

GASKET MATERIAL CHARACTERISTICS

EN 13555

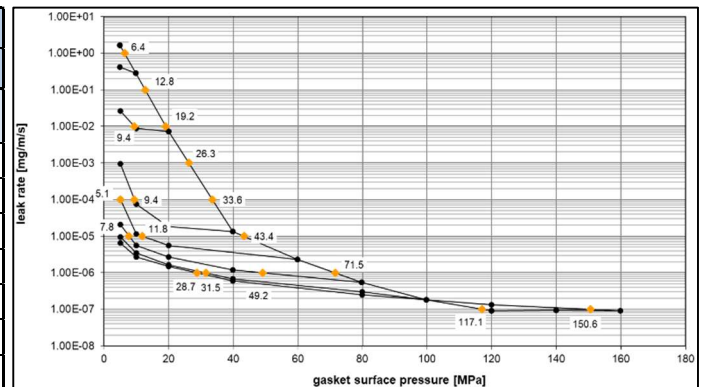
Gasket type: **TESNIT[®] BA-KTW-G**
Composition: Mineral and aramid fibers, NBR
Dimensions: $\phi 49 \times \phi 92 \times 2.0$ mm

Maximum allowed surface pressure & Relaxation factor

T [°C]	Q _{Smax} [MPa]	Stiffness [500 kN/mm]			
		P _{QR} [/]			
		30 MPa	50 MPa	70 MPa	Q _{Smax}
20	220	0.947	0.968	0.970	0.979
50	200	0.888	0.897	0.886	0.915
100	160	0.770	0.723	0.662	0.678 ¹
150	140	0.703	0.663	0.609	0.574 ¹
200	120	0.636	0.612	0.575	0.550 ¹

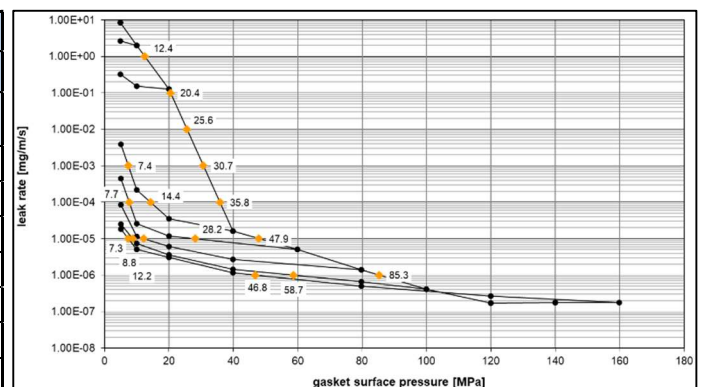
Leakage; ambient temperature, internal pressure 10 bar

Tightness Class L	Q _{min/L} [MPa]	Q _{Smin/L} [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	6	5	5	5	5	5	5	5
L _{0.1}	13		5	5	5	5	5	5
L _{0.01}	19		9	5	5	5	5	5
L _{0.001}	26			5	5	5	5	5
L _{0.0001}	34			9	5	5	5	5
L _{0.00001}	43				12	12	5	5
L _{0.000001}	72					49	32	29
L _{0.0000001}	117							151



Leakage; ambient temperature, internal pressure 16 bar

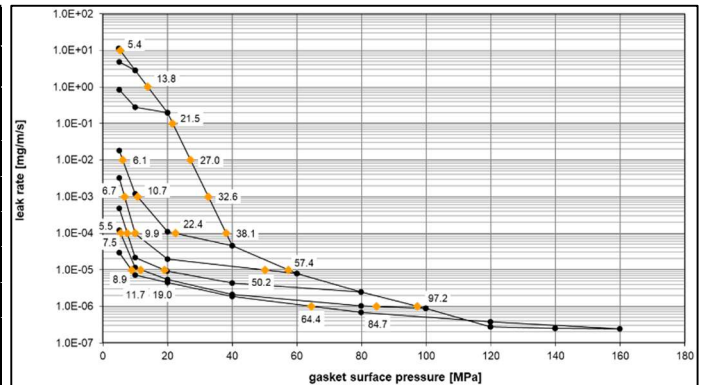
Tightness Class L	Q _{min/L} [MPa]	Q _{Smin/L} [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	12		5	5	5	5	5	5
L _{0.1}	20			5	5	5	5	5
L _{0.01}	26			5	5	5	5	5
L _{0.001}	31			7	5	5	5	5
L _{0.0001}	36			14	8	5	5	5
L _{0.00001}	48				28	12	9	7
L _{0.000001}	85						58	47



TESNIT® BA-KTW-G

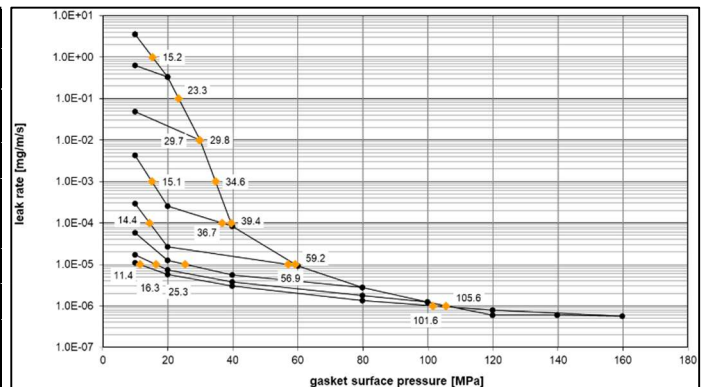
Leakage; ambient temperature, internal pressure 25 bar

Tightness Class L	Q _{min} /L [MPa]	Q _{Smin} /L [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	14		5	5	5	5	5	5
L _{0.1}	22			5	5	5	5	5
L _{0.01}	27			6	5	5	5	5
L _{0.001}	33			11	7	5	5	5
L _{0.0001}	38			22	10	8	6	5
L _{0.00001}	57				50	19	12	9
L _{0.000001}	97						85	64



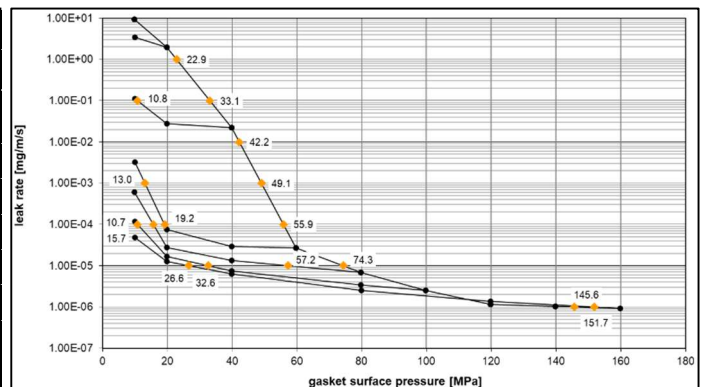
Leakage; ambient temperature, internal pressure 40 bar

Tightness Class L	Q _{min} /L [MPa]	Q _{Smin} /L [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	15		10	10	10	10	10	10
L _{0.1}	23			10	10	10	10	10
L _{0.01}	30			10	10	10	10	10
L _{0.001}	35			15	10	10	10	10
L _{0.0001}	39			37	14	10	10	10
L _{0.00001}	59				57	25	16	11
L _{0.000001}	106							102



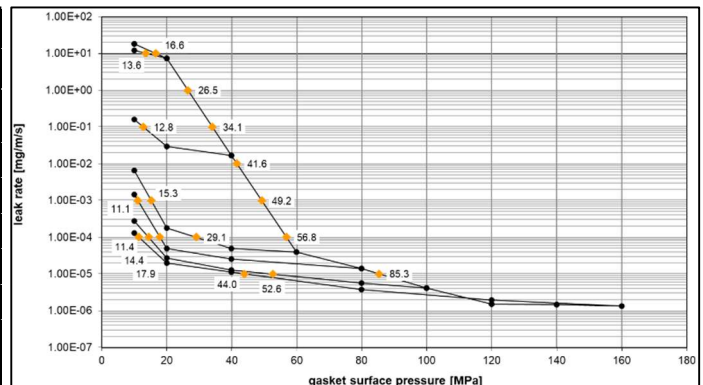
Leakage; ambient temperature, internal pressure 63 bar

Tightness Class L	Q _{min} /L [MPa]	Q _{Smin} /L [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	23			10	10	10	10	10
L _{0.1}	33			11	10	10	10	10
L _{0.01}	42				10	10	10	10
L _{0.001}	49				13	10	10	10
L _{0.0001}	56				19	16	11	10
L _{0.00001}	74					57	33	27
L _{0.000001}	146							152



Leakage; ambient temperature, internal pressure 80 bar

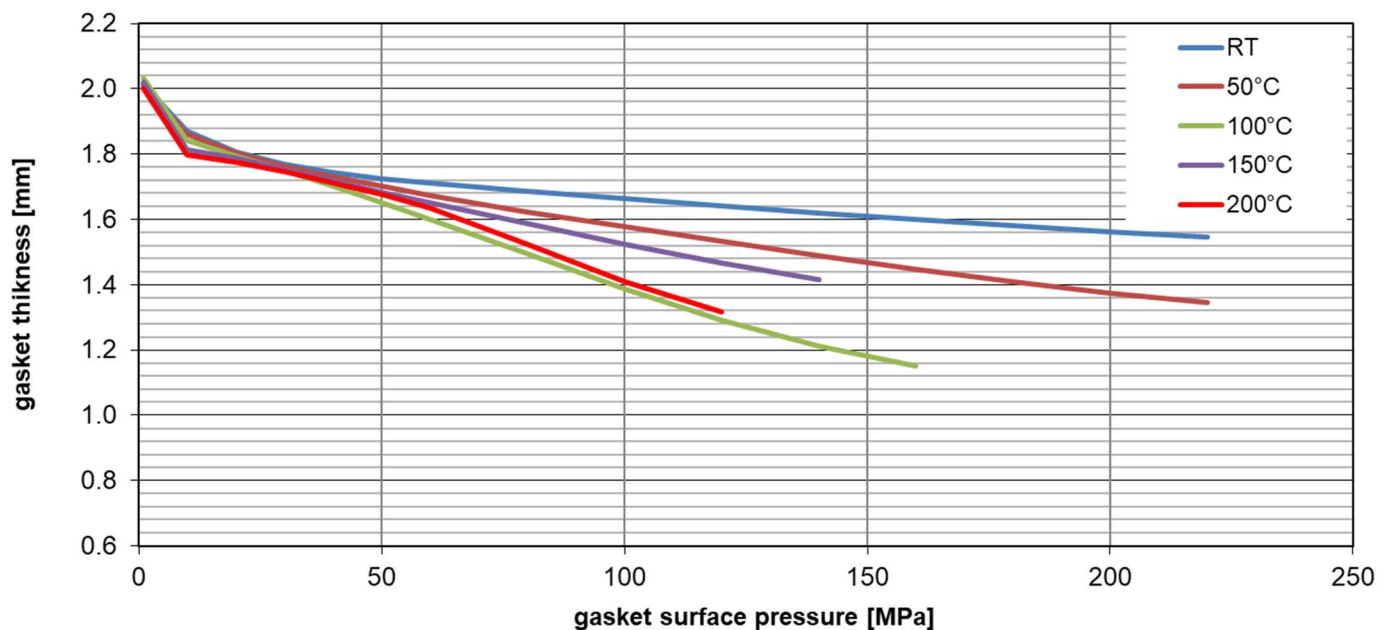
Tightness Class L	Q _{min} /L [MPa]	Q _{Smin} /L [MPa]						
		Q _A [MPa]						
		10	20	40	60	80	100	160
L _{1.0}	17		14	10	10	10	10	10
L _{0.1}	27			13	10	10	10	10
L _{0.01}	34				10	10	10	10
L _{0.001}	42				10	10	10	10
L _{0.0001}	49				15	11	10	10
L _{0.00001}	57				29	18	14	11
L _{0.000001}	85						53	44



TESNIT® BA-KTW-G

Modulus of elasticity

Q [MPa]	Temp. [20 °C]		Temp. [50 °C]		Temp. [100 °C]		Temp. [150 °C]		Temp. [200 °C]	
	E _G [MPa]	e _G [mm]	E _G [MPa]	e _G [mm]	E _G [MPa]	e _G [mm]	E _G [MPa]	e _G [mm]	E _G [MPa]	e _G [mm]
1		2.014		2.010		2.032		2.021		2.002
10	444	1.871	437	1.860	1010	1.842	1878	1.813	3931	1.797
20	942	1.807	889	1.803	1543	1.794	1799	1.787	1892	1.774
30	1554	1.769	1477	1.761	2241	1.751	2191	1.754	2161	1.745
40	2324	1.743	2325	1.731	3222	1.702	2657	1.718	2513	1.713
50	3126	1.725	3095	1.703	3642	1.652	3070	1.684	2598	1.676
60	3846	1.710	3793	1.674	4227	1.600	3204	1.650	2834	1.636
80	4819	1.687	4795	1.624	4613	1.494	3963	1.587	3547	1.524
100	5438	1.663	5721	1.577	4752	1.385	4640	1.524	3944	1.410
120	5993	1.640	6199	1.532	5596	1.290	4795	1.465	4285	1.317
140	6353	1.619	6550	1.488	5425	1.212	5440	1.415		
160	6688	1.599	7021	1.447	5878	1.151				
180	6992	1.580	7008	1.409						
200	7271	1.562	7415	1.375						
220	7530	1.545								



Friction coefficient

$\mu_G = 0.30^*$

* The friction coefficient between gasket and flange surface was determined as part of an ESA project. TSNIT® BA-KTW-G is a fiber-based gasket sheet material. Specified friction coefficient corresponds to category "Fiber-based gaskets".

Symbols used

e_G – Compressed gasket thickness

E_G – Modulus of elasticity of the gasket

P_{QR} – Relaxation ratio

Q_A – Gasket surface pressure at assembly prior to unloading

Q_{Smax} – Maximum applicable gasket surface pressure

Q_{Smin/L} – Minimum gasket surface pressure to seal at assembly

Q_{Smin/L} – Minimum gasket surface pressure to seal after off-loading

¹ – Bore intrusion

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All information data quoted are based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behavior in a gasket joint. The provided data may therefore not be construed as a warranty. Whenever in doubt, our staff will be pleased to assist you in finding the optimum sealing solution.

This edition cancels all previous issues and is subject to change without notice.