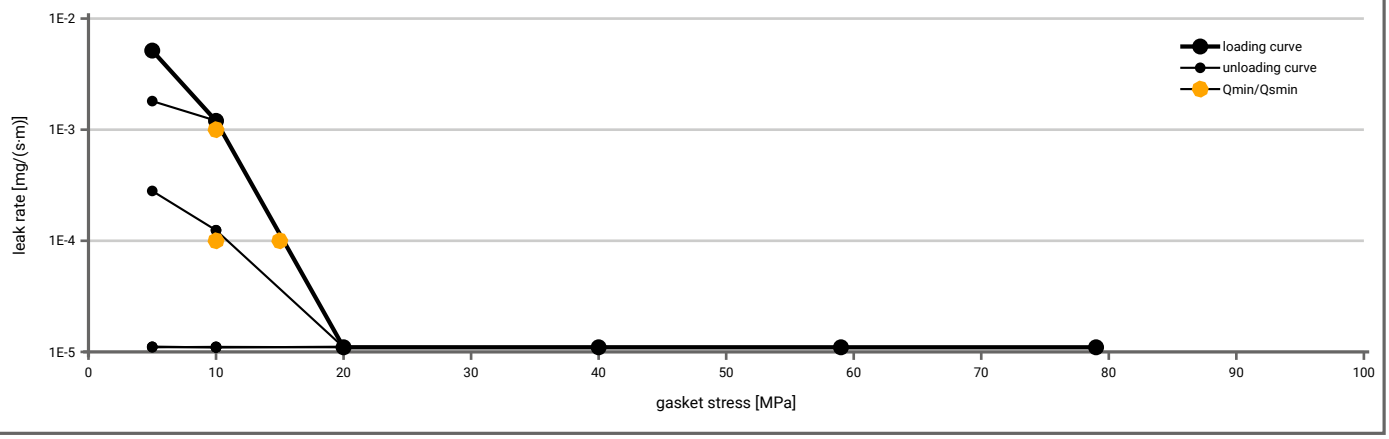
Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to **DIN EN 13555 2005-2**
Product name	KLINGER® Graphite Laminate TSM150B	
Product dimensions	92 x 49 x 1.5 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for p = 10 bar (T = 23 ± 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 = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]
1E-0	5		5	5	5	5	5
1E-1	5		5	5	5	5	5
1E-2	5		5	5	5	5	5
1E-3	10			5	5	5	5
1E-4	15			11	5	5	5
1E-5							
1E-6							
1E-7							
1E-8							

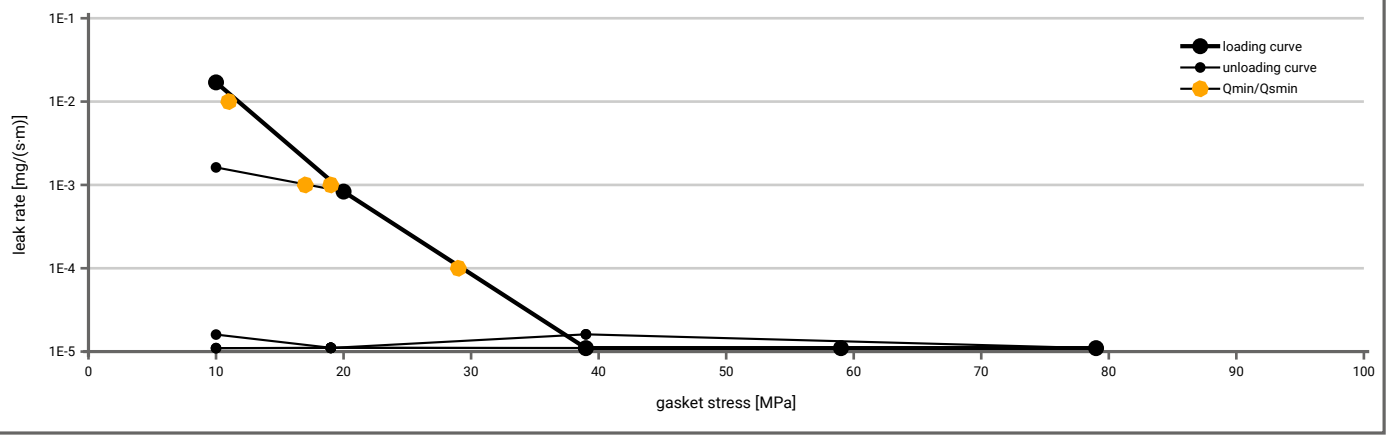
Leakage - 23 ± 2 °C / 10 bar



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 = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]
1E-0	10		10	10	10	10
1E-1	10		10	10	10	10
1E-2	12		10	10	10	10
1E-3	19		17	10	10	10
1E-4	30			10	10	10
1E-5						
1E-6						
1E-7						
1E-8						

Leakage - 23 ± 2 °C / 40 bar

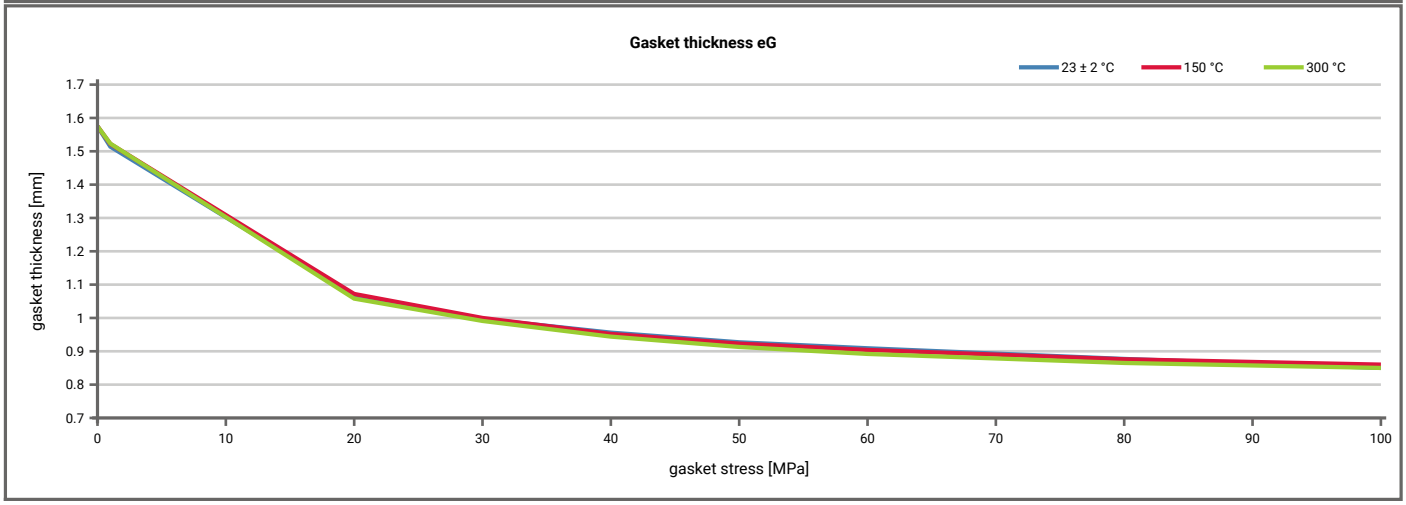


Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2012-03-28**

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to **DIN EN 13555 2005-2**
Product name	KLINGER® Graphite Laminate TSM150B	
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]**					
	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]	0.96	11	0.91	23	0.90	26				
Stress level 2 [50 MPa]	0.98	8	0.94	27	0.94	27				
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	0.99	8	0.96	38	0.92	71				
Q_{smax}	100 MPa		100 MPa		100 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]**					
	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	1.575	0	1.575	0	1.575				
1	0	1.514	0	1.522	0	1.523				
20	478	1.067	437	1.072	437	1.058				
30	766	0.997	657	1.000	615	0.991				
40	1208	0.956	897	0.952	844	0.944				
50	1748	0.927	1269	0.923	1099	0.913				
60	2254	0.909	1729	0.904	1393	0.892				
80	3029	0.877	2438	0.876	2094	0.865				
100	4494	0.850	3640	0.860	3098	0.850				



Note: the content of darkened cells was not determined respectively is unnecessary	Rev.-No.: **1**	Creation date of this sheet: **2012-03-28**