

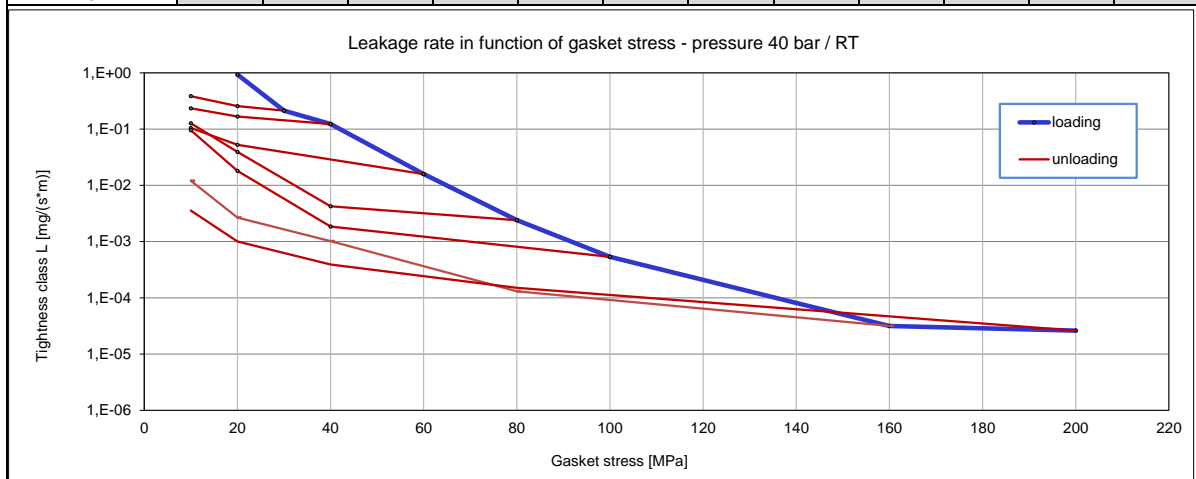
	LABORATORY OF SEALING MATERIALS 43-382 Bielsko-Biala, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl www.laboratory.spetech.eu			  www.lbt.com 218A13/5993 LB - 12402
	Company	SPETECH sp. z o.o.		
Gasket Type	SPETORING LENS Soft Iron			
Dimensions [mm]	DN50 PN63			
Stiffness (kN/mm)	500			
Calculation type EN 1591-1	c) lens gasket;	DIN 2696	lenticular	

Notes:

Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2009/ :2013

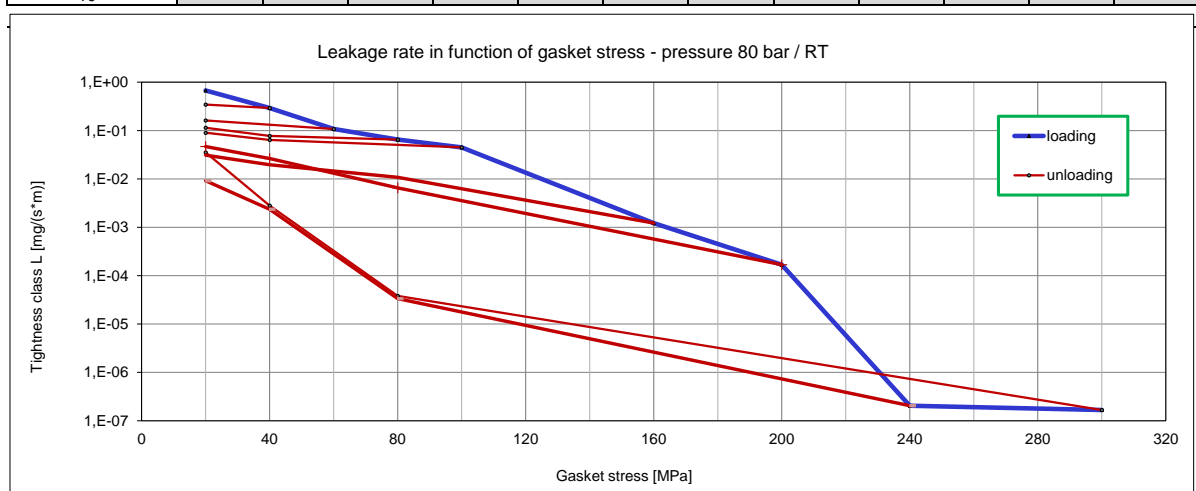
Minimum level of surface pressure required for leakage rate class L on assembly $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

Internal pressure [bar]	40											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		$Q_A = 20$ [MPa]	$Q_A = 30$ [MPa]	$Q_A = 40$ [MPa]	$Q_A = 60$ [MPa]	$Q_A = 80$ [MPa]	$Q_A = 100$ [MPa]	$Q_A = 160$ [MPa]	$Q_A = 200$ [MPa]			
10^0	19		10	10								
10^{-1}	42				11	12	10	10	10			
10^{-2}	65					32	25	12	10			
10^{-3}	92						69	40	20			
10^{-4}	136							97	108			
10^{-5}												
10^{-6}												
10^{-7}												



Minimum level of surface pressure required for leakage rate class L on assembly $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

Internal pressure [bar]	80											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		$Q_A = 20$ [MPa]	$Q_A = 40$ [MPa]	$Q_A = 60$ [MPa]	$Q_A = 80$ [MPa]	$Q_A = 100$ [MPa]	$Q_A = 160$ [MPa]	$Q_A = 200$ [MPa]	$Q_A = 240$ [MPa]	$Q_A = 300$ [MPa]		
10^0	20		20	20	20	20	20	20	20	20		
10^{-1}	62				27	20	20	20	20	20		
10^{-2}	125						83	68	20	30		
10^{-3}	164							142	48	50		
10^{-4}	203								70	71		
10^{-5}	217								118	135		
10^{-6}	231								190	227		
10^{-7}												
10^{-8}												



Temperature		RT					
Gasket stress	E _G	e _G	C=500 kN/mm		Q _{smax}	μ _G	
			P _{OR}	Δe _{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]	
1	207000	13,499			300	not applicable	
10		13,486					
20		13,480					
30		13,476					
40		13,470					
50		13,466		1,00			0,000
60		13,462					
80		13,450					
100		13,433		1,00			0,001
120		13,413					
140		13,383					
160		13,351					
180		13,313					
200		13,271					
220		13,223					
240		13,164					
260		13,097					
280		13,020					
300		12,937		1,00			0,003

Temperature		100°C					
Gasket stress	E _G	e _G	C= 500 kN/mm		Q _{smax}	μ _G	
			P _{OR}	Δe _{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]	
1	195000	13,500			260	not applicable	
10		13,492					
20		13,486					
30		13,482					
40		13,475					
50		13,473		0,96			0,006
60		13,468					
80		13,457					
100		13,442		0,98			0,006
120		13,421					
140		13,397					
160		13,370					
180		13,346					
200		13,323					
220		13,297					
240		13,263					
260		13,235		0,99			0,007

Temperature		200°C					
Gasket stress	E _G	e _G	C= 500 kN/mm		Q _{smax}	μ _G	
			P _{OR}	Δe _{Gc}			
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]	
1	183000	13,500			240	not applicable	
10		13,484					
20		13,479					
30		13,475					
40		13,470					
50		13,465		0,94			0,008
60		13,459					
80		13,446					
100		13,430		0,94			0,015
120		13,410					
140		13,389					
160		13,367					
180		13,345					
200		13,321					
220		13,296					
240		13,267		0,98			0,013

Temperature		300°C				
Gasket stress	E_G	e_G	C= 500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δe_{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]
1	175000	13,504			200	not applicable
10		13,483				
20		13,480				
30		13,475				
40		13,469				
50		13,464	0,93	0,009		
60		13,458				
80		13,444				
100		13,426	0,92	0,021		
120		13,405				
140		13,382				
160		13,358				
180		13,330				
200		13,299	0,94	0,029		

