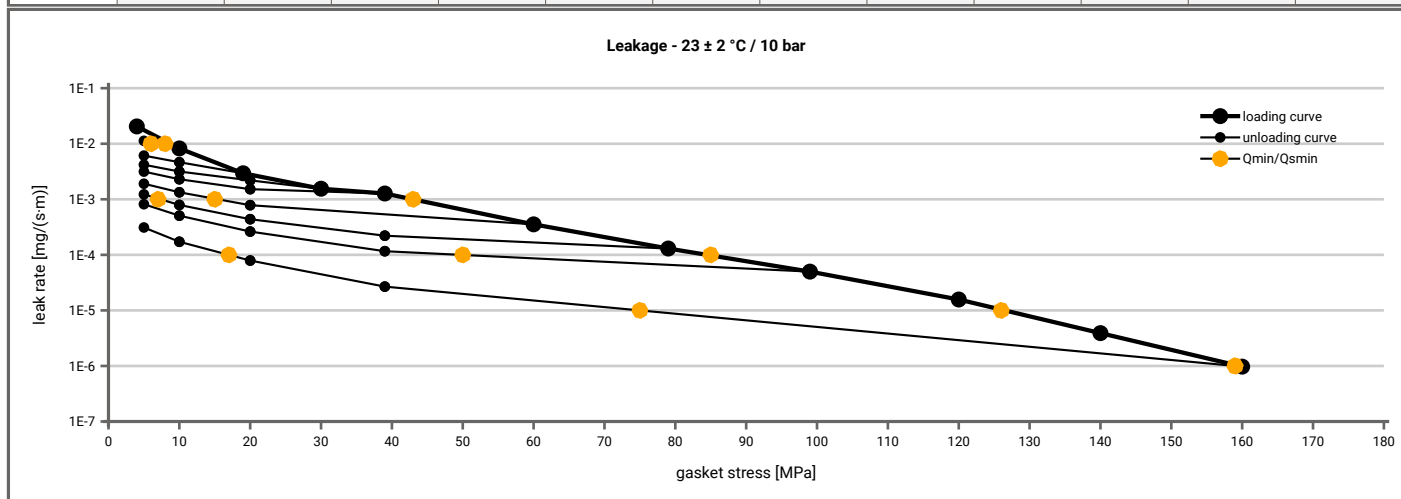
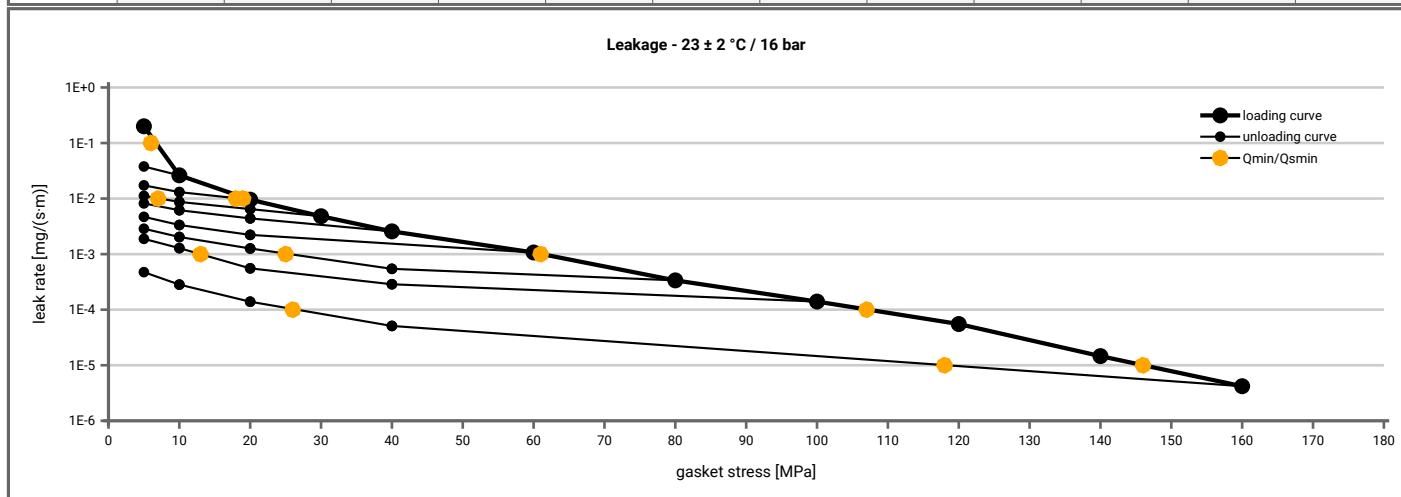


Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to DIN EN 13555 2014-7
Product name	Sigraflex Hochdruck V30011Z3I	
Product dimensions	92 x 49 x 3 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 10$ bar ($T = 23 \pm 2$ °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	9		7	5	5	5	5	5	5			5
1E-3	44						15	7	5			5
1E-4	85								51			17
1E-5	126											76
1E-6	160											159
1E-7												
1E-8												



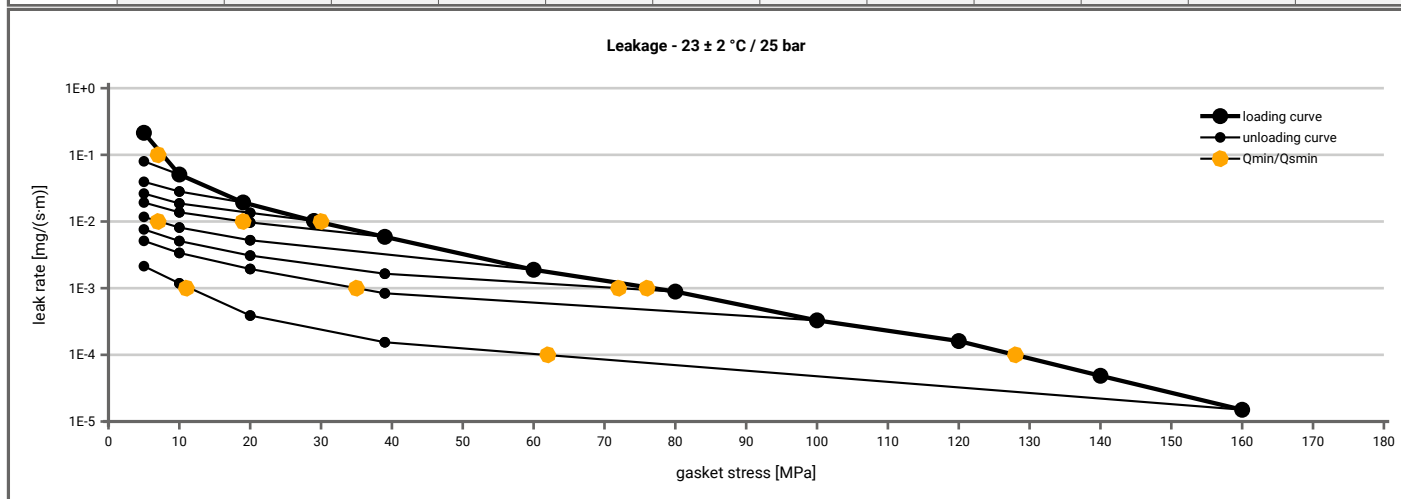
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 16$ bar ($T = 23 \pm 2$ °C)												
L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]										
		$Q_A = 5$ [MPa]	$Q_A = 10$ [MPa]	$Q_A = 20$ [MPa]	$Q_A = 30$ [MPa]	$Q_A = 40$ [MPa]	$Q_A = 60$ [MPa]	$Q_A = 80$ [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	7		5	5	5	5	5	5	5			5
1E-2	20			19	7	5	5	5	5			5
1E-3	61							26	13			5
1E-4	107											27
1E-5	146											118
1E-6												
1E-7												
1E-8												



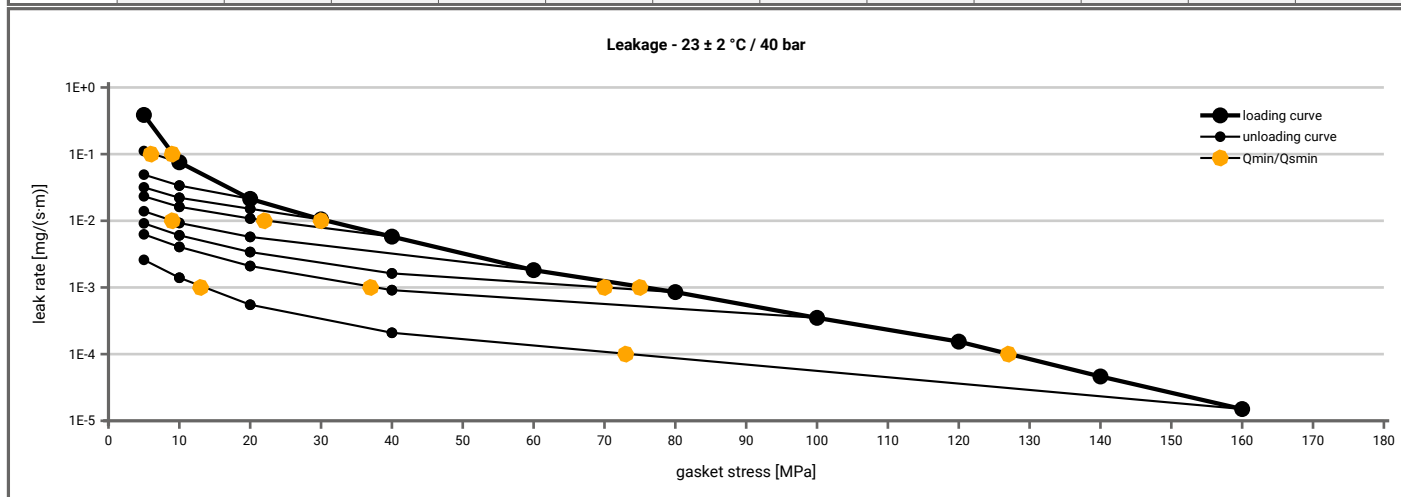
Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: 3	Creation date of this sheet: 2019-08-22
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Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to DIN EN 13555 2014-7
Product name	Sigraflex Hochdruck V30011Z3I	
Product dimensions	92 x 49 x 3 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 25 \text{ bar}$ ($T = 23 \pm 2 \text{ }^{\circ}\text{C}$)												
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	30					19	7	5	5			5
1E-3	77							72	36			12
1E-4	128											62
1E-5												
1E-6												
1E-7												
1E-8												



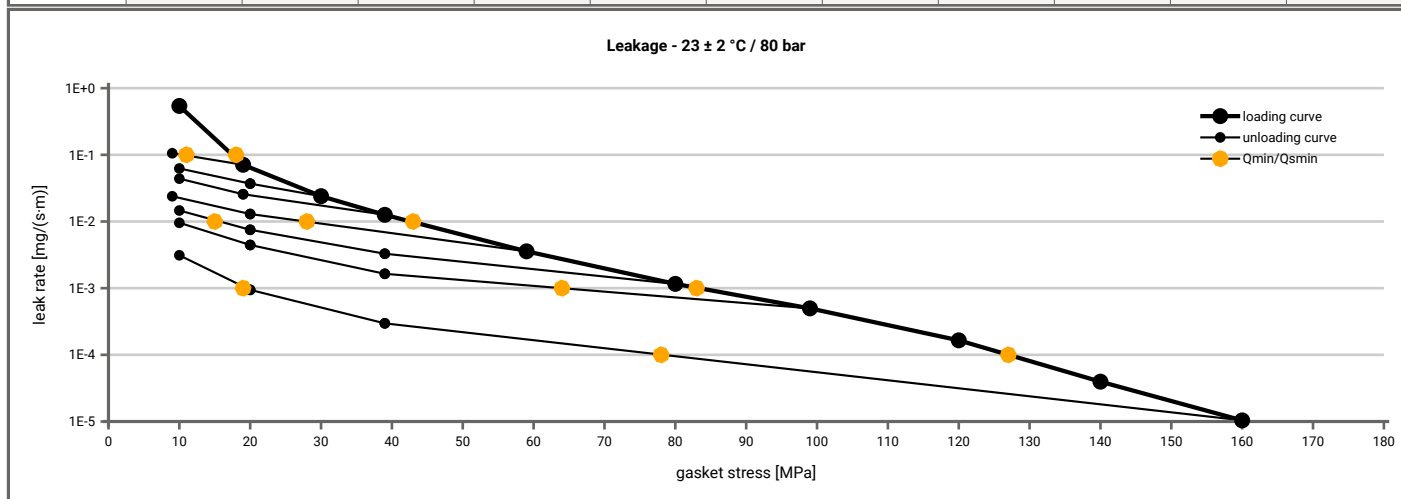
Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 40 \text{ bar}$ ($T = 23 \pm 2 \text{ }^{\circ}\text{C}$)												
L [mg/(s·m)]	$Q_{min(L)}$ [MPa]	$Q_{smin(L)}$ [MPa]										
		$Q_A = 5$ [MPa]	$Q_A = 10$ [MPa]	$Q_A = 20$ [MPa]	$Q_A = 30$ [MPa]	$Q_A = 40$ [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	9		6	5	5	5	5	5	5			5
1E-2	31					23	9	5	5			5
1E-3	76							70	38			14
1E-4	127											74
1E-5												
1E-6												
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 2014-7
Product name	Sigraflex Hochdruck V30011Z3I	
Product dimensions	92 x 49 x 3 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 ($T = 23 \pm 2$ °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	18		11	10	10	10	10	10			10
1E-2	44					28	16	10			10
1E-3	83							65			19
1E-4	127										79
1E-5											
1E-6											
1E-7											
1E-8											

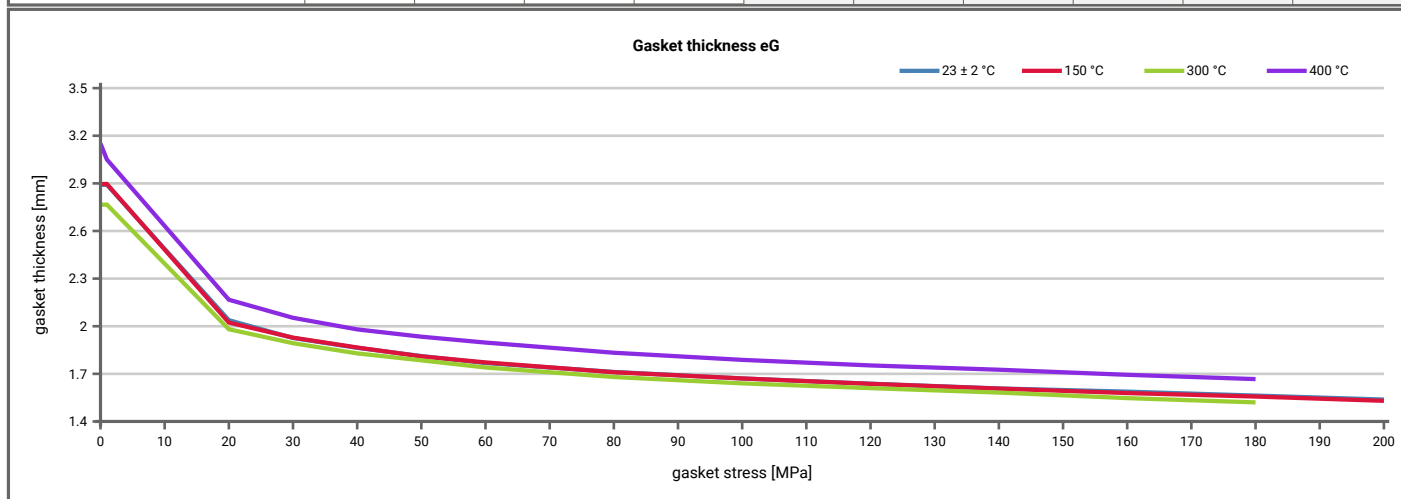


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Manufacturer address	SGL Carbon GmbH, Werner-von-Siemens-Straße 16, 86405 Meitingen, DE	According to DIN EN 13555 2014-7
Product name	Sigraflex Hochdruck V30011Z3I	
Product dimensions	92 x 49 x 3 mm (DIN EN 1514-1 1997-8)	

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	6	0.93	18	0.92	21	0.86	35		
Stress level 2 [50 MPa]	0.98	8	0.96	19	0.95	21	0.91	38		
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	0.98	30	0.97	45		
Q_{smax}	200 MPa		200 MPa		180 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	2.891	0	2.896	0	2.766	0	3.151		
1	0	2.891	0	2.896	0	2.766	0	3.050		
20	409	2.038	432	2.023	466	1.981	405	2.167		
30	631	1.926	660	1.928	670	1.893	659	2.053		
40	936	1.864	1003	1.866	995	1.829	851	1.980		
50	1089	1.812	1038	1.810	1423	1.785	1283	1.934		
60	1275	1.768	1400	1.772	1323	1.740	1745	1.897		
80	1949	1.712	1838	1.710	2025	1.680	2085	1.833		
100	2578	1.671	2582	1.671	2427	1.640	2547	1.788		
120	2840	1.638	2868	1.637	3163	1.610	3300	1.753		
140	3146	1.608	3155	1.607	3322	1.582	4332	1.726		
160	3960	1.588	3294	1.579	3190	1.547	4379	1.694		
180	4279	1.563	3892	1.557	3245	1.520	4360	1.667		
200	3695	1.538	4154	1.530						



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