



BUREAU
VERITAS

TYPE APPROVAL CERTIFICATE
N°VPC-ISO10380-TC-TFL-002-JPN Rev.0

Bureau Veritas Japan, acting as third party inspection body, attests that the design type of an item of corrugated metal hose and hose assemblies identified hereunder has been examined against ISO 10380: 2012 and found to satisfy the provisions of the standard which apply to it.

Manufacturer (name): TOFLE CO.,INC.
TOFLE CO.,INC ./ 1-6-16, Honmachi, Chuo-ku, Osaka, Japan
TOFLE OMEGA FLEX CO.,INC. /
Address: 886-1, Kawakami Aza Shiragami, Hagi city, Yamaguchi, 758-0141 Japan.
MITSUWA WELDTECH CO.,INC ./
179-1, Chishirocho, Moriyama, Shiga 524-0034 JAPAN,

Trading Name - Mark TOFLE CO.,INC.

Equipment description: Corrugated metal hoses and hose assemblies (see Annex)

Identification of the approved design type(s) See annex

Versions covered by the approved design type(s) (where applicable) N/A initial

Conditions for validity Initial

This certificate, which is valid for 5 years and renewable upon request, is valid, unless changes in the state of the art can challenge the approved design type, until (dd/mm/yyyy): 24/08/2027

This certificate shall be deemed to be void and the manufacturer shall alone bear any consequences pursuant to its use, in case of modification on design type of the equipment or changes in the state of the art, where this may affect conformity with the requirements of the standard or the prescribed conditions for use of the equipment, and generally where the manufacturer fails in particular to comply with any of his obligations under ISO 10380 and Certification Condition which Manufacturer and Bureau Veritas agreed.

Other information (where applicable) Type Approval Test was conducted at TOFLE OMEGA FLEX

For the activity carried out for the issuance of the present certificate, Bureau Veritas Japan took as reference the following manufacturer's technical book TCF No.3

Existence of an annex to the Type approval certificate N /A
Free text/ référence du document

Date of examination (dd/mm/yyyy): 01-05&23-25/08/2022
Surveyor: Keijiro.Miyazono

Made at	On (dd/mm/yyyy)	Approved and Recorded in	Signed by	Signature
YOKOHAMA	25/08/2022	JAPAN	Keijiro Miyazono	

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This revision supersedes certificate N/A



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List of the relevant parts of the technical documentation

Test Reports :No.D-4330

Drawings: MNW803017-A, MW803025-A for test





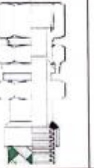




corrugated metal hose certified to ISO10380

Tube Type



Code address	OM - SD	sketch  Structure: Annular type
Descriptions	Tuf Omega Bellows for medium pressure (Standard)	
Materials	SUS316L,SUS321	
Size	25 A ~ 100 A	
max/min allowable temperature	0 °C ~ 550 °C	

Applicable product and Fittings Type

Number of form Code address		TF-1100 -Temperature	TF-1500 -Temperature	TF-5000 -Temperature	TF-7000 -Temperature	TF-7100 -Temperature	TFR-2000, 3000 -Temperature	TF-10000 -Temperature	Ferrule -Temperature	Pipe end -Temperature
DN	PS (bar)	SUSE	SUS SF	SUS SM	SUS SNM/ SUS SNF	SUS SNM- Rubber fittings	SUS BFSUS SUS BSUS	SUS BFSUS SUS BSUS	Ferrule	Pipe end
25A	43.0	○	○	○	○	○	○	—	○	○
32A	19.0	○	○	○	○	○	○	—	○	○
40A	30.0	○	○	○	○	○	○	—	○	○
50A	17.0	○	○	○	○	○	○	—	○	○
65A	21.0	○	—	○	○	—	—	○	○	○
80A	13.0	○	—	—	—	—	—	○	○	○
100A	12.0	○	—	—	—	—	—	○	○	○
sketch										

※ ○ : corrugated metal hose certified to ISO10380

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OM-SD 使用圧力と使用温度条件一覧表



OM-SD operating pressure and operating temperature condition list

DN		25A	32A	40A	50A	65A	80A	100A	PS
Ts									
20°C	1	43.0 bar	19.0 bar	30.0 bar	17.0 bar	21.0 bar	13.0 bar	12.0 bar	
50°C	0.88	37.8 bar	16.7 bar	26.4 bar	15.0 bar	18.5 bar	11.4 bar	10.6 bar	
100°C	0.73	31.4 bar	13.9 bar	21.9 bar	12.4 bar	15.3 bar	9.5 bar	8.8 bar	
150°C	0.66	28.4 bar	12.5 bar	19.8 bar	11.2 bar	13.9 bar	8.6 bar	7.9 bar	
200°C	0.60	25.8 bar	11.4 bar	18.0 bar	10.2 bar	12.6 bar	7.8 bar	7.2 bar	
250°C	0.56	24.1 bar	10.6 bar	16.8 bar	9.5 bar	11.8 bar	7.3 bar	6.7 bar	
300°C	0.52	22.4 bar	9.9 bar	15.6 bar	8.8 bar	10.9 bar	6.8 bar	6.2 bar	
350°C	0.50	21.5 bar	9.5 bar	15.0 bar	8.5 bar	10.5 bar	6.5 bar	6.0 bar	
400°C	0.48	20.6 bar	9.1 bar	14.4 bar	8.2 bar	10.1 bar	6.2 bar	5.8 bar	
450°C	0.47	20.2 bar	8.9 bar	14.1 bar	8.0 bar	9.9 bar	6.1 bar	5.6 bar	
500°C	0.46	19.8 bar	8.7 bar	13.8 bar	7.8 bar	9.7 bar	6.0 bar	5.5 bar	
550°C	0.42	18.1 bar	8.0 bar	12.6 bar	7.1 bar	8.8 bar	5.5 bar	5.0 bar	

※ DN:口径、PN:呼び圧力、PS:設計使用温度における最大圧力、TS:設計上の最高使用温度

口径	最小曲げ半径 (mm)		使用圧力 (bar)
	固定	繰返し	
25 A	80 mm	160 mm	43.0 bar
32 A	100 mm	170 mm	19.0 bar
40 A	110 mm	180 mm	30.0 bar
50 A	120 mm	200 mm	17.0 bar
65 A	140 mm	225 mm	21.0 bar
80 A	200 mm	250 mm	13.0 bar
100 A	240 mm	300 mm	12.0 bar



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List of the versions covered (where applicable)

N/A

Annex to the Certificate

TCF No.3