

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Emergency Towing Arrangement**with type designation(s)
Smit Bracket (KETA-43F)

Issued to

Tanktech Co., Ltd.
Busan, Republic of Koreais found to comply with
DNV GL rules for classification – Ships
IMO/MSC Resolution 35 (63)**Application :****Smit Bracket as strong point for Forward Emergency Towing System as stated on page 2 of this certificate for tankers of 50 000 tonnes deadweight and above - Safe Working Load 2 000 kN****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2019-09-03**This Certificate is valid until **2024-09-02**.for **DNV GL**DNV GL local station: **Busan**Approval Engineer: **Chi Wan Bang**

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

Smit bracket as strong point for Forward Emergency Towing:

- Safe Working load (SWL): 2 000kN (equivalent to 204 tonnes)

Application/Limitation

- The connection and support of the above component to the ship's structure are not included in this approval and subject to separate approval for each installation onboard a ship.
- If installed on DNV GL vessels, a DNV GL product certificate is to be issued for each product and the following will apply:
 - The manufacturer is required to have a DNV GL surveyor witness all important production and tests as required.
 - Non-destructive testing is to be carried out to the attending surveyor's satisfaction.
 - All welding is to be carried out by approved welders and according to approved welding procedures.
 - Materials for load carrying parts are to be delivered with required material certificates in accordance with DNVGL-RU-SHIP Pt.5 Ch.5 Sec.1 [4.2].
 - Materials specified to other standards than DNV GL Rules shall fulfill the relevant corresponding rules requirements in Pt.2.
 - For steel materials subject to welding the carbon content will be limited to maximum 0.23%.
 - Where Charpy V-notch impact testing is not specified by the materials standard, materials of welded parts shall be Charpy V-notch tested and impact energy is to be minimum 27J at 0 deg C according to DNVGL-RU-SHIP Pt.5 Ch.5 Sec.2 [2.2.5].
 - The arrangements and positioning of the above components shall comply with the requirements in IMO Resolution MSC.35(63), DNVGL-RU-SHIP Pt.5 Ch.5 Sec.2 [2.2].

Type Approval documentation

		2001-04-27	
		2001-04-25	
		2001-10-30	Stopper Plate
		2001-10-30	Fixing Pin

Tests carried out

- Strength Test Report/ Inspection Report for Model KETA-43F, dated 14 June 1999, witnessed by ABS-surveyor.
- Strength Test Report/ Inspection Report for Model KETA-43F, Smith Bracket, dated 07 Nov. 2001, witnessed by LR-surveyor.

Marking of product

The load bearing components are to be marked with the SWL, manufacturers name or trademark and type number identification.

Each fitting should be clearly marked by bead weld outline with its SWL. The SWL should be expressed in tonnes (letter 't') to avoid any confusion.

Periodical assessment



Job Id: **262.1-010283-4**
Certificate No: **TAS000022Y**

For retention of the Type Approval, a DNV GL 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