

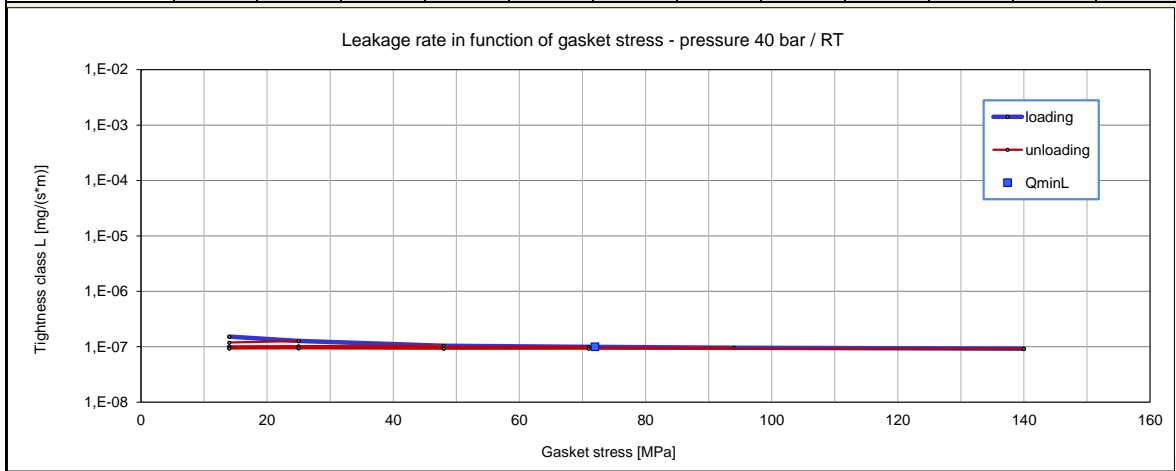
	LABORATORY OF SEALING MATERIALS 43-382 Bielsko-Biala, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl www.laboratory.spetech.eu		  LB - 12402
	Company	SPETECH sp. z o.o.	
Gasket Type	SPETORING RTJ-OR SOFT IRON		
Dimensions [mm]	R 20		
Stiffness (kN/mm)	1500		
Calculation type EN 1591-1	e) RTJ oval;		EN 12560-5

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

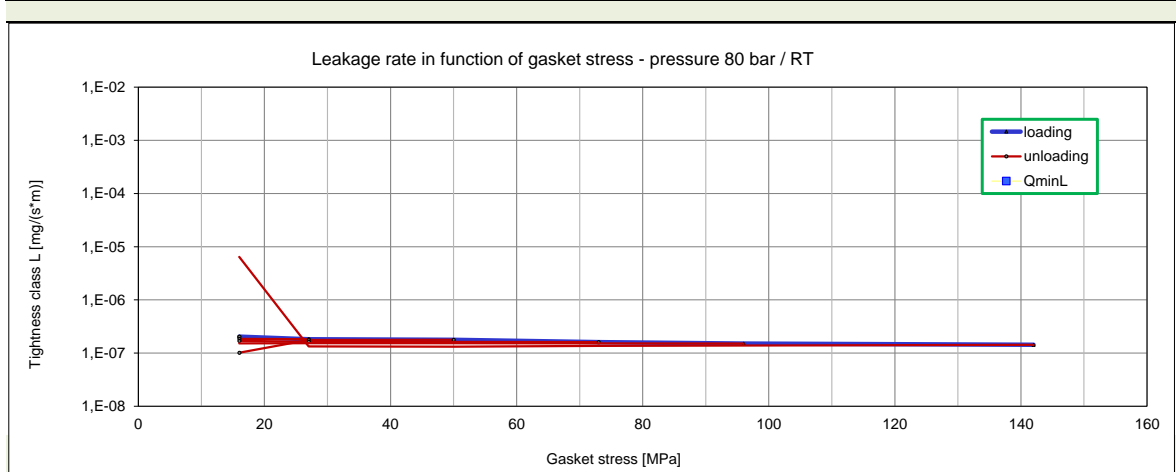
Minimum level of surface pressure required for leakage rate class L on assembly $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

Internal pressure [bar]	40										
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress									
		$Q_A = 25$ [MPa]	$Q_A = 48$ [MPa]	$Q_A = 71$ [MPa]	$Q_A = 94$ [MPa]	$Q_A = 140$ [MPa]					
10^0	14	14	14	14	14	14					
10^{-1}	14	14	14	14	14	14					
10^{-2}	14	14	14	14	14	14					
10^{-3}	14	14	14	14	14	14					
10^{-4}	14	14	14	14	14	14					
10^{-5}	14	14	14	14	14	14					
10^{-6}	14	14	14	14	14	14					
10^{-7}	72				14	14					
10^{-8}											



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									
		$Q_A = 27$ [MPa]	$Q_A = 50$ [MPa]	$Q_A = 73$ [MPa]	$Q_A = 96$ [MPa]	$Q_A = 142$ [MPa]					
10^0	16	16	16	16	16	16					
10^{-1}	16	16	16	16	16	16					
10^{-2}	16	16	16	16	16	16					
10^{-3}	16	16	16	16	16	16					
10^{-4}	16	16	16	16	16	16					
10^{-5}	16	16	16	16	16	16					
10^{-6}	16	16	16	16	16	22					
10^{-7}											
10^{-8}											



RT							
Gasket stress QGe [MPa]	Modulus of elasticity EG	Gasket or sealing element thickness e _G	Creep relaxation factor P _{QR}	Gasket thickness change due to creep Δe _{Gc}	Maximum surface pressure Q _{smax}	Static friction factor μ _G	
	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]	
1	207000	14,600			270	NDA	
14		14,425					
18		14,381					
23		14,330		0,99			0,000
28		14,265					
32		14,245					
37		14,229					
41		14,214					
46		14,197		0,99			0,001
50		14,181					
55		14,164					
60		14,147					
64		14,128					
69		14,110		1,00			0,000
73		14,091					
78		14,071					
83		14,051					
87		14,030					
92		14,009					
96		13,987					
101		13,965					
105		13,942					
110		13,919					
115		13,895					
119		13,872					
124		13,848					
128		13,824					
133		13,800					
138	13,776		0,98	0,003			

100°C							
Gasket stress QGe [MPa]	Modulus of elasticity EG	Gasket or sealing element thickness e _G	Creep relaxation factor P _{QR}	Gasket thickness change due to creep Δe _{Gc}	Maximum surface pressure Q _{smax}	Static friction factor μ _G	
	[MPa]	[mm]	[-]	[mm]	[MPa]	[-]	
1	195000*	14,600			230*	NDA	
14		14,440					
18		14,411					
23		14,375		0,95			0,001
28		14,335					
32		14,305					
37		14,290					
41		14,277					
46		14,262		0,94			0,003
50		14,252					
55		14,236					
60		14,224					
64		14,206					
69		14,194		0,92			0,006
73		14,179					
78		14,157					
83		14,149					
87		14,126					
92		14,113					
96		14,105					
101		14,066					
105		14,063					
110		14,044					
115		14,019					
119		13,992					
124		13,983					
128		13,964					
133		13,950					
138	13,912		0,95	0,007			

200°C							
Gasket stress QGe [MPa]	Modulus of elasticity EG [MPa]	Gasket or sealing element thickness eG [mm]	Creep relaxation factor PQR [-]	Gasket thickness change due to creep ΔeGc [mm]	Maximum surface pressure Qsmax [MPa]	Static friction factor μG [-]	
1	180000*	14,601			210*	NDA	
14		14,438					
18		14,417					
23		14,384		0,88			0,003
28		14,338					
32		14,311					
37		14,296					
41		14,285					
46		14,273		0,93			0,004
50		14,261					
55		14,250					
60		14,237					
64		14,225					
69		14,212		0,93			0,005
73		14,200					
78		14,186					
83		14,172					
87		14,158					
92		14,143					
96		14,129					
101		14,113					
105	14,097						
110	14,082						
115	14,066		0,95	0,006			

300°C							
Gasket stress QGe [MPa]	Modulus of elasticity EG [MPa]	Gasket or sealing element thickness eG [mm]	Creep relaxation factor PQR [-]	Gasket thickness change due to creep ΔeGc [mm]	Maximum surface pressure Qsmax [MPa]	Static friction factor μG [-]	
1	175000*	14,600			195*	NDA	
14		14,440					
18		14,435					
23		14,415		0,77			0,006
28		14,397					
32		14,379					
37		14,366					
41		14,350					
46		14,341		0,87			0,007
50		14,329					
55		14,317					
60		14,306					
64		14,294					
69		14,279		0,88			0,010
73		14,262					
78		14,250					
83		14,232					
87		14,217					
92		14,199					
96		14,180					
101		14,159					
105	14,141						
110	14,120						
115	14,100		0,89	0,014			

