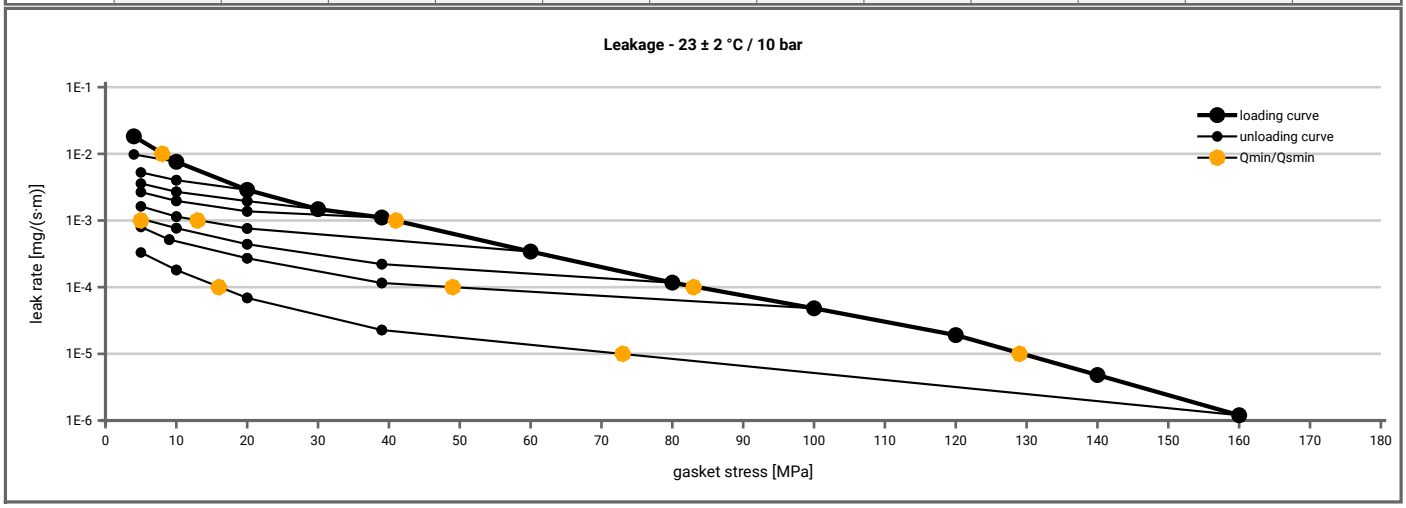
Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to
Product name	Sigraflex Hochdruck V15011Z3I	**DIN EN 13555**
Product dimensions	92 x 49 x 1.5 mm (DIN EN 1514-1 1997-8)	**2005-2**

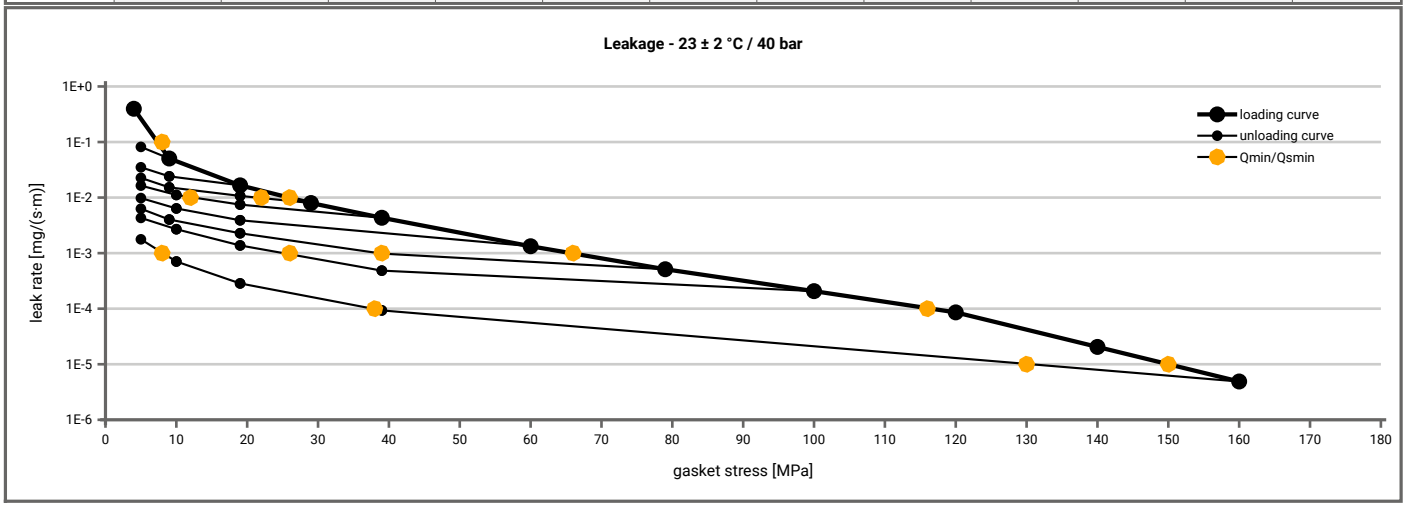
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 10 bar (T = 23 ± 2 °C)

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	8		5	5	5	5	5	5	5			5
1E-3	42						13	6	5			5
1E-4	83								50			16
1E-5	129											74
1E-6												
1E-7												
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	8		5	5	5	5	5	5	5			5
1E-2	27				22	13	5	5	5			5
1E-3	66							39	26			8
1E-4	117											39
1E-5	150											131
1E-6												
1E-7												
1E-8												

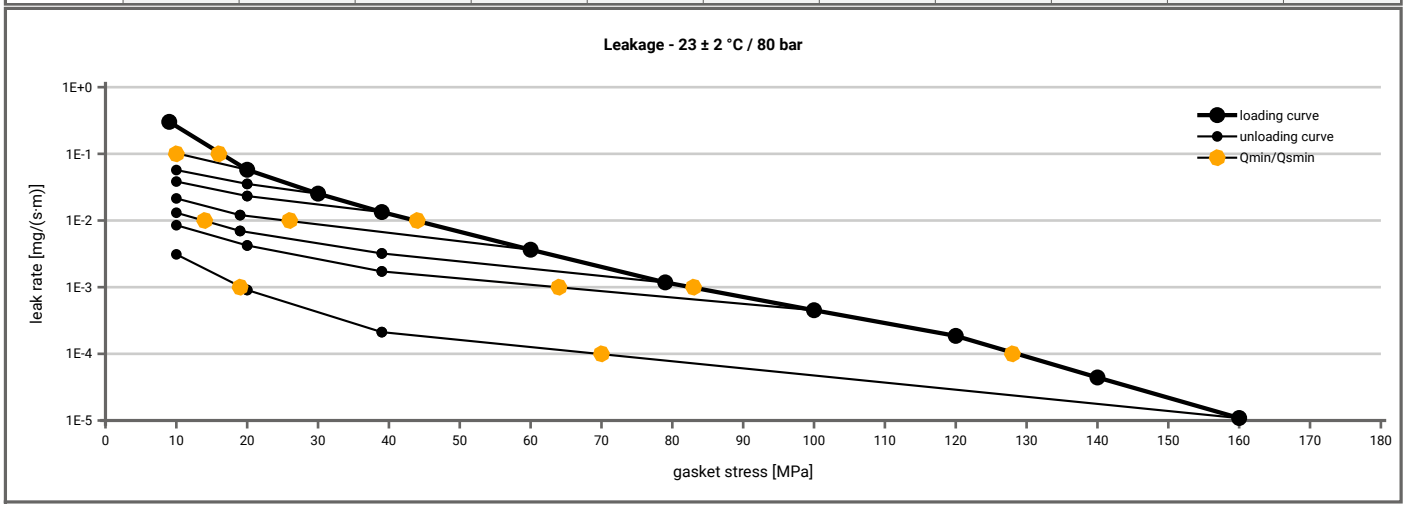


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2012-12-20**

Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to
Product name	Sigraflex Hochdruck V15011Z3I	**DIN EN 13555**
Product dimensions	92 x 49 x 1.5 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 = 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	17		10	10	10	10	10	10			10
1E-2	44					26	14	10			10
1E-3	83							64			19
1E-4	129										70
1E-5											
1E-6											
1E-7											
1E-8											

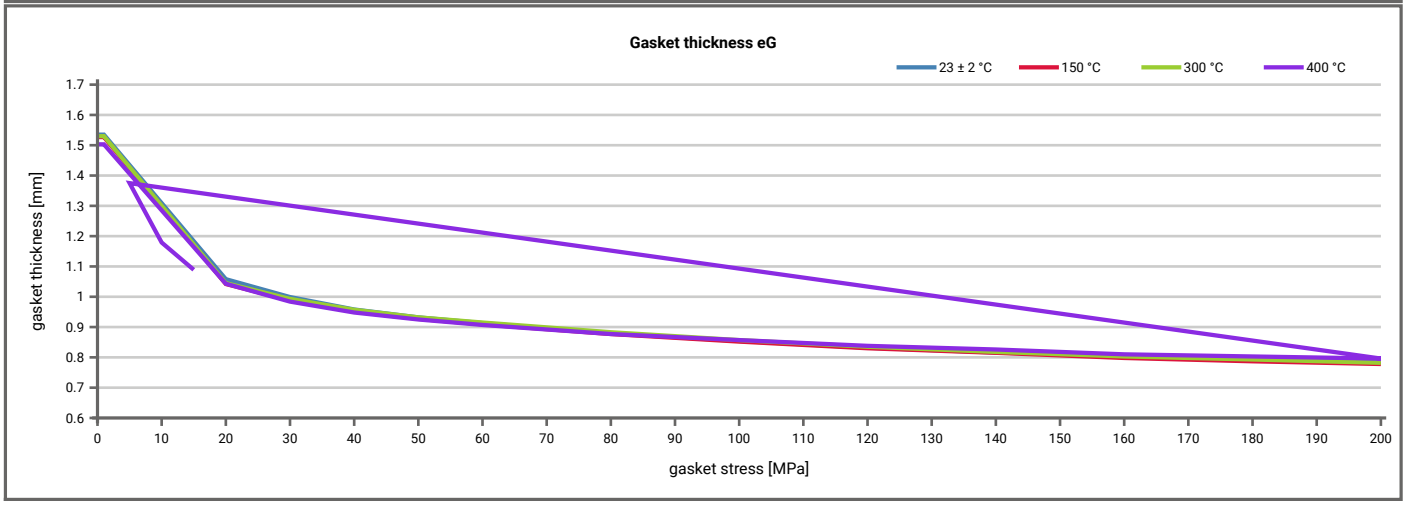


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2012-12-20**

Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to **DIN EN 13555 2005-2**
Product name	Sigraflex Hochdruck V15011Z3I	
Product dimensions	92 x 49 x 1.5 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]	0.98	5	0.96	11	0.95	13	0.91	24		
Stress level 2 [50 MPa]	0.99	4	0.98	10	0.97	15	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	0.98	34		
Q_{smax}	200 MPa		200 MPa		200 MPa		200 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	1.535	0	1.527	0	1.530	0	1.503		
1	0	1.535	0	1.527	0	1.530	0	1.503		
20 / 5	341	1.058	484	1.042	573	1.045	136	1.375		
30 / 10	707	0.999	652	0.988	644	0.993	230	1.179		
40 / 15	743	0.958	828	0.951	875	0.957	339	1.089		
50 / 20	1075	0.932	1262	0.927	1204	0.932	462	1.043		
60 / 30	1447	0.913	1494	0.909	1525	0.915	701	0.984		
80 / 40	1689	0.879	1754	0.877	1717	0.883	1134	0.948		
100 / 50	1870	0.854	1828	0.852	1972	0.857	1488	0.925		
120 / 60	2198	0.832	1931	0.830	2006	0.835	1557	0.907		
140 / 80	2437	0.816	2173	0.815	2086	0.818	2432	0.877		
160 / 100	2850	0.804	2495	0.798	2473	0.803	2977	0.857		
180 / 120	3489	0.795	2788	0.787	2797	0.793	4009	0.838		
200 / 140	3846	0.786	2967	0.778	2944	0.782	4014	0.826		
160							4935	0.810		
180							7810	0.803		
200							9245	0.796		



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