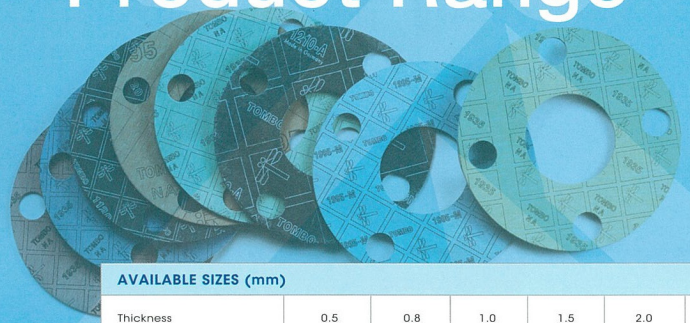
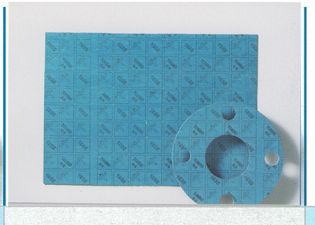
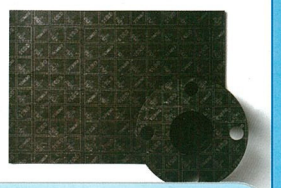
TOMBO Brand Joint Sheet Product Range







	T/ #1995	T/ #1935	T/ #1120
FEATURES:	The Flagship in Tombo Brand non asbestos gaskets materials. An optimised combination of Aramid fibers and inorganic fibers with an NBR binder. Excellent sealing performace with high temperature resistance.	An economic grade based on organic fibers with an NBR binder. Suitable for general industrial service including oils, hydrocarbons and water.	Innovative non-asbestos joint sheet for high-temperature and pressure applications. Unique combination of Expanded Graphite and Aramid allows for excellent sealing performance. The true CAF Joint Sheet replacement
APPLICATION:	• General Industry in various type of piping flanges and valves etc	• General Industry in low critical fields, shipyards	• Sealability is equivalent to that of CAF Joint Sheet
USES:	• Good resistance to oil, fuels, hydrocarbons and steam applications. • Suitable for a wide range of industries including oil and gas, petrochemicals and cryogenic (LNG) applications.	• Good resistance to oils, fuels, hydrocarbons etc. • Suitable for low operating pressure applications including general industries and automotive aftermarket	• Excellent resistance to high-pressure Saturated Steam and other mediums. • Highly recommended for usage in high-temperature and pressure application or when semi-metallic/metallic gasket is not practicle.
APPLICABLE STANDARD:	JIS R3453-2001 JIS B2404-1999 JPI-7S-4-1998 JPI-7S-16-1998 ASME B16.21-1992	JIS R3453-2001 JIS B2404-1999 JPI-7S-4-1998 JPI-7S-16-1998 ASME B16.21-1992	JIS R3453-2001 JIS B2404-1999 JPI-7S-4-1998 JPI-7S-16-1998 ASME B16.21-1992
APPROVALS:	• Germanischer Lloyd GL Type Certificate No.44 059-06HH • API-6FA Approved Fire Safety: UK/DOT, Rule 54 Appendix D • BAM Approved (130bar/90°C) • TA Luft Approval	• Germanischer Lloyd GL Type Certificate No.44 059-06HH	• TA Luft (clean air) approval, tested in accordance to VDI 2440 at 250°C

AVAILABLE SIZES (mm)

Thickness	0.5	0.8	1.0	1.5	2.0	3.0
Width x Length	1270 x 1270 (1S)	1270 x 3810 (3S)		2540 x 3810 (6S)	3810 x 3810 (9S)	

PHYSICAL PROPERTIES (Applicable for 1.5mm thick material)				INSPECTION METHOD	TECHNICAL SPECIFICATIONS		
Applicable Thickness	(mm)				1.5	1.5	1.5
Density	[g/cm³]			JIS R 3453:2001	1.70 - 1.90	1.70 - 1.95	1.40 -1.60
Tensile Strength	[MPa]	300mm/min		JIS R 3453:2001	Min 17	Min 8.0	Min. 20.0
Compressibility	[%]	34.3N/mm²		JIS R 3453:2001	5.0 - 15.0	5.0 - 17.0	5.0 - 15.0
Recovery	[%]				Min 40.0	Min 40.0	Min 40.0
Flexibility	[F Value]			JIS R 3453:2001	Max 15.0	Max 15.0	Max 15.0
Stress Relaxation	[%]	100°C X 22hr 20.6.MPa		JIS R 3453:2001	Max 40.0	Max 45.0	Max 40.0
Gas Sealability	[cc/10min]	Seating Stress : 29.4N / mm² N_2 Pressure : 0.7MPa	With paste	JIS R 3453:2001	≤ 0.5	≤ 2.0	≤ 1.0
			W/O paste		≤ 0.5	≤ 2.0	-
Oil Resistance (TS reduction rate)	[%]	IRM903, 150°C X .5hr		JIS R 3453:2001	Max 45.0	Max 45.0	Max 45.0
Oil Resistance (Thickness increase rate)	[%]				Max 15.0	Max 15.0	Max 15.0
Fuel Oil Resistance (Thickness increase rate)	[%]	Fuel B Ambient x 5hr		JIS R 3453:1995	Max 15.0	Max 15.0	Max 15.0
Fuel Oil Resistance (Weight increase rate)	[%]				Max 15.0	Max 15.0	Max 15.0

TEMPERATURE AND PRESSURE INFORMATIONS : (FOR GUIDELINE ONLY)

		T/ #1995	T/ #1935	T/ #1120
Max.Peak Temperature : see "special note"	°C	460°C	250°C	300°C
Operating Temperature :	°C	-170°C to 183°C	-29°C to 120°C	-200°C to 260°C
- with Steam :	°C	150°C	-	214°C
Maximum Pressure :	MPa	4MPa	2MPa	4MPa
Test Standard :		Germanischer Lloyd Type Approvals Part 2,Edition 2003 JIS R 3453:2001 API Standard 6FA,Third Edition April 1999 DIN EN 1797:2002-02 (BAM) VDI Guide Line 2440 (Edition Nov.2000)	Germanischer Lloyd Type Approvals Part 2, Edition 2003 JIS R 3453:2001	JIS R 3453:2001 ASME B16.21-1992 VDI Guide Line2440 TA Luft (Edition Nov.2000) API Standard 6FA,Third Edition April.1999 *Tested*
		Max. peak temp test data obtained from: Based on API Standard 6FA,Third Edition, April 1999, test reported by Yarmouth Research and Technology, USA dated 12/28/2006 shown as < Temperature vs Time Chart > (Cal.Block1 & Cal.Block 2 test time-min:sec) The gasket maintained within API 6FA criteria.	Max. peak temp test data obtained from: NICHIAS Lab,test report dated 14 Nov.06 Heat-cycle testing under ambient temperature leakage test 250°C x 5hours x 8 cycles 0.6ml/10min. Well maintained sealing function.	Max. peak temp test data obtained from: Based on German standard DIN 52913, resp. BS7531, tested by MPA Stuttgart Otto-Graf-Institut dated 23/01/2007 test temp.at 300°C 16 hours.

Special Note:

The figures shown as Max. Peak Temperature are just for reference only.
The above data shown in Max. Peak Temperature is based on the actual test conducted by Internationally acclaimed inspection institutions or by NICHIAS's laboratory.
Max. Peak Temperature is only for a certain period of time.
The Operating Temperature shows just the recommended range only. In the actual application, the technical advice is needed from the view points of various conditions, like flange type, fluids, pressure etc.