Certificate No: LR25228555TA
Issue Date: 28/08/2025
Expiry Date: 27/08/2030

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	**XIAMEN SONDA PETROCHEMICAL EQUIPMENT CO., LTD.**
Address	No.767, Tongfu Road, Tongan District, Xiamen City, Fujian, 361102, China
Type	Flexible Hoses
Description	ULSS-10.5-25 ULSS-10.5-40 ULSS-10.5-50 ULSS-10.5-65 ULSS-10.5-80 ULSS-10.5-100 ULSS-10.5-150 ULSS-10.5-200 ULSS-10.5-250
Trade Name	SONDAFLEX LNG Flexible Hoses
Application	LNG Transfer Hoses -Type HQC- Type B as per EN1474-2.
Specified Standard	EN1474-2- 2020 GB/T 39248-2020 IGC Code 2016 Section 5

Downloaded Copy

Gopal Nair

Piping & Pressure System Principal Specialist
to Lloyd's Register North America, Inc.
A member of the Lloyd's Register group

820 Gessner Road, Suite 300, Houston, Texas,
77024, United States

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Type Approval Certificate

Ratings

25 to 250 mm diameter
Maximum Pressure 1.05 Mpa.
Minus 196 to +45 Degree C

Additional Tests

1. **EN 1474-2- 2020 tests**

Tensile stiffness7.3.2.1
Torsion stiffness 7.3.2.2
Bend stiffness 7.3.2.3
Pressure leak test 7.3.3.1
Pressure and temperature cycle 7.3.3.2
Burst test 7.3.3.3
Impact and crush load test 7.3.3.4
Creep test 7.3.3.5
Tensile & torsional axial operational load test 7.3.3.6
Bending radius test 7.3.37
Fatigue test 7.3.3.8
Flow rate test 7.3.3.9
Electrical properties test 7.3.310

2. **Wet fire test**
As per ISO 15540.

Other Conditions

1. The hose category is HQC- B for transfer hoses and application is as per appendix C of EN 1474-2.
2. There is no outer containment and leak detection system fitted to the hoses, the end user should be aware of this condition.
3. The hoses should not be used for immersion or buoyancy applications.
4. Annex D of EN-1474-2-2020, the surge pressure should be limited to less than two times MAWP.
5. The axial load and torsional moment should be limited to the values specified on the drawing.

Downloaded Copy

820 Gessner Road, Suite 300, Houston, Texas,
77024, United States

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Type Approval Certificate

6. The end flanges should be of forged material and should confirm to one of the international flanges' standards, such as ASME B 16.5 and the pressure rating should be as per the international standard.
7. A risk assessment should be carried out as per EN1474-3 for each installation and should address the failure of hoses and mitigation aspects.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register North America, Inc. of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: New

The Design Appraisal Document TSO/25-035807-PRJ11100491662/ LR25228555TA/GN and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Downloaded Copy

820 Gessner Road, Suite 300, Houston, Texas,
77024, United States

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.