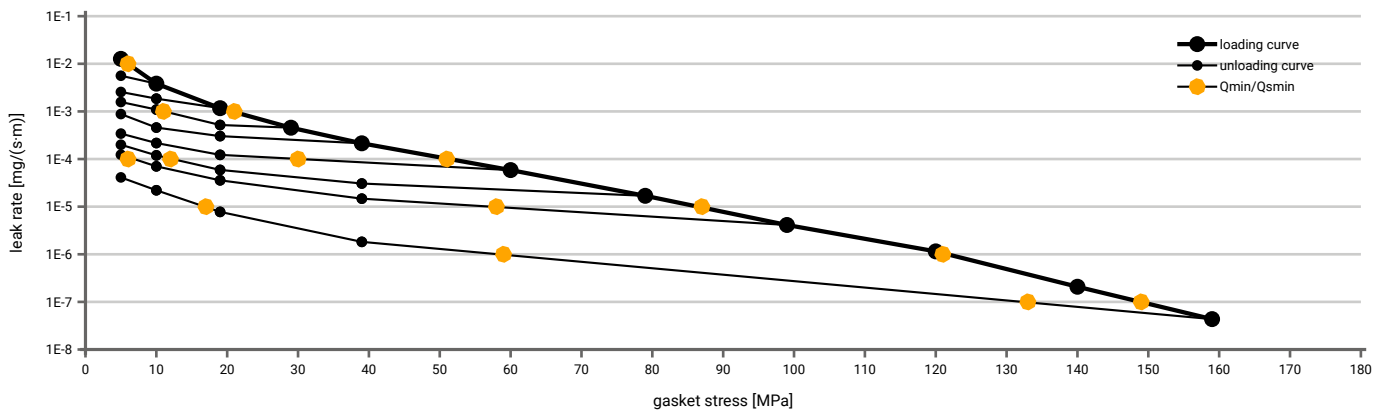
Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to
Product name	Sigraflex Hochdruck Pro V20011Z3I-P	**DIN EN 13555**
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	**2005-2**

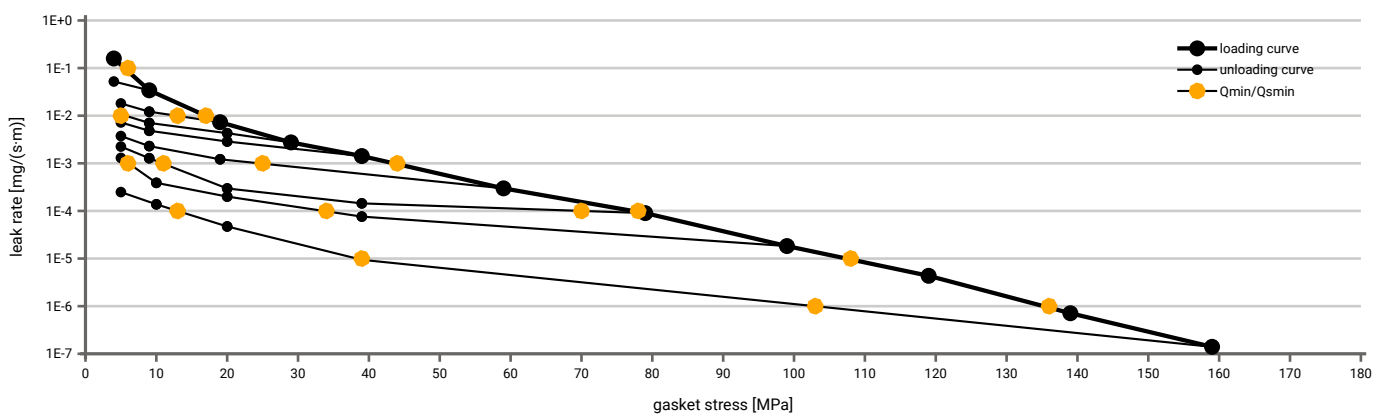
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 10 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]										
		Q_A = 5 [MPa]	Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]	Q_A = 120 [MPa]	Q_A = 140 [MPa]	Q_A = 160 [MPa]
1E-0	5		5	5	5	5	5	5	5			5
1E-1	5		5	5	5	5	5	5	5			5
1E-2	6		5	5	5	5	5	5	5			5
1E-3	22				11	5	5	5	5			5
1E-4	52						31	13	7			5
1E-5	87								58			18
1E-6	122											59
1E-7	149											133
1E-8												



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 40 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]										
		Q_A = 5 [MPa]	Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]	Q_A = 120 [MPa]	Q_A = 140 [MPa]	Q_A = 160 [MPa]
1E-0	5		5	5	5	5	5	5	5			5
1E-1	6		5	5	5	5	5	5	5			5
1E-2	18			14	6	5	5	5	5			5
1E-3	44						25	12	6			5
1E-4	78							71	34			13
1E-5	108											39
1E-6	136											104
1E-7												
1E-8												

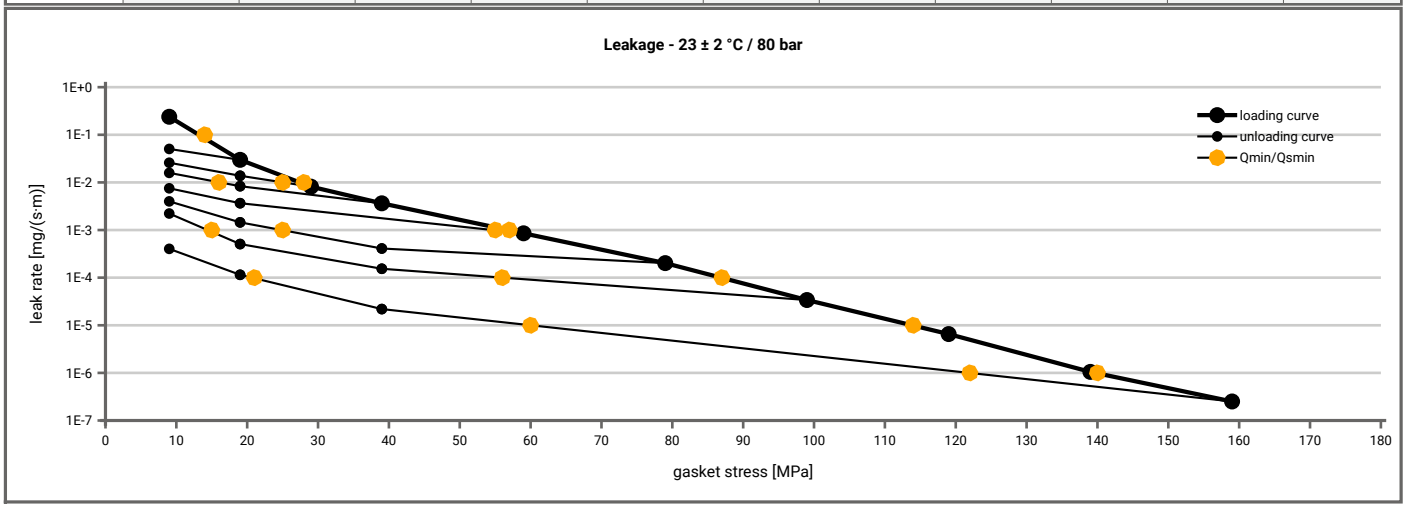


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **2**	Creation date of this sheet: **2012-12-20**

Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to **DIN EN 13555 2005-2**
Product name	Sigraflex Hochdruck Pro V20011Z3I-P	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 80 bar (T = 23 ± 2 °C)

L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]									
		Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 30 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]	Q_A = 120 [MPa]	Q_A = 140 [MPa]	Q_A = 160 [MPa]
1E-0	10		10	10	10	10	10	10			10
1E-1	14		10	10	10	10	10	10			10
1E-2	28			26	17	10	10	10			10
1E-3	58					55	26	15			10
1E-4	88							57			21
1E-5	115										61
1E-6	140										123
1E-7											
1E-8											



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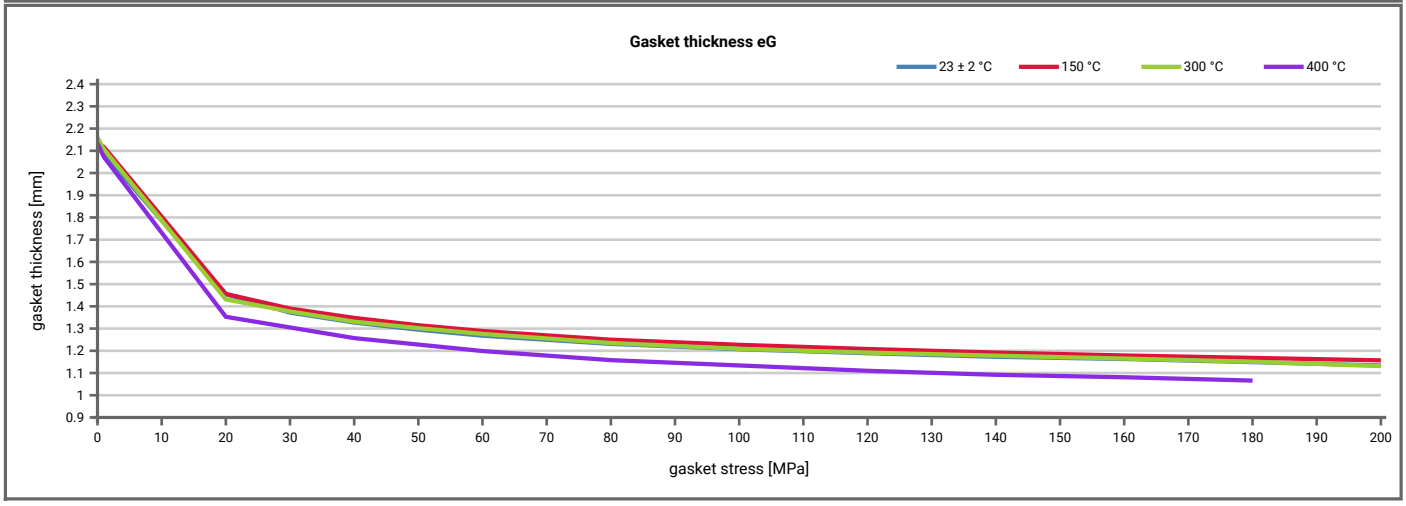
Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to **DIN EN 13555 2005-2**
Product name	Sigraflex Hochdruck Pro V20011Z3I-P	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Relaxation ratio P_{QR} for stiffness C = 500 [kN/mm]										
Gasket stress	**23 ± 2 °C**		**Temperature 1 [150 °C]**		**Temperature 2 [300 °C]**		**Temperature 3 [400 °C]**			
	P_{QR}	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**	**P_{QR}**	**Δe_{Gc} [µm]**
Stress level 1 [30 MPa]	0.97	8	0.95	14	0.91	23	0.92	21		
Stress level 2 [50 MPa]	0.98	10	0.96	17	0.96	17	0.96	19		
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	1.00	0	0.99	17	0.99	17	0.99	15		
Q_{smax}	200 MPa		200 MPa		200 MPa		180 MPa			

Sekant unloading modulus of the gasket E_G [MPa] and gasket thickness e_G [mm]										
Gasket stress [MPa]	**23 ± 2 °C**		**Temperature 1 [150 °C]**		**Temperature 2 [300 °C]**		**Temperature 3 [400 °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]**
0	0	2.119	0	2.139	0	2.159	0	2.134		
1	0	2.086	0	2.117	0	2.107	0	2.072		
20	420	1.454	496	1.456	502	1.431	398	1.353		
30	835	1.372	779	1.390	797	1.377	700	1.305		
40	1060	1.327	1189	1.348	1077	1.331	831	1.257		
50	1503	1.295	1432	1.315	1622	1.302	1364	1.228		
60	1833	1.268	1857	1.289	1903	1.276	1531	1.199		
80	2610	1.231	2331	1.250	2388	1.235	2111	1.158		
100	3899	1.207	4030	1.227	3451	1.209	3095	1.134		
120	7218	1.189	5187	1.208	5072	1.192	3042	1.110		
140	6025	1.173	7330	1.192	7903	1.178	3344	1.092		
160	10285	1.163	7240	1.179	7876	1.165	4693	1.081		
180	9546	1.149	8702	1.168	7243	1.151	4877	1.066		
200	6978	1.134	11071	1.157	5548	1.131				



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