



CERTIFICATE NUMBER 19-YO1876045-PDA

EFFECTIVE DATE 9-August-2019

EXPIRATION DATE 8-August-2024

ABS TECHNICAL OFFICE Yokohama Engineering Services

## CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**TOFLE CO., INC.**

located at

**HAGI CITY**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product Flexible Metal Hose With Fittings**

**Model TF-7000**

This Product Design Assessment (PDA) Certificate remains valid until 8 August 2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau of Shipping

Yoshio Honma  
Engineer, Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

**TOFLE CO., INC.**

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**Tier: 2 - PDA Issued**

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**Product:** Flexible Metal Hose With Fittings**Model:** TF-7000**Intended Service:**

Fuel oil service system for boilers.

**Description:**

Annular convoluted hose with one outer layer of wire braiding reinforcement with threaded end connections.

**Rating:**

Size: 3/8" and 1/2"

Operation Pressure: 2.45 [MPa]

Operation Temperature: 180 [°C]

**Service Restriction:**

- Unit Certification is not required for this product.

- If the manufacturer or purchaser's request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

**Comments:**

1) Hoses are to be complete with factory assembled end fittings installed in accordance with the manufacturer's specifications.

2) End connections are to comply with applicable requirements and limitations of the Rules (4-6-2/5.5.5, 4-6-4/13.7.1, 4-6-5/7.3.3, 4-6-5/9.7.1) of the Marine Vessels Rules.

3) Hose assemblies are to be installed only where flexibility is required and are not to be subject to torsional deflection under normal conditions; hose length is to be limited to that required by flexibility only, and in clearly visible and readily accessible locations.

4) To be used at rated pressure for static pressure applications only; if used for pulsating pressures applications, maximum pulsating pressure not to exceed one-half of rated pressure.

5) The manufacturer has provided a declaration about the control of, or lack of Asbestos in this product.

**Notes/Drawing/Documentation:**

Dwg. No. MWH803734-A, TF-7000, Date: 15 February 2012,

Type Test Report No. D-2537, Type approval test report, Test Date: 27 July 2010

**Terms of Validity:**

This Product Design Assessment (PDA) Certificate 19-YO1876045-PDA, dated 09/Aug/2019 remains valid until 08/Aug/2024 or until the Rules or specifications used in the assessment are revised (whichever occurs first).

This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product.

Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA.

Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

**STANDARDS****ABS Rules:**

2019 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/5.7, 4-6-6/7.3.4

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2019 Marine Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/5.7, 4-6-6/7-3-4

2019 Steel Vessel Under 90M in Length Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-4-1-9.19

2019 Offshore Support Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-2/5.7

2019 High-Speed Craft Rules 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-4-2/9.19

2019 Mobile Offshore Drilling Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-1/11.29

2019 Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-2-1/11.29

**National:**

NA

**International:**

NA

**Government:**

NA

**EUMED:**

NA

**OTHERS:**

NA