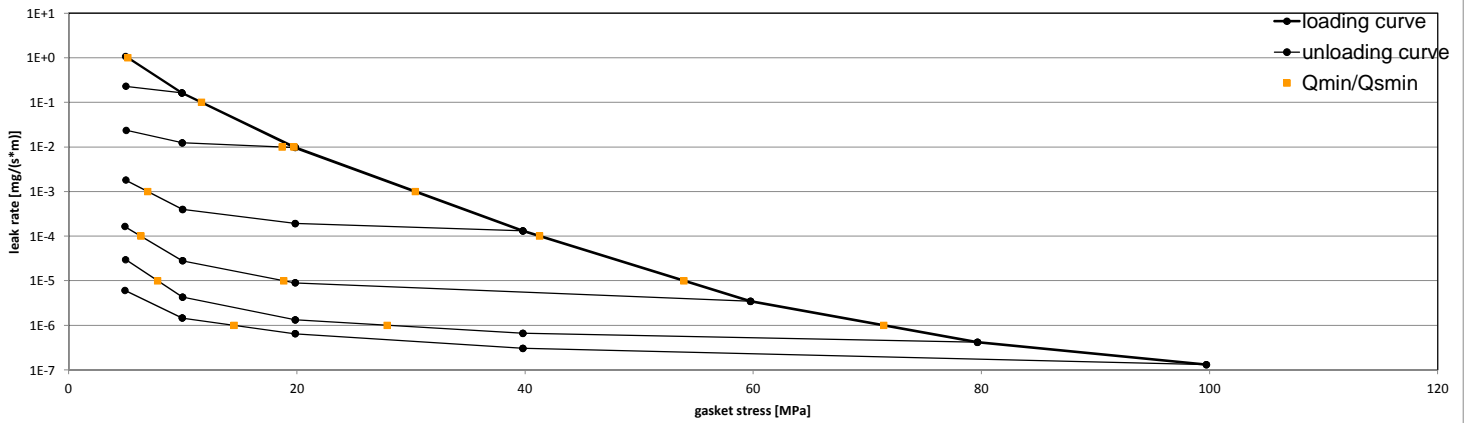


Company Address	KLINGER® GmbH & Co. KG, Richard-Klinger-Straße 37, 65510 Idstein, Germany
Gasket Type	KLINGER® top-sil-ML1
Sealing element dimensions [mm]	92 x 49 x 2

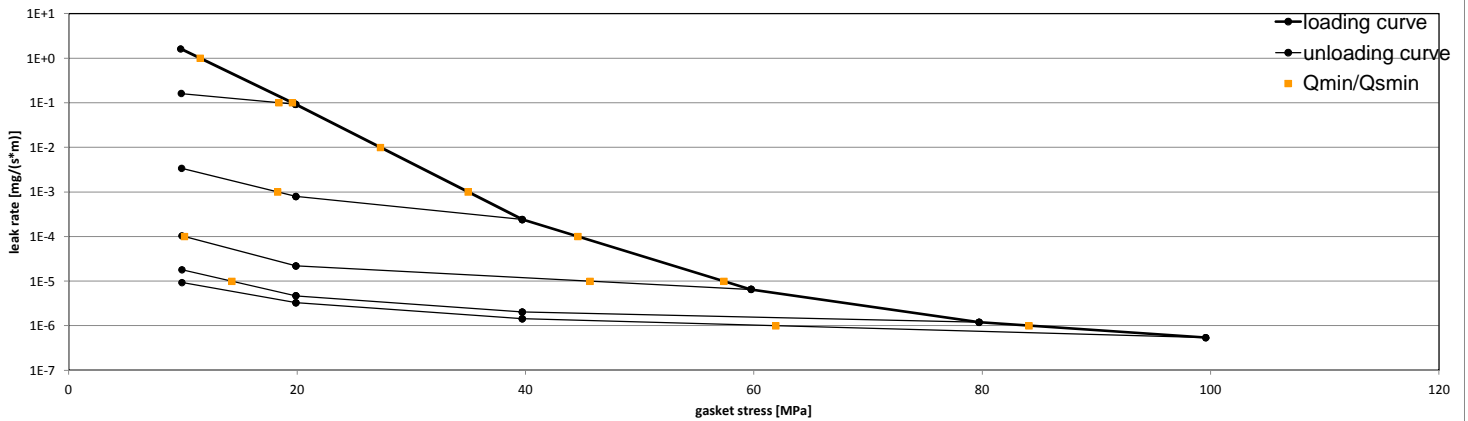
L [mg/(s*m)]	Q <sub>min/L</sub> [MPa]	Minimum stress to seal Q <sub>min/L</sub> (at assembly), Q <sub>Smin/L</sub> (after off-loading) for p = 10 bar									
		Q <sub>Smin/L</sub> [MPa]									
		Q <sub>A</sub> = 10 MPa	Q <sub>A</sub> = 20 MPa	Q <sub>A</sub> = 40 MPa	Q <sub>A</sub> = 60 MPa	Q <sub>A</sub> = 80 MPa	Q <sub>A</sub> = 100 MPa				
10 <sup>-0</sup>	5	5	5	5	5	5	5				
10 <sup>-1</sup>	12		5	5	5	5	5				
10 <sup>-2</sup>	20		19	5	5	5	5				
10 <sup>-3</sup>	30			7	5	5	5				
10 <sup>-4</sup>	41				6	5	5				
10 <sup>-5</sup>	54				19	8	5				
10 <sup>-6</sup>	71					28	15				
10 <sup>-7</sup>											
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					
10 <sup>-0</sup>	12	10	10	10	10	10					
10 <sup>-1</sup>	20	18	10	10	10	10					
10 <sup>-2</sup>	27		10	10	10	10					
10 <sup>-3</sup>	35		18	10	10	10					
10 <sup>-4</sup>	45			10	10	10					
10 <sup>-5</sup>	57			46	14	10					
10 <sup>-6</sup>	84					62					
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

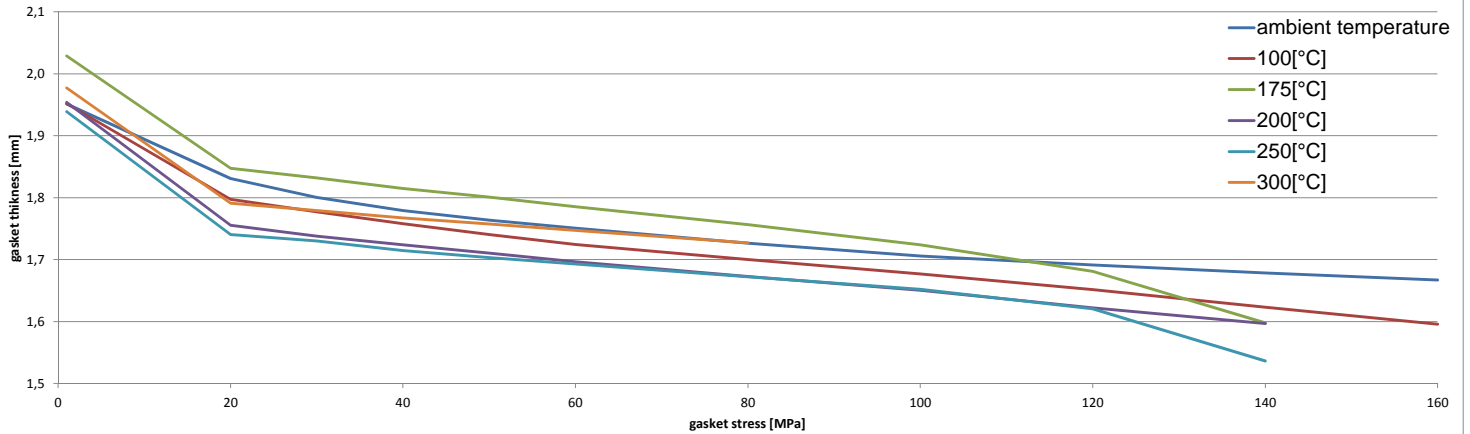
Company Address	KLINGER® GmbH & Co. KG, Richard-Klinger-Straße 37, 65510 Idstein, Germany
Gasket Type	KLINGER® top-sil-ML1
Sealing element dimensions [mm]	92 x 49 x 2

Relaxation ratio $P_{QR}$ for stiffness $C = 500$ kN/mm						
Gasket stress [MPa]	ambient temperature	temperature 1 [100 °C]	temperature 2 [175 °C]	temperature 3 [200 °C]	temperature 4 [250 °C]	temperature 5 [300 °C]
Stress level 1 [30 MPa]	0,95	0,85	0,80	0,80	0,76	0,73
Stress level 2 [50 MPa]	0,96	0,91	0,87	0,85	0,82	0,78
PQR at $Q_{Smax}$	0,99 at 160 MPa	0,92 at 160 MPa	0,81 at 140 MPa	0,80 at 140 MPa	0,75 at 140 MPa	0,80 at 80 MPa

Maximal applicable gasket stress $Q_{Smax}$					
$Q_{Smax}$ [MPa] ambient temperature	$Q_{Smax}$ [MPa] – temperature 1 [100 °C]	$Q_{Smax}$ [MPa] – temperature 2 [175 °C]	$Q_{Smax}$ [MPa] – temperature 3 [200 °C]	$Q_{Smax}$ [MPa] – temperature 4 [250 °C]	$Q_{Smax}$ [MPa] – temperature 5 [300 °C]
160	160	140	140	140	80

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 [175 °C]		temperature 3 [200 °C]		temperature 4 [250 °C]		temperature 5 [300 °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												
1		1,952		1,952		2,029		1,954		1,939		1,977
20	1281	1,831	1650	1,797	2509	1,847	2524	1,755	3451	1,740	4045	1,791
30	1684	1,800	2220	1,777	3079	1,832	3147	1,738	5910	1,730	3429	1,779
40	2578	1,779	3080	1,758	3373	1,815	5289	1,724	5010	1,714	3727	1,767
50	4311	1,764	3247	1,740	5206	1,801	9247	1,711	6376	1,703	4674	1,757
60	5287	1,751	3969	1,725	4678	1,785	8515	1,697	9826	1,693	5562	1,747
80	5574	1,727	5758	1,700	5602	1,757	12359	1,673	10461	1,672	5149	1,727
100	7877	1,706	9188	1,677	5403	1,724	16416	1,650	18057	1,652		
120	10775	1,691	6364	1,652	6314	1,681	11991	1,622	11184	1,621		
140	11562	1,678	6959	1,623	5610	1,598	14369	1,597	10471	1,536		
160	10312	1,667	8322	1,596								

### Gasket thickness $e_G$



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