



中國驗船中心
CR Classification Society

Certificate No. 833-26-223

Date 04 June 2026

型式認可證書
TYPE APPROVAL CERTIFICATE

This is to certify that the undernoted product(s) has/have been approved by CR Classification Society in accordance with the requirements given in Chapter 16 Part IV, Chapter 2 Part VI of Rules for the Construction and Classification of Steel Ships, 2026 as an approved type for use in ships classed or intended to be classed with the Society.

Manufacturer : Tofle Co., Inc.

Approved Product(s) : Metallic Flexible Hose
(Type : TF-3000)

This certificate is valid until 30 June 2031

CHIEN-HUA HUANG

中國驗船中心 總驗船師

Chief Surveyor

CR Classification Society

(See next page for further details regarding the approval.)



This certificate evidences that the type of the products of the Manufacturer has been assessed to be in compliance with the specified CR Rules or Guidelines and to be capable of providing the listed products. This Certificate may be cancelled by CR Classification Society if the applicant makes any changes or modifications relevant to the approval, which have not been notified to, and agreed in writing with the Society. Any person not a party to the contract pursuant to which this document is delivered may not assert a claim against CR Classification Society for any liability arising out of errors or omissions which may contained in said documents, or for errors of judgment, fault or negligence committed by personnel of the Society.

Please refer to the CR website for the latest status of this approval: www.crclass.org/aw0/aw0.htm

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Name of Manufacturer:

Tofle Co., Inc.

Address of Manufacturer:

1-6-16, Honmachi, Chuo-ku, Osaka-shi, Osaka 〒541-0053 Japan

Place of Production

Tofle Omega Flex Co., Inc.

886-1, Aza-Shiragami, Kawakami, Hagi-shi, Yamaguchi 〒758-0141 Japan

Product Specification:

Technical Data

Description	:	Metallic Flexible Hose with End Fittings
Type		TF-3000
Nominal Bore	:	10A ~ 50A
Design Pressure	:	1.1 MPa ~ 7.2 MPa (Single), 2.1 MPa ~ 7.5 MPa (Double)
Design Temperature	:	40°C ~ 300°C
Working Fluid	:	F.W., F.O., L.O., Air, Hyd. Oil, Thermal Oil, S.W. and Steam (only Class III piping system)

Related Documents & Remarks:

1. Drawing

Type	Drawing No.	Approved Date
TF-3000	MWN800231-A, WC10088-B, WC10089-A, WC10090-A, WC10091-A, WC10092-A and WC10093-A	20 July 2021

2. NK Type Approval Certificate No. TA24615M is valid until 01 June 2028.

3. The product is to be marked with manufacturer's name or trademark, date of manufacture (month/year), designation type reference, nominal diameter, pressure rating and temperature rating as far as practical.

4. Products are to be inspected prior to delivery.

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5. Product Survey Requirement:

The Metallic Flexible Hoses are to be manufactured, examined and tested by Tofle Co., Inc. in accordance with the type described in this certificate and CR Rules for the Classification of Steel Ships.

6. Certificate retention survey:

The Surveyor of this Society shall be given admission to the manufacturer's premises every five years in order to verify the conditions for the type approval are complied with.

7. Periodical assessment:

The intermediate audit is to be carried out within 3 months before or after the second anniversary date or within 3 months before or after the third anniversary date of the certificate. The intermediate audit will include, but not be limited to, confirmation of operation of the manufacturer's quality system, compliance of production procedures with the technical documents accepted at the time of type approval, purchase control of raw materials, components and parts, use of survey marks and approved product logos, languages required to be used in nameplates and operation instructions, product quality feedback. In case where the intermediate audit items mentioned above are not practical, considerations will be given by the Society on a case-by-case basis.

- The End -