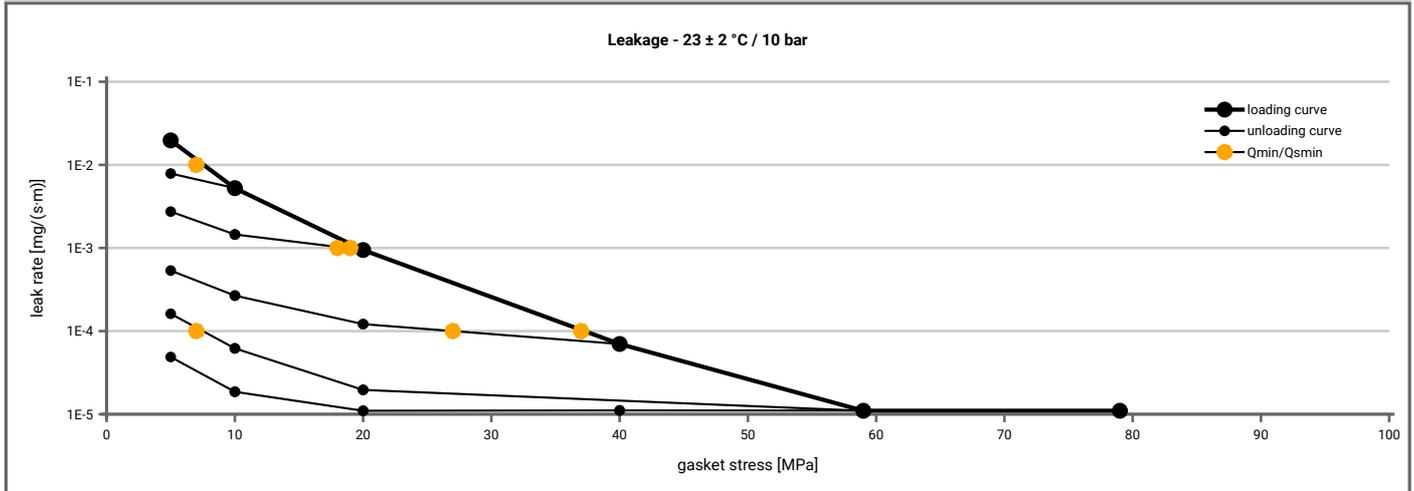
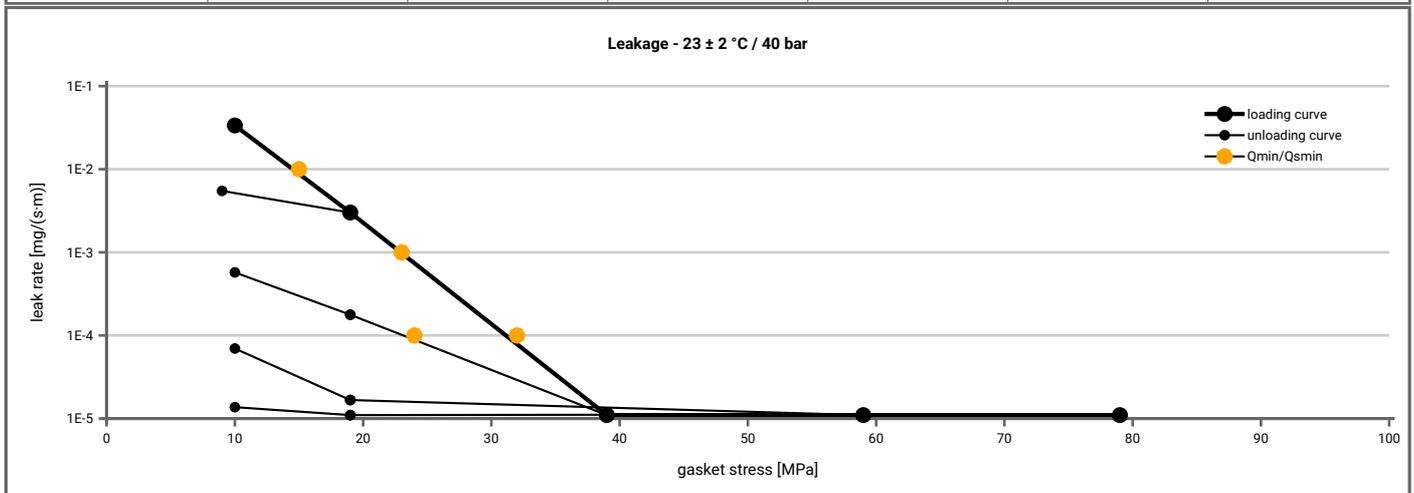


Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to DIN EN 13555 2005-2
Product name	KLINGER® Graphite Laminate TSM200B	
Product dimensions	92 x 49 x 2 mm (DIN EN 1514-1 1997-8)	

Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 10$ 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]	$Q_A = 40$ [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	8		5	5	5	5	5
1E-3	20			19	5	5	5
1E-4	37				27	8	5
1E-5							
1E-6							
1E-7							
1E-8							



Minimum stress to seal $Q_{min(L)}$ (at assembly), $Q_{smin(L)}$ (after off-loading) for $p = 40$ 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]	$Q_A = 40$ [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	15		10	10	10	10
1E-3	24			10	10	10
1E-4	32			24	10	10
1E-5						
1E-6						
1E-7						
1E-8						

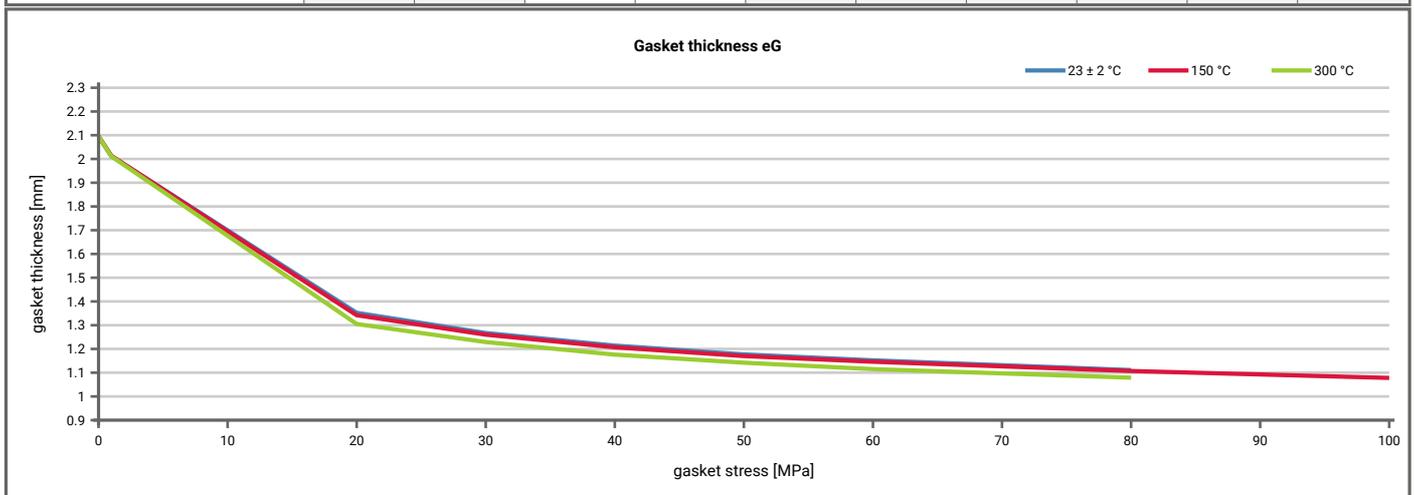


Note: the content of darkened cells was not determined respectively is unnecessary Rev.-No.: 1 Creation date of this sheet: 2012-03-28

Manufacturer address	KLINGER GmbH, Richard Klinger Str. 37, 65510 Idstein, DE	According to DIN EN 13555 2005-2
Product name	KLINGER® Graphite Laminate TSM200B	
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]		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	9	0.92	21	0.85	39				
Stress level 2 [50 MPa]	0.99	6	0.93	31	0.92	34				
P_{QR} and Δe_{Gc} at maximum gasket stress to be applied Q_{smax}										
P_{QR} at Q_{smax}	0.99	7	0.97	29	0.92	54				
Q_{smax}	80 MPa		100 MPa		80 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	2.095	0	2.095	0	2.095				
1	0	2.012	0	2.013	0	2.011				
20	418	1.352	430	1.342	445	1.305				
30	721	1.267	674	1.260	629	1.229				
40	1062	1.214	965	1.207	905	1.176				
50	1361	1.177	1260	1.170	1264	1.142				
60	1891	1.152	1768	1.146	1586	1.115				
80	2938	1.111	2607	1.107	2395	1.079				
100			3434	1.078						



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