



LABORATORY OF SEALING MATERIALS

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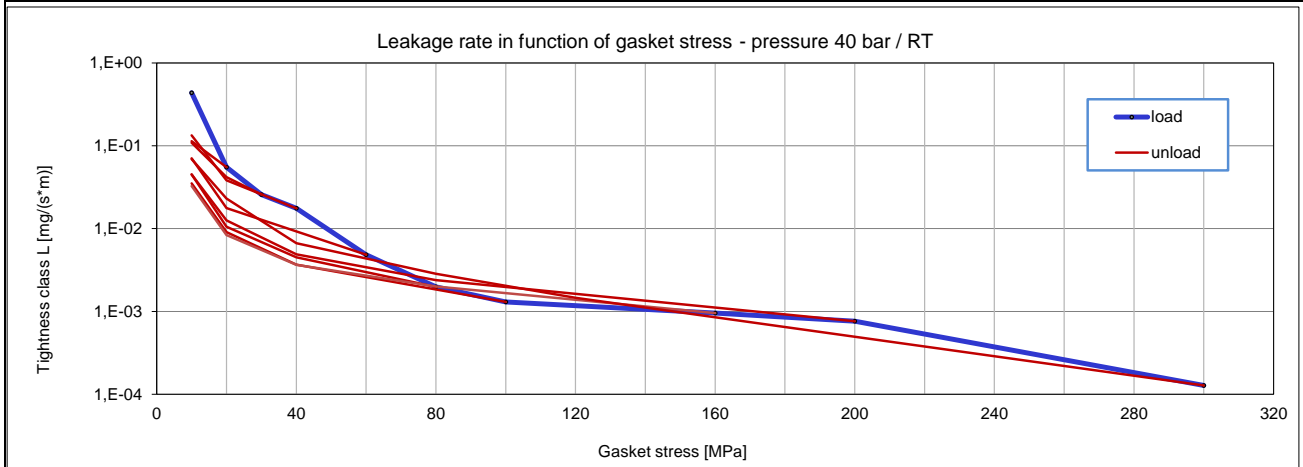


Company	SPETECH sp. z o.o.		
Gasket Type	SPETORING LENS SA182 F321		
Dimensions [mm]	DN50 PN63		
Stiffness (kN/mm)	500		
Calculation type EN 1591-1	c) lens gasket;	DIN 2696	lenticular

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

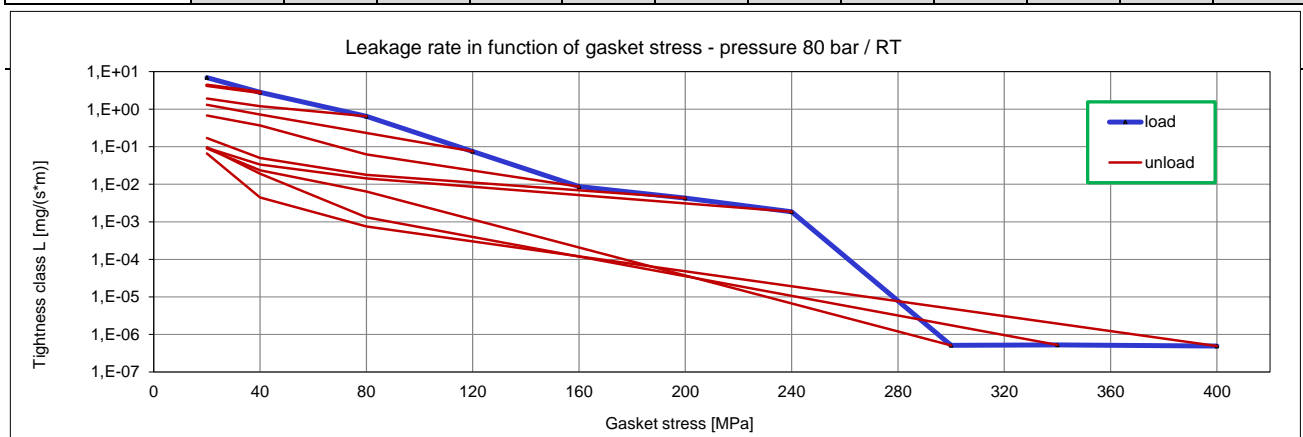
Minimum level of surface pressure required for leakage rate class L on assembly $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

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]	$Q_A = 300$ [MPa]	
10^0	10	10	10	10	10	10	10	10	10		
10^{-1}	17	12	11	12	10	10	10	10	10	10	
10^{-2}	48				38	22	19	18	24	33	
10^{-3}	152							154	172	148	
10^{-4}											
10^{-5}											



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]	$Q_A = 80$ [MPa]	$Q_A = 120$ [MPa]	$Q_A = 160$ [MPa]	$Q_A = 200$ [MPa]	$Q_A = 240$ [MPa]	$Q_A = 300$ [MPa]	$Q_A = 340$ [MPa]	$Q_A = 400$ [MPa]
10^0	68		52	29	20	20	20	20	20	20	
10^{-1}	115			110	69	29	20	20	20	20	
10^{-2}	157				153	128	107	66	50	33	
10^{-3}	245							123	90	53	
10^{-4}	262							177	166	168	
10^{-5}	278							231	243	268	
10^{-6}	294							284	318	368	
10^{-7}											



Temperature	RT					
Gasket stress	E _G	eG	C=500 kN/mm		Q _{smax}	μ _G
			P _{QR}	Δe _{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]
1	200000	13,500			480	not applicable
20		13,481				
30		13,478				
40		13,473				
50		13,472	1,00	0,001		
60		13,468				
80		13,460				
100		13,452	0,99	0,002		
120		13,441				
140		13,429				
160		13,415				
180		13,399				
200		13,381				
220		13,362				
240		13,343				
260		13,317				
280		13,289				
300		13,259				
320		13,224				
340		13,186				
360		13,141				
380		13,093				
400		13,042				
420		12,989				
440		12,935				
460		12,881				
480	12,827	0,98	0,020			

Temperature	250°C					
Gasket stress	E _G	eG	C= 500 kN/mm		Q _{smax}	μ _G
			P _{QR}	Δe _{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]
1	182500	13,500			340	not applicable
20		13,494				
30		13,500				
40		13,496				
50		13,491	0,99	0,002		
60		13,485				
80		13,473				
100		13,459	0,95	0,012		
120		13,440				
140		13,419				
160		13,395				
180		13,369				
200		13,338				
220		13,304				
240		13,266				
260		13,223				
280		13,175				
300		13,124				
320		13,071				
340		13,017	0,90	0,088		

Temperature	550°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	161500	13,500			280	not applicable
20		13,506				
30		13,528				
40		13,524				
50		13,518	0,98	0,003		
60		13,513				
80		13,499				
100		13,479	0,91	0,022		
120		13,456				
140		13,431				
160		13,404				
180		13,373				
200		13,339				
220		13,303				
240		13,264				
260		13,212				
280		13,159	0,86	0,099		

