.5 m/s		
Vessel accelerations (maximum values)**	Vertical	±0.75g		
	Longitudinal	±0.60g		
	Transverse	±0.60g		

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

**) relative to the vessel axis

Design temperature: -20°C ~ 45°C
Total Self Weight: 280.9 kN
Engine Room Self Weight including equipemnet and lifting cylinders: 204.2 kN
Gangawy Brige Self Weight: 76.7kN
Max. Bumper Load on Type 2 operation: 7.85kN

The operational limitations defined above have been provided by Marine Aluminium AS, 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.

For operation in cantilever mode (type 2) 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 scope is limited to structural parts of the gangway. The following components/systems are not part of the Type Approval scope:

- Electrical system.
- Hydraulic system.
- Slewing ring.
- Hydraulic cylinders.
- Transmission gears and brakes for telescoping.
- Slewing gear.
- Control system, connection and support to the ship's structure shall be evaluated on a case by case approval.

Separate case-by-case approval applies for the above listed components/system in case of product certification. For certification requirements for components see DNVGL-ST-0358 Section 2.

Each delivered of the product is to be certified according to DNVGL-ST-0358 when installed onboard DNVGL vessel holding valid "Walk2Work" class notation or "Windfarm maintenance" class notation.

Type Approval documentation

Drawing No.	Rev.	Title	Status
1630013-MA-4020-N-RA-001-0001	01	Structural Design Report for Aluminium Gangway and Steel Manoeuvring House	For Inf.
1640008-MA-4020-N-RA-002-0003	01	Informative document about steel tower geometrical changes	For Inf.
1540052-MA-4020-N-XD-100-0001	01	General Arrangement	For Inf.
1340049-MA-4020-N-XD-106-0001	05	Aluminium Structure Fixed Part	Type Approved
1340049-MA-4020-N-XD-106-0002	01	Fixed Part Detail 01	Type Approved
1340049-MA-4020-N-XD-106-0003	01	Fixed Part Detail 02	Type Approved
1340049-MA-4020-N-XD-113-0001	04	Aluminium Structure Telescopic Part	Type Approved
1340049-MA-4020-N-XD-113-0002	01	Telescopic Part Details 01	Type Approved
1340049-MA-4020-N-XD-113-0003	01	Tearing Plates For HMA 5363	Type Approved
1340049-MA-4020-N-XD-113-0004	01	Tearing Plates For HMA 5363 Cutting	Type Approved
1340049-MA-4020-N-XD-113-0005	01	Telescopic Part Outer Access	Type Approved
1340049-MA-4020-N-XD-113-0006	01	Elevation Step Aluminium Structure	Type Approved
1340049-MA-4020-N-XD-113-0007	01	Access Bridge Aluminium Fixed Part	Type Approved
1340049-MA-4020-N-XD-120-0001	01	Engine Room Arrangement	For Inf.
1340049-MA-4020-N-XD-120-0002	03	Engine Room Details 01	Type Approved
1340049-MA-4020-N-XD-120-0003	03	Engine Room Details 02	Type Approved
1540102-MA-4020-N-XD-120-0004	01	Engine Room Access Way Support	For Inf.
1540102-MA-4020-N-XD-120-0005	01	Electro Motors Holes and Supports	For Inf.
1540102-MA-4020-N-XD-120-0006	01	Accumulator Support	For Inf.
1540102-MA-4020-N-XD-120-0007	01	HPU Support	For Inf.
1540102-MA-4020-N-XD-120-0008	01	Engine Room Ladder	For Inf.
1540082-MA-4020-N-XD-120-0009	01	Bulkhead Set in Locations	For Inf.
1540102-MA-4020-N-XD-120-0010	01	AC and EI-Cabinet Support	For Inf.
1340049-MA-4020-N-XD-120-0011	03	Engine Room Steel Lugs	Type Approved
1540102-MA-4020-N-XD-120-0012	01	Top handail Breckets	For Inf.
1540102-MA-4020-N-XD-120-0013	01	Access Way Support Details	For Inf.
1540102-MA-4020-N-XD-120-0014	02	Engine Inner Floor Doubling Plarties	For Inf.
1540102-MA-4020-N-XD-120-0015	01	Machined Plates for Turnengines	For Inf.
1340049-MA-4020-N-XD-120-0016	04	Engine RoomTurnengines Arrangement	For Inf.
1340049-MA-4020-N-XD-120-0018	01	Engine Room Underside Cut Out For Slewingring	For Inf.
1340049-MA-4020-N-XD-127-0001	01	Landing Cone Lashing System	Type Approved
1340049-MA-4020-N-XD-127-0002	01	Landing Cone	Type Approved
1340049-MA-4020-N-XD-127-0003	01	Landing Cone Bearing House	Type Approved
1340049-MA-4020-N-XD-127-0004	01	Shock Absorber Landing Cone (Bauer	Type Approved

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Certificate No: **TAS00000ZA**

		Hydraulics)	
1340049-MA-4020-N-XD-131-0001	01	Guide Wheels Arrangement	For Inf.
1340049-MA-4020-N-XD-131-0002	02	Guide Wheels Details	Type Approved
1340049-MA-4020-N-XD-131-0003	01	Eccentric Bushings Guide Wheels	For Inf.
1340049-MA-4020-N-XD-134-0001	01	Control Cabin (Scan Cab)	For Inf.
1340049-MA-4020-N-XD-135-0001	01	Mechanic Blocking Of Telescopic Free Coupling System	For Inf.
1340049-MA-4020-N-XD-136-0001	01	Drive Unit Guide Arrangement	For Inf.
1340049-MA-4020-N-XD-136-0002	01	Shock Absorber Cylinders Fixed Part	Type Approved
1340049-MA-4020-N-XD-136-0003	01	Shock Absorber Cylinder Support	Type Approved
1340049-MA-4020-N-XD-136-0004	01	Shock Absorbers Telescopic Part	Type Approved
1340049-MA-4020-N-XD-136-0005	01	Drive Unit Guide Support	Type Approved
1340049-MA-4020-N-XD-136-0006	01	Drive Unit Guide Details	Type Approved
1340049-MA-4020-N-XD-136-0007	01	Toothrack Details	For Inf.
1340049-MA-4020-N-XD-143-0001	01	Telescopic Drive Unit With Motors	For Inf.
1340049-MA-4020-N-XD-143-0002	01	Telescopic Drive Unit Details 01	For Inf.
1340049-MA-4020-N-XD-143-0003	01	Telescopic Drive Unit Details 02	For Inf.
1340049-MA-4020-N-XD-143-0004	01	Telescopic Drive Unit Gearwheel	For Inf.
1340049-MA-4020-N-XD-160-0001	01	Engine room access arrangement	For Inf.
1340049-MA-4020-N-XD-160-0002	01	Engine room upper acc. platform	For Inf.
1340049-MA-4020-N-XD-160-0003	01	Engine room upper acc. Stair	For Inf.
1340049-MA-4020-N-XD-160-0004	01	Engine room lower acc. platform	For Inf.
1340049-MA-4020-N-XD-160-0005	01	Engine room lower acc. Stair	For Inf.
1340049-MA-4020-N-XD-160-0006	01	Engine room top handrail	For Inf.

Tests carried out

Each gangway shall be tested in accordance with DNVGL-ST-0358 Section 7 in presence of a DNVGL Surveyor.

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 certificate, a DNV GL surveyor shall perform periodical surveys according a plan agreed with the manufacturer and before expiry date of this certificate in order to verify that the conditions of the type approval are complied with.

End of certificate