DNV·GL

Certificate No:
TAP00000WC

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the Gaskets and Sealings

with type designation(s)
1935 - NA JOINT SHEET, 1995 - CLINSIL BROWN

Issued to
Nichias Corporation
Tokyo, Japan

is found to comply with
JIS R 3453:2001 Compressed fiber jointing

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.
Ship's piping systems including cargo lines on Chemical and Gas Tankers carrying propylene oxide and mixtures of ethylene / propylene oxide.
The selection of the gasket material for the corresponding service, the storage and the right installation are to be according to manufacturer instruction.

Temperature range:	**See next page**
Max. working press.:	**See next page**
Design:	**Sheets**
Sizes:	**See next page**

Issued at **Hamburg** on **2017-03-28**

This Certificate is valid until **2022-03-27**.

for **DNV GL**

DNV GL local station: **Yokohama**

Approval Engineer: **Peter Gierhan**

Olaf Drews
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Examination Certificate and not to the approval of equipment/systems installed.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-024563-1**
Certificate No: **TAP00000WC**

Product description

Technical Data:
(Inspection Method: JIS R 3453: 2001)

Type: TOMBO No. 1935 NA JOINT SHEET

Thickness [mm]	Breadth x Length [mm]
0.5 (+0.10, -0.10)	1S: 1270 (+5, -5) x 1270 (+5, -5) 1J: 1524 (+7, -7) x 1524 (+7, -7)
0.8 (+0.12, -0.12)	
1.0 (+0.12, -0.12)	1S: 1270 (+5, -5) x 1270 (+5, -5) 1J: 1524 (+7, -7) x 1524 (+7, -7) 3S: 1270 (+5, -5) x 3810 (+15, -15) 6S: 2540 (+10, -10) x 3810 (+15, -15) 9S: 3810 (+15, -15) x 3810 (+15, -15) 3J: 1524 (+7, -7) x 4572 (+21, -21)
1.5 (+0.12, -0.12)	
2.0 (+0.12, -0.12)	
3.0 (+0.20, -0.20)	

Thickness [mm]		0.5 – 1.5	2.0 – 3.0
Density [g/cm³]		1.80 (+0.15, -0.10)	
Operating Temperature [°C]		-29 up to 120	
Tensile strength Min. [MPa]		8	
Compressive Test (34.3 MPa)	Compressibility [%]	5 - 17	
	Recovery Min. [%]	40	35
Stress Reaxation Max. [%] (20.6 MPa, 100 °C x 22 hr)		45	80
Gas Sealability Max. [cm³/10min] (Seating Stress: 29.4 MPa with paste) (N_2 Pressure: 0.7 MPa without paste)		2.0	

Type: TOMBO No. 1995 CLINCIL BROWN*

Thickness [mm]	Breadth x Length [mm]
0.8 (+0.12, -0.12, range max. 0.20)	1270 (+5, -5) x 1270 (+5, -5) 1270 (+5, -5) x 3810 (+50, -10) 2540 (+10, -10) x 3810 (+50, -10) 3810 (+50, -10) x 3810 (+50, -10)
1.0 (+0.12, -0.12, range max. 0.20)	
1.5 (+0.12, -0.12, range max. 0.20)	
2.0 (+0.12, -0.12, range max. 0.20)	
3.0 (+0.20, -0.20, range max. 0.30)	

Thickness [mm]		0.8	1.0	1.5	2.0	3.0
Density [g/cm³]		1.80 (+0.10, -0.10)				
Operating Temperature [°C]		-100 up to 183				
Tensile strength Min. [MPa]		17		15		
Compressive Test (34.3 MPa)	Compressibility [%]	5 - 15				
	Recovery Min. [%]	40				
Stress Reaxation Max. [%] (20.6 MPa, 100 °C x 22 hr)		25	30	40	50	70
Gas Sealability Max. [cm³/10min] (Seating Stress: 29.4 MPa with paste) (N_2 Pressure: 0.7 MPa without paste)		0.5			1.0	

*The fire safety has been additionally tested in accordance with UK / DOT, Rule 54 Appendix D

Application/Limitation

The gaskents may be used under consideration of the mechanical and physical properties as well as the chemical resistance as follosws:

- Ship's piping systems excluding carco lines on Chemical and Gas Tankers carrying propylene oxide and mixures of ethylene / propylene oxide.
- Maximum allowable working pressue and temperature according to the specification of the manufacturer.

The selection of the gaskets for the corresponding applincation and the appropriate installation is to be in acc. with the instructions of the manufacturer.

Type Examination documentation

Technical Data:
- AS5-2-1935b, dated 2009-08-28
- AS5-2-1995g, dated 2014-12-17

Tests carried out

- JIS R 3453 : 2001
- UK / DOT, Rule 54 Appendix D

Marking of product

- Manufacturer name
- Product name and further data

Certificate Retention Survey

Prior to renewal of this Type Examination Certificate a DNV GL Surveyor shall perform a renewal assessment at the manufacturer to verify that the conditions for the Type Examination are not altered since this certificate was issued.