Certificate No.: 2408121433391247

TÜRK LOYDU

TYPE APPROVAL CERTIFICATE

This is to certify that the

Nozzle

TL Project No	**24-0500**
Manufacturer	**MARSİS MAKİNE VE GEMİ SANAYİ ANONİM ŞİRKETİ**
Address	**İstanbul Deri ve Endüstri Serbest Bl. Aydınlı SB mah. Kodalak Cad. No:12 Tuzla- İSTANBUL**
Product Type	**Hollow Cone**
Reference Rule	**TL Rules, Part E, Chapter 107 - Naval Ship Technology, Ship Operation Installations and Auxiliary System, 01.01.2022**
Expire Date of Previous Certificate	**-**
Place and Date	**İSTANBUL / 12.08.2024**

Subject to the conditions referred to in the following pages, this certificate is valid until 12.08.2029.

131473

Emrah SÖĞÜTÇÜ

New Building Division Manager

This certificate is subject to terms and conditions described below:

- Any significant change in design or construction may render this Certificate invalid. Type Approval Certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. This certificate is not valid for products without marking above mentioned. The manufacturer should notify TÜRK LOYDU of any modifications or changes to equipment in order to obtain valid certificate. This certificate shows that tested specimens as representative of the product complies of the TÜRK LOYDU rules, and revelant international instruments that apply to it.

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Product	: Nozzle
Type of Product	: Hollow Cone
Product Description	: The material properties of the Hollow Cone are as follows: Brass: CuZn36Pb2As-CW602N, Bronze: CuSn10-EN 1982 CC480K, S. Steel: 316L-1.4404.
Approval No / Date	: PAE-EPAS/018961/24-0500/HM, 12.06.2024, PAE-EPAS/019118/24-0500/HM, 09.07.2024
Volume Rate of Flow	: K Factor = 5,4 (l/min @ 1bar)
Max Pressure	: 16 bar
Spraying Area	: 4500 mm
Max Horizontal Nozzle Spacing	: 1500 mm
Max Distance to Bulkhead	: 600 mm
Max Coverage Area per Nozzle	: 4500 mm
Minimum Pressure at Nozzle	: 1 bar
Nozzle Orientation	: 130°
Performed Tests	: * Quality and Management System Audit * The following tests were carried out according to ISO 12259. - Annex-C Water flow test. - Annex-D Water distribution test. - Annex-H Leak resistance and hydrostatic strength tests - Annex-K Corrosion tests- Reviewed. - Annex-Q Body strength test - Annex-R Low-temperature test-Reviewed. - Visual examination * Controls accordimg to approved drawings were found satisfactory.
Test Place	: MARSİS MAKİNE VE GEMİ SANAYİ ANONİM ŞİRKETİ, İSTANBUL
Last Inspection Date	: 02.07.2024
Approval Conditions	: The nozzle type "Hallow Cone" within the scope of this plan approval will be used for the flooding system in the ammunition stores of Naval Ships.

Surveyor Name : Sezer Mahir TUĞCU

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