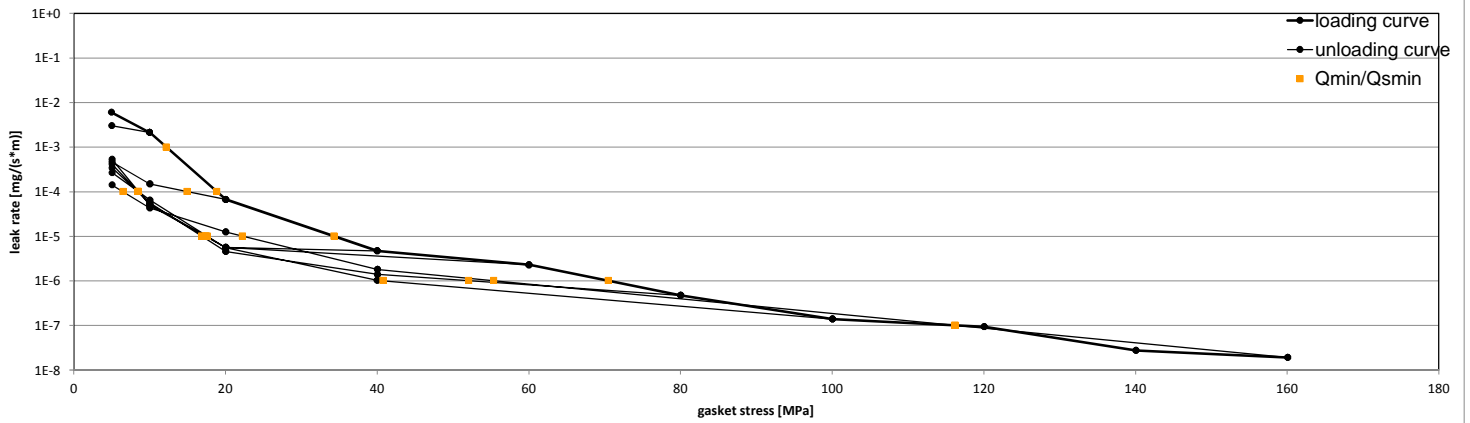


Company Address	Kempchen Dichtungstechnik GmbH, Im Waldteich 21, 46147 Oberhausen, Germany
Gasket Type	Corrugated gasket W1A-3 - Graphite (1.4571 / 0,8 mm; D 1,0 g/cm <sup>3</sup> )
Sealing element dimensions [mm]	49 x 51 / 86 x 92 x 3 (referring to DIN 1514-4)

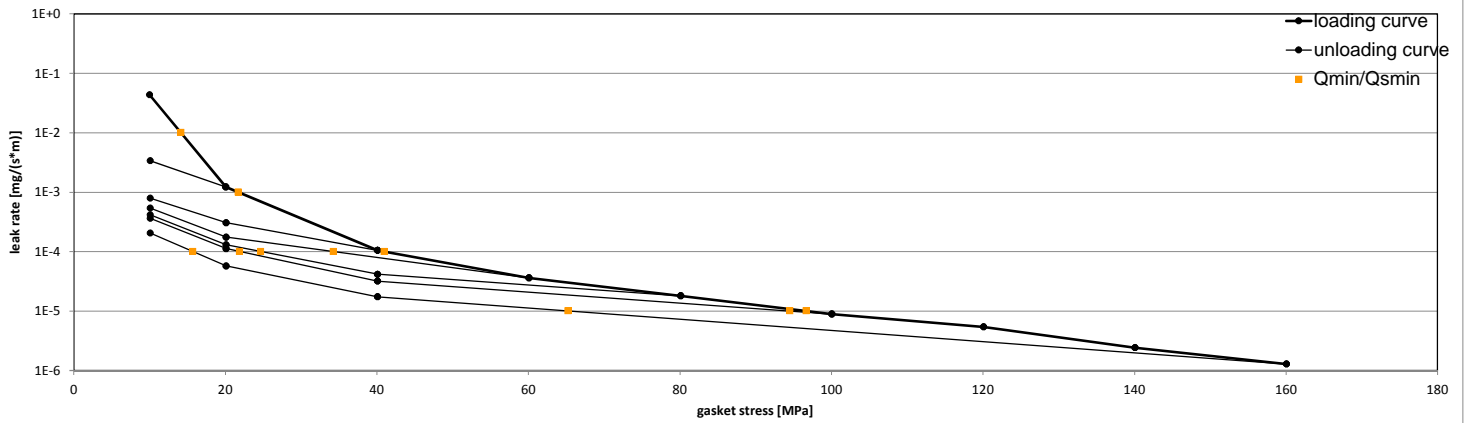
L [mg/(s*m)]	Q <sub>min/L</sub> [MPa]	Minimum stress to seal Q <sub>min/L</sub> (at assembly), Q <sub>Smin/L</sub> (after off-loading) for p = 10 bar										
		Q <sub>Smin/L</sub> [MPa]										
		Q <sub>A</sub> = 10 MPa	Q <sub>A</sub> = 20 MPa	Q <sub>A</sub> = 40 MPa	Q <sub>A</sub> = 60 MPa	Q <sub>A</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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Center of Sealing Technologies, Bürgerkamp 3, 48565 Steinfurt, Germany

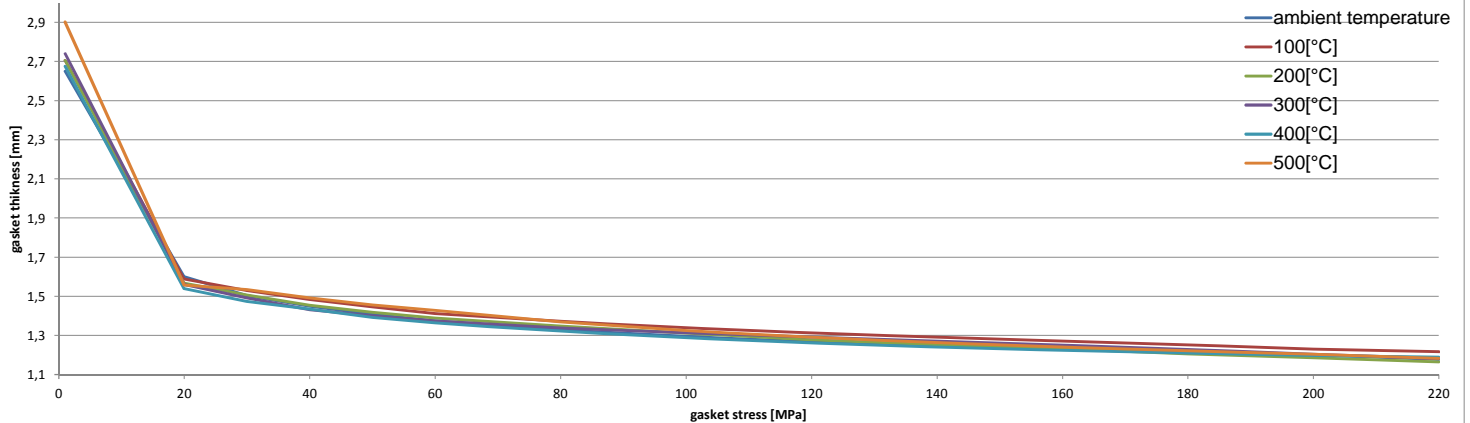
Company Address	Kempchen Dichtungstechnik GmbH, Im Waldteich 21, 46147 Oberhausen, Germany
Gasket Type	Corrugated gasket W1A-3 - Graphite (1.4571 / 0,8 mm; D 1,0 g/cm <sup>3</sup> )
Sealing element dimensions [mm]	49 x 51 / 86 x 92 x 3 (referring to DIN 1514-4)

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]
0		2,721		2,717		2,716		2,762		2,689		
1		2,650		2,705		2,705		2,740		2,675		2,902
20	1279	1,599	1518	1,587	2905	1,567	2200	1,560	2380	1,539	2229	1,557
30	1648	1,503	2276	1,530	3246	1,506	3027	1,491	2502	1,473	6079	1,534
40	2315	1,450	2245	1,483	3124	1,454	2972	1,431	4199	1,434	4335	1,492
50	3274	1,409	2533	1,446	3719	1,418	3261	1,400	2994	1,392	3919	1,456
60	2472	1,374	2225	1,412	3608	1,389	3106	1,374	6583	1,365	6708	1,428
80	4914	1,328	3991	1,372	5156	1,348	4927	1,338	7969	1,321	5305	1,369
100	4184	1,295	4511	1,340	4830	1,312	4844	1,313	5614	1,287	5242	1,325
120	4650	1,268	4280	1,311	4409	1,277	4755	1,290	8277	1,262	6151	1,290
140	4972	1,247	5790	1,292	6758	1,252	5298	1,272	8368	1,241	6424	1,264
160	5652	1,230	5808	1,271	7220	1,231	5148	1,249	6526	1,223	5326	1,240
180	5944	1,22	4952	1,25	6147	1,205	6097	1,228	6695	1,208	6015	1,222
200	5998	1,20	4667	1,23	6593	1,186	5742	1,204	7091	1,197	6234	1,204
220	5587	1,178	5190	1,216	6737	1,165	6110	1,182	8462	1,189	6128	1,183

### Gasket thickness $e_G$



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