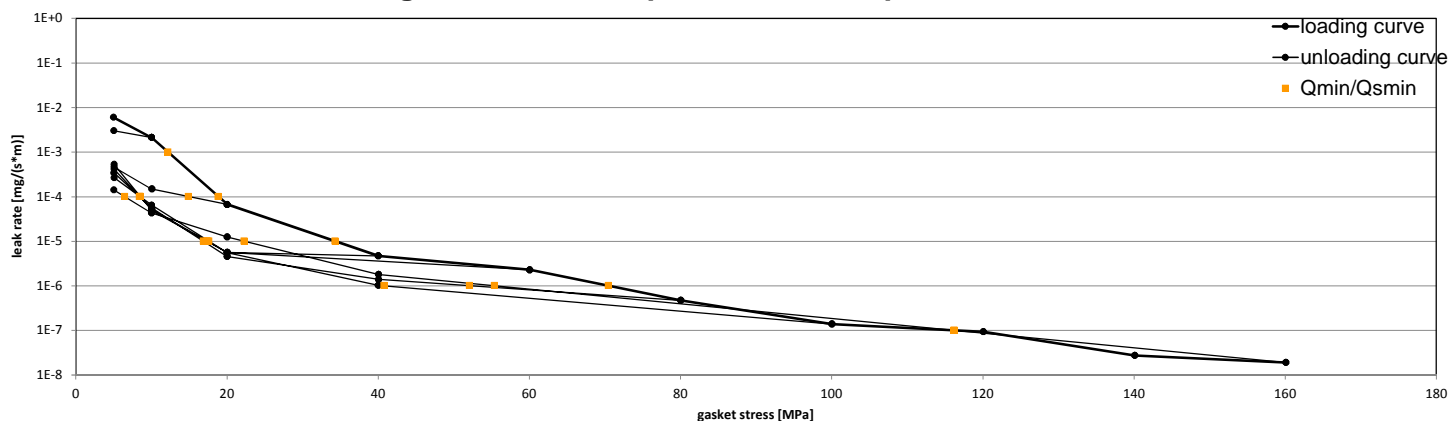


Company Address	Kempchen Dichtungstechnik, Im Waldeich 21, 46147 Oberhausen, Germany
Gasket Type	Corrugated gasket W1A-3 - Graphite (1.4571 / 0,8 mm; D 1,0 g/cm <sup>3</sup> )
Sealing element dimensions [mm]	49 x 51 / 86 x 92 x 2.9 (referring to DIN 1514)

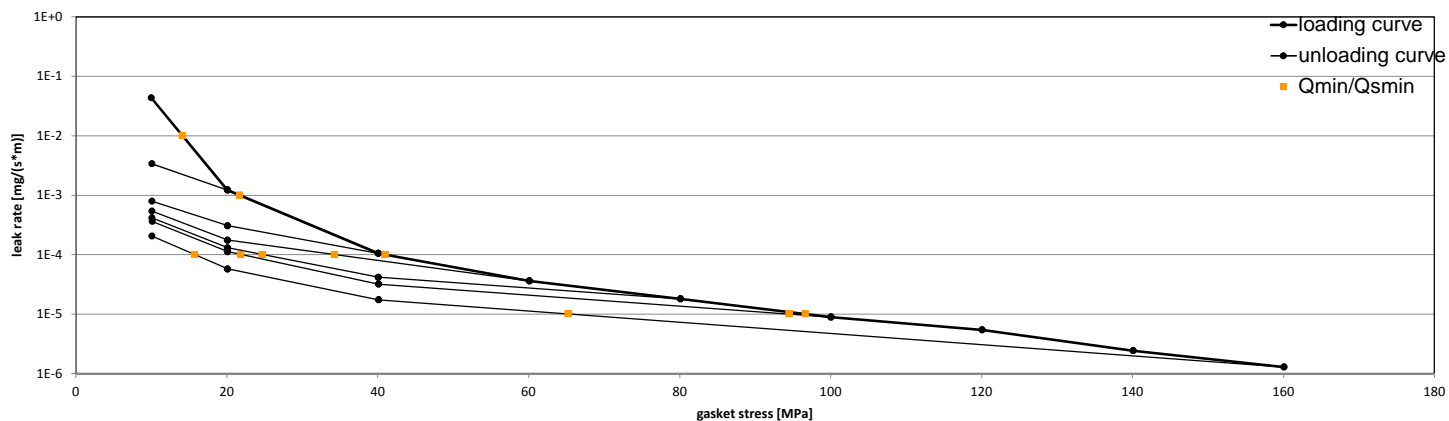
L [mg/(s*m)]	Q <sub>min/L</sub> [MPa]	Minimum stress to seal Q <sub>min/L</sub> (at assembly), Q <sub>Smin/L</sub> (after off-loading) for p = 10 bar										
		Q <sub>Smin/L</sub> [MPa]										
		Q <sub>A</sub> = 10 MPa	Q <sub>A</sub> = 20 MPa	Q <sub>A</sub> = 40 MPa	Q <sub>A</sub> = 60 MPa	Q <sub>A</sub> = 80 MPa	Q <sub>A</sub> = 100 MPa	Q <sub>A</sub> = 120 MPa	Q <sub>A</sub> = 140 MPa	Q <sub>A</sub> = 160 MPa		
10 <sup>-0</sup>	5	5	5	5	5	5	5			5		
10 <sup>-1</sup>	5	5	5	5	5	5	5			5		
10 <sup>-2</sup>	5	5	5	5	5	5	5			5		
10 <sup>-3</sup>	12		5	5	5	5	5			5		
10 <sup>-4</sup>	19		15	9	8	8	9			6		
10 <sup>-5</sup>	34			17	17	17	18			22		
10 <sup>-6</sup>	70					52	41			55		
10 <sup>-7</sup>	116									116		
10 <sup>-8</sup>												

### Leakage - ambient temperature / inner pressure = 10 bar



L [mg/(s*m)]	Q <sub>min/L</sub> [MPa]	Minimum stress to seal Q <sub>min/L</sub> (at assembly), Q <sub>Smin/L</sub> (after off-loading) for p = 40 bar										
		Q <sub>Smin/L</sub> [MPa]										
		Q <sub>A</sub> = 20 MPa	Q <sub>A</sub> = 40 MPa	Q <sub>A</sub> = 60 MPa	Q <sub>A</sub> = 80 MPa	Q <sub>A</sub> = 100 MPa	Q <sub>A</sub> = 120 MPa	Q <sub>A</sub> = 140 MPa	Q <sub>A</sub> = 160 MPa			
10 <sup>-0</sup>	10	10	10	10	10	10				10		
10 <sup>-1</sup>	10	10	10	10	10	10				10		
10 <sup>-2</sup>	14	10	10	10	10	10				10		
10 <sup>-3</sup>	22		10	10	10	10				10		
10 <sup>-4</sup>	41			34	25	22				16		
10 <sup>-5</sup>	97					95				65		
10 <sup>-6</sup>												
10 <sup>-7</sup>												
10 <sup>-8</sup>												

### Leakage - ambient temperature / inner pressure = 40 bar



Note: the content of darkened cells was not determined respectively is unnecessary

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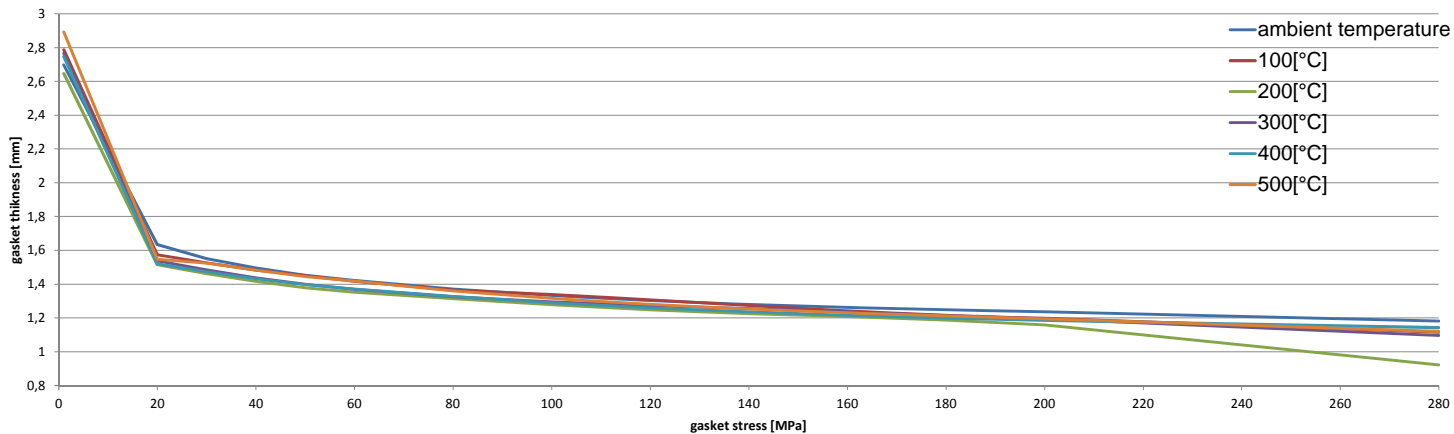
Company Address	Kempchen Dichtungstechnik, Im Waldteich 21, 46147 Oberhausen, Germany
Gasket Type	Corrugated gasket W1A-3 - Graphite (1.4571 / 0,8 mm; D 1,0 g/cm <sup>3</sup> )
Sealing element dimensions [mm]	49 x 51 / 86 x 92 x 2.9 (referring to DIN 1514)

Relaxation ratio $P_{QR}$ for stiffness $C = 500$ kN/mm						
Gasket stress [MPa]	ambient temperature	temperature 1 [100 °C]	temperature 2 [200 °C]	temperature 3 [300 °C]	temperature 4 [400 °C]	temperature 5 [500 °C]
Stress level 1 [30 MPa]	0,99	0,76	0,66	0,59	0,62	0,59
Stress level 2 [50 MPa]	0,99	0,86	0,75	0,72	0,74	0,76
Stress level 3 [90 MPa]	1,00	0,96	0,80	0,84	0,84	0,84
Stress level 4 [180 MPa]	1,00	0,94	0,90	0,89	0,88	0,89
PQR at $Q_{Smax}$	0,99 at 280 MPa	0,95 at 280 MPa	0,92 at 280 MPa	0,92 at 280 MPa	0,93 at 280 MPa	0,91 at 280 MPa

Maximal applicable gasket stress $Q_{Smax}$					
$Q_{Smax}$ [MPa] ambient temperature	$Q_{Smax}$ [MPa] – temperature 1 [100 °C]	$Q_{Smax}$ [MPa] – temperature 2 [200 °C]	$Q_{Smax}$ [MPa] – temperature 3 [300 °C]	$Q_{Smax}$ [MPa] – temperature 4 [400 °C]	$Q_{Smax}$ [MPa] – temperature 5 [500 °C]
280	280	280	280	280	280

Sekant unloading modulus of the gasket $E_G$ [MPa] and gasket thickness $e_G$ [mm]												
Gasket stress [MPa]	ambient temperature		temperature 1 [100 °C]		temperature 2 [200 °C]		temperature 3 [300 °C]		temperature 4 [400 °C]		temperature 5 [500 °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]	$E_G$ [MPa]	$e_G$ [mm]
1		2,699		2,788		2,647		2,766		2,748		2,892
20	891	1,634	1220	1,573	1323	1,514	1775	1,538	2682	1,520	2229	1,547
30	1843	1,550	1336	1,526	1427	1,461	3643	1,484	5023	1,473	6079	1,524
40	2694	1,495	1977	1,482	1830	1,415	8408	1,437	5217	1,431	4334	1,482
50	2209	1,452	2484	1,450	2288	1,379	4429	1,398	5052	1,397	3919	1,446
60	3116	1,422	2255	1,416	3367	1,353	4401	1,368	10463	1,371	6707	1,418
80	3982	1,370	2726	1,366	4322	1,314	6546	1,325	11406	1,327	5305	1,359
100	6273	1,334	5576	1,339	3552	1,278	7623	1,295	10663	1,288	5241	1,315
120	5524	1,303	4184	1,307	3992	1,247	9026	1,272	16072	1,259	6151	1,280
140	7044	1,281	4543	1,275	4953	1,226	10829	1,254	9475	1,236	6423	1,254
160	8015	1,263	4787	1,242	7069	1,207	8471	1,236	8330	1,215	5326	1,230
180	7863	1,25	5998	1,22	7597	1,187	9370	1,214	9720	1,199	6015	1,212
200	9697	1,24	9368	1,20	6063	1,159	13371	1,194	9221	1,185	6234	1,194
280	8389	1,182	10639	1,116	10279	0,922	12185	1,096	8430	1,143	6423	1,120

### Gasket thickness $e_G$



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