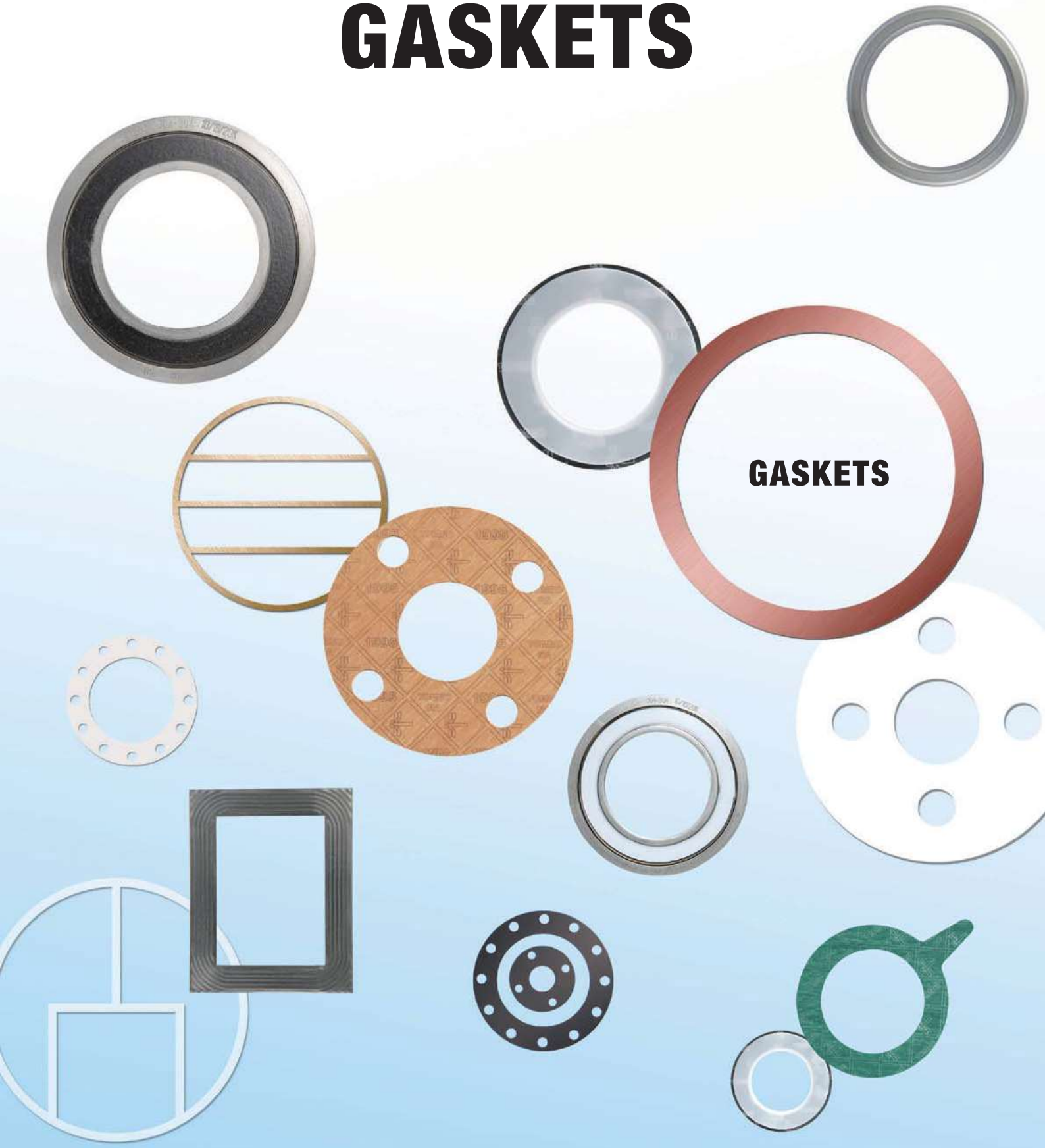
NICHIAS

TOMBO™ BRAND

GASKETS



NICHIAS

Comparison of jointing sheets

Product name / Features / Construction / Service range (*Be sure to read the precautions concerning gas-type fluids.) / Lineup

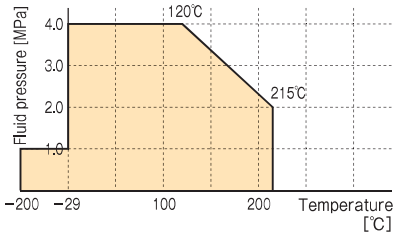
TOMBO™ No. 1120

CLINSIL™ Top

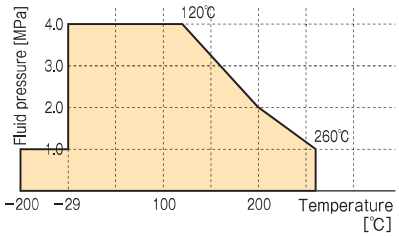
- Because the main constituent of this gasket is expanded graphite, it has excellent heat resistance, steam resistance, and corrosion resistance.
- Scratch resistant and flexible
- Can be used with relatively high temperature flanges, valves and equipment.

Main constituents: NBR, aramid fibers, expanded graphite

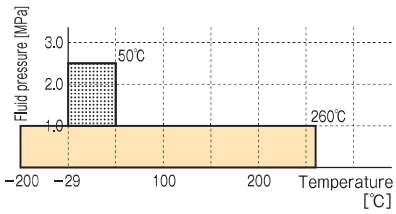
Water-type fluid



Oil-type fluid



Gas-type fluid

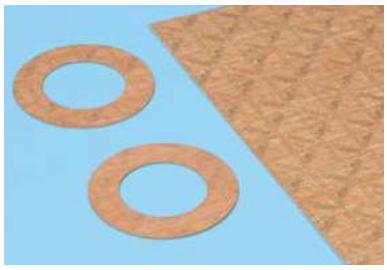


Regarding the ▦ area, study it carefully before use.

TOMBO™ No.1120-LN
This gasket is intended for use with low-temperature fluids, such as LNG. It is the TOMBO™ No.1120 which has been specially treated.

TOMBO™ No. 1995

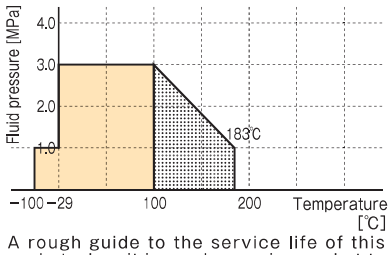
CLINSIL™ Brown



- Standard grade jointing sheet
- Large-size gasket available
  Can be manufactured without joints to a maximum of 3810 × 3810mm (9S size).
- Can be used with relatively low temperature flanges, valves and equipment.

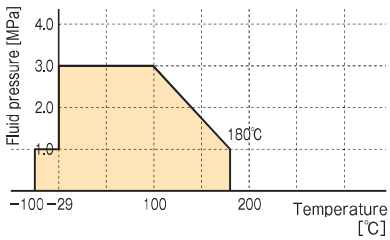
Main constituents: NBR, aramid fibers, inorganic fibers

Water-type fluid



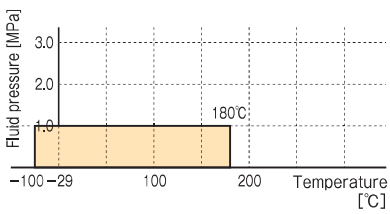
A rough guide to the service life of this gasket when it is used as a pipe gasket to seal steam of 100℃ or higher is as follows.
▦ area: 1–2 years

Oil-type fluid



*Do not use this gasket with aromatic fluids.

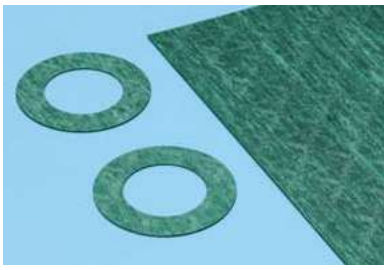
Gas-type fluid



TOMBO™ No.1995-W CLINSIL™ White
This is a white jointing sheet that has the same performance as the TOMBO™ No.1995.

TOMBO™ No. 1993

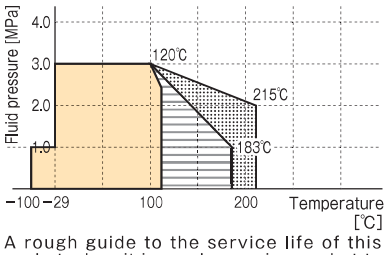
CLINSIL™ Super



- This gasket has excellent heat resistance and steam resistance, making it suitable for use in a steam line.

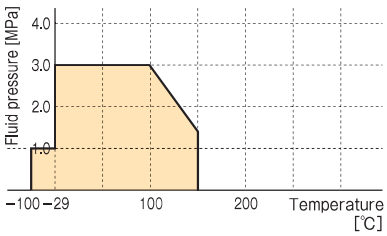
Main constituents: Specially blended rubber, aramid fibers, inorganic filler

Water-type fluid



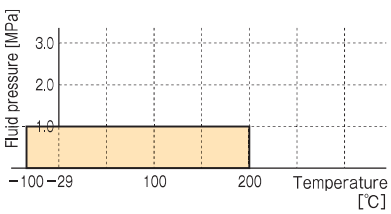
A rough guide to the service life of this gasket when it is used as a pipe gasket to seal steam of 100℃ or higher is as follows.
▦ area: 5–10 years ▦ area: 1–2 years

Oil-type fluid



*Do not use this gasket with aromatic fluids.

Gas-type fluid



⚠ Do not use TOMBO™ No.1993 for gas type fluids where even minute amounts of leakage are not allowed. Even for use with the water- or oil-type fluid, be sure to use paste when carrying out an airtightness test. It is recommended to use TOMBO™ No.1133 or TOMBO™ No.1120 instead.

■ Design criteria

TOMBO™ No.			1120	1995	1993
Gasket coefficient m [—]		0.8 t	3.50		
		1.5 t	2.75		
		3.0 t	2.00		
Minimum design seating stress y [N/mm²]		0.8 t	44.8		
		1.5 t	25.5		
		3.0 t	11.0		
Minimum seating stress σ_3 [N/mm²]		Water-type and oil-type fluids	14.7		
		Gas-type fluids	34.3 (1)		
Allowable seating stress [N/mm²]	Without paste	0.8 t	294.2		
		1.5 t	196.1		
		3.0 t	98.0	147.1	
	With paste	0.8 t	68.6 (2)		
		1.5 t			
		3.0 t			

Note : (1) Use of gaskets with thickness of 3.0t for gas-type fluid is not recommended.
(2) 58.8N/mm² when anti-corrosion paste is used.

■ Standard dimensions

TOMBO™ No.		1120	1995	1993	1991-NF	1938
1S (1270×1270mm)	0.4 t	●	—	—	●	—
	0.5 t	●	—	●	●	—
	0.8 t	●	●	●	●	—
	1.0 t	●	●	●	●	●
	1.5 t	●	●	●	●	●
	2.0 t	●	●	●	—	●
	3.0 t	●	●	●	—	—
3S (1270×3810mm)	0.4 t	●	—	—	●	—
	0.5 t	●	—	●	●	—
	0.8 t	●	●	●	●	—
	1.0 t	●	●	●	●	—
	1.5 t	●	●	●	●	—
	2.0 t	●	●	●	—	—
	3.0 t	●	●	●	—	—
6S (2540×3810mm)	0.8 t	●	—	—	—	—
	1.0 t	●	●	—	—	—
	1.5 t	●	●	—	—	—
	2.0 t	●	●	—	—	—
	3.0 t	●	●	—	—	—
9S (3810×3810mm)	0.8 t	—	—	—	—	—
	1.0 t	—	—	—	—	—
	1.5 t	—	●	—	—	—
	2.0 t	—	●	—	—	—
	3.0 t	—	●	—	—	—
Weight [kg] per sheet of thickness 1.5t and 1S size (reference)		3.63	4.35	4.23	3.75	4.35

＊The above are standard dimensions. We can also manufacture some sheets that are not marked ●. For details, please contact us.

■ Typical physical properties

TOMBO™ No.			1120	1995	1993	1991-NF	1938
Sample thickness [mm]			1.5	1.5	1.5	1.0	1.5
Tensile strength [N/mm²]			27.5	24.1	14.7	26.2	21.6
Compresibility [%]		34.3N/mm²	9	7	7	6	7
Recovery [%]			70	65	52	67	55
Oil resistance	IRM903 oil 150℃×5h	Thickness increase ratio [%]	2	3	24	1	1
		Tensile strength reduction ratio [%]	11	23	33	−1	0
	IRM903 oil 40℃×48h	Thickness increase ratio [%]	—	4	—	1	—
		Tensile strength reduction ratio [%]	—	4	—	6	—
		Compression ratio [%]	—	6	—	6	—
		Recovery [%]	—	64	—	73	—
Resistance to fuel oil	ASTM Fuel B (JIS fuel oil B) R.T.×5h	Thickness increase ratio [%]	2	4	18	3	3
		Mass increase ratio [%]	1	6	17	5	4
Stress relaxation ratio [%]		100℃×22h	25	28	20	15	26
Density [g/cm³]			1.53	1.84	1.71	1.62	1.80

＊The above values are measured values. They are not standard values.