



CERTIFICATE NUMBER 21-2196717-PDA

EFFECTIVE DATE 17-JAN-2022

EXPIRATION DATE 16-JAN-2027

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-SHI, Japan

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 16 JANUARY 2027 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)

TOFLECO., INC.

886-1, AZA-SHIRAGAMI, KAWAKAMI, HAGI-SHI

Japan 758-0141

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Email: hinkan3@tofle.com

Web: www.tofle.com/

Tier: 2 - PDA Issued

Product: Flexible Metal Hose With Fittings

Model: TF-7000

Endorsements:

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]

MWH803734-A:Tube/SUS304, Braid/SUS304

MWE802206-A:Tube/SUS316L, Braid/SUS304

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 approved end fitting in accordance with manufacturer's specifications.
- 2) 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.
- 3) To be used at rated pressure for static pressure applications only; if used for pulsating pressures applications, additional tests to take into consideration the maximum anticipated in-service pressures, vibration frequencies and forces due to installation are required.
- 4) The manufacturer has provided a declaration about the control of, or lack of Asbestos in this product.
- 5) Flexible hoses are to be permanently marked by the manufacturer with the following details as per 4-6-2/5.7.6 of the Marine Vessel Rules:
 - Hose manufacturer's name or trademark.
 - Date of manufacture (month/year).
 - Designation type reference.
 - Nominal diameter.
 - Pressure rating
 - Temperature rating.

Notes/Drawing/Documentation:

Drawing No. D-4269, Test report for MWE802206-A (SUS316L), tested by TOFLE CO., INC. and reported on 27 Nov 2021

Drawing No. D-4274, Test report for MWH803734-A (SUS304), tested by TOFLE CO., INC. and reported on 30 Nov 2021

Drawing No. MWH803734-A, Flexible Tubes

Drawing No. MWE802206-A, Flexible Tubes

Terms of Validity:

This Product Design Assessment (PDA) Certificate remains valid until 16/Jan/2027 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).

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STANDARDS

ABS Rules:

2021 Rules for Conditions of Classification, Part1: 1-1-4/9.7, 1-1-A3, 1-1-A4, which covers the followings;
2021 for Building and Classing Marine Vessels: 4-6-2/5.7, 4-6-6/7.3.4 (b)

2021 Rules for Conditions of Classification - Offshore Units and Structures, Part 1: 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following;

2021 ABS Rules for Building and Classing Mobile Offshore Unites: 4-2-1/11.29

2021 Rules for Conditions of Classification - High-Speed Craft, Part 1-1-4/11.9, 1-1-A2, which covers the following;

2021 Rules for Building and Classing High-Speed Craft: 4-4-1/9.19

National:

NA

International:

ISO 10380:2012

Government:

NA

EUMED:

NA

OTHERS:

NA