



LABORATORY OF SEALING MATERIALS

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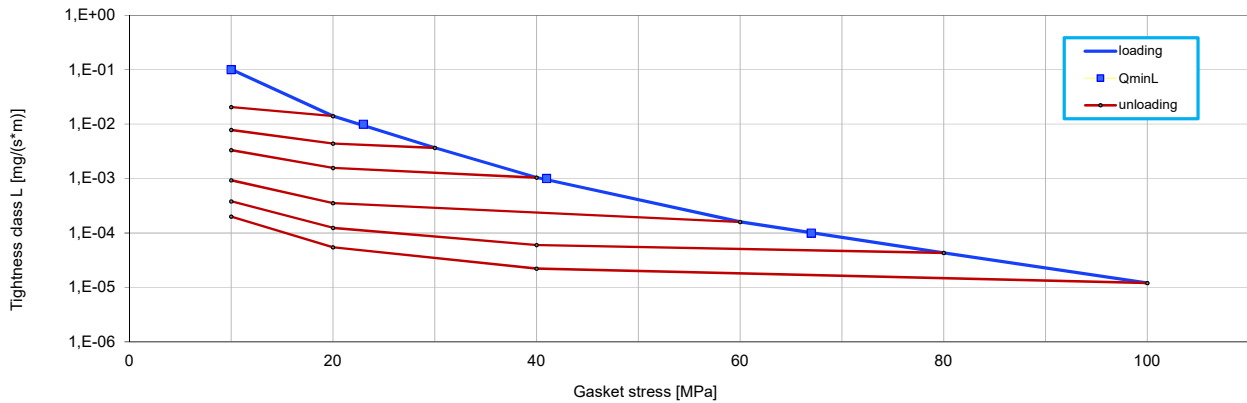
Company	SPETECH sp. z o.o.	
Gasket Type	SPETOBAR® BAS 340I	
Dimensions [mm]	92 x 49 x 2	
Calculation type EN 1591-1	a) flat gasket;	EN 1514-1

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

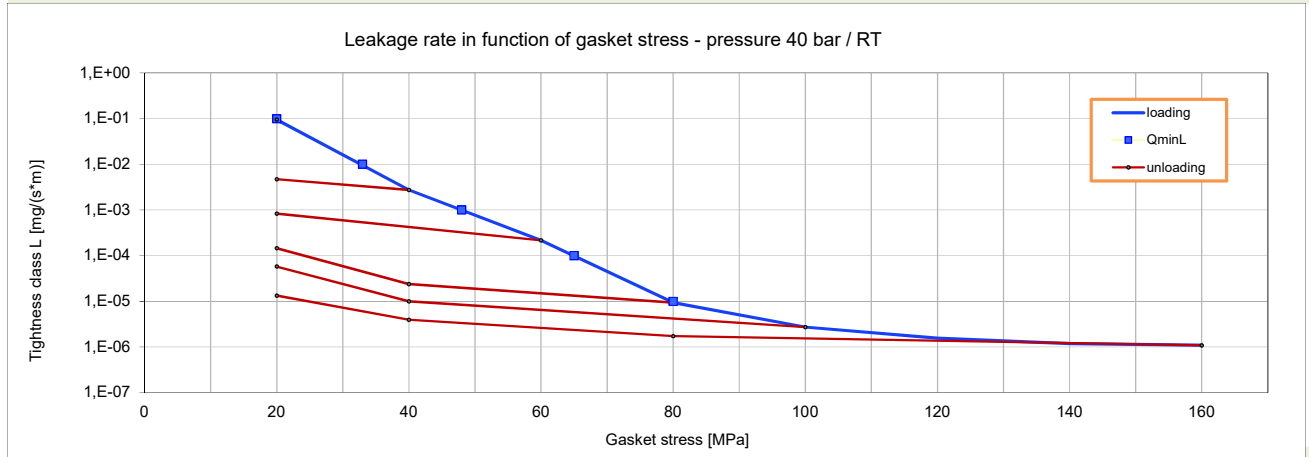
Minimum level of surface pressure required for leakage rate class L on assembly  $Q_{min/L}$  and after off-loading  $Q_{Smin/L}$  at room temperature (RT)

Internal pressure [bar]	10											
	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
L [mg/(s*m)]		$Q_A = 10$ [MPa]	$Q_A = 20$ [MPa]	$Q_A = 30$ [MPa]	$Q_A = 40$ [MPa]	$Q_A = 60$ [MPa]	$Q_A = 80$ [MPa]	$Q_A = 100$ [MPa]	$Q_A = 120$ [MPa]	$Q_A = 140$ [MPa]	$Q_A = 160$ [MPa]	
$10^{-0}$	10		10	10	10	10	10	10				
$10^{-1}$	10		10	10	10	10	10	10				
$10^{-2}$	23			10	10	10	10	10				
$10^{-3}$	41					10	10	10				
$10^{-4}$	67						26	16				
$10^{-5}$												
$10^{-6}$												

Leakage rate in function of gasket stress - pressure 10 bar / RT



Minimum level of surface pressure required for leakage rate class L on assembly Q <sub>min/L</sub> and after off-loading Q <sub>Smin/L</sub> at room temperature (RT)												
Internal pressure [bar]	40											
L [mg/(s·m)]	Q <sub>min/L</sub> [MPa]	Q <sub>Smin/L</sub> [MPa] for effective gasket stress										
		Q <sub>A</sub> = 10 [MPa]	Q <sub>A</sub> = 20 [MPa]	Q <sub>A</sub> = 30 [MPa]	Q <sub>A</sub> = 40 [MPa]	Q <sub>A</sub> = 60 [MPa]	Q <sub>A</sub> = 80 [MPa]	Q <sub>A</sub> = 100 [MPa]	Q <sub>A</sub> = 120 [MPa]	Q <sub>A</sub> = 140 [MPa]	Q <sub>A</sub> = 160 [MPa]	
10 <sup>-0</sup>	20				20	20	20	20			20	
10 <sup>-1</sup>	20				20	20	20	20			20	
10 <sup>-2</sup>	33				20	20	20	20			20	
10 <sup>-3</sup>	48					20	20	20			20	
10 <sup>-4</sup>	65						24	20			20	
10 <sup>-5</sup>	80						78	40			24	
10 <sup>-6</sup>												



RT						
Gasket stress [MPa]	Unloading modulus of elasticity EG [MPa]	Gasket or sealing element thickness e <sub>G</sub> [mm]	Creep relaxation factor P <sub>QR</sub> [-]	Gasket thickness change due to creep Δe <sub>Gc</sub> [mm]	Maximum surface pressure Q <sub>Smax</sub> [MPa]	Static friction factor μ <sub>G</sub> [-]
0		2,057			200	0,31
1		1,954				
10	783	1,872				
20	1164	1,832				
30	1683	1,801	0,97	0,008		
40	2240	1,776				
50	2797	1,755	0,97	0,012		
60	3478	1,740				
80	4853	1,719				
100	6154	1,706	0,99	0,009		
120	7044	1,694				
140	7852	1,685				
160	8440	1,678				
180	8916	1,670				
200	9289	1,662	0,99	0,011		

100°C						
Gasket stress [MPa]	Unloading modulus of elasticity EG [MPa]	Gasket or sealing element thickness e <sub>G</sub> [mm]	Creep relaxation factor P <sub>QR</sub> [-]	Gasket thickness change due to creep Δe <sub>Gc</sub> [mm]	Maximum surface pressure Q <sub>Smax</sub> [MPa]	Static friction factor μ <sub>G</sub> [-]
0		2,046			120	0,32
1		1,979				
10	1183	1,913				
20	1990	1,885				
30	2508	1,868	0,89	0,029		
40	3221	1,855				
50	3915	1,844	0,92	0,035		
60	4468	1,836				
80	5222	1,819				
100	5810	1,800	0,94	0,051		
120	6292	1,775	0,93	0,075		



**Factors acc. to:**

ASTM F3149-15 Determining the Maintenance Factor (m) and Yield Factor (y)

m	y [psi]	y [MPa]
2,5	5100	35,2

[Qmax - see maximal applicable gasket stress Qmax acc. EN 1591-1:2009/2013](#)

**Factors acc. to:**

AD 2000-Merkblatt B7 August 2007

$k_0k_D$ [N/mm]	k1 [mm]	$k_0k_9$ [N/mm]
$25,0 \cdot b_D$	$2,2 \cdot b_D$	---

[Qmax - see maximal applicable gasket stress Qmax acc. EN 1591-1:2009/2013](#)

**Factors acc. to:**

WUDT-UC-WO-O/19

$\sigma_m$ [MPa]	$\sigma_r$ [MPa]	b [1]		
		20oC	100oC	200oC
35,7	$5,0 \cdot p_0$	1,0	1,4	1,8

[Qmax - see maximal applicable gasket stress Qmax acc. EN 1591-1:2009/2013](#)

**Factors acc. to:**

ASTM F36-2003 Standard Test Method for Compressibility and Recovery of Gasket Materials Procedure J

Compressibility [%]	Recovery [%]
5	71

**Factors acc. to:**

ASTM F38-00 Standard Test Methods for Creep Relaxation of a Gasket Material (Method B)

Temperature [°C]	Creep Relaxation [%]
20	12,4
100	50,5
200	70,4

**Factors acc. to:**

EN 61340-2-3 Electrostatics - Part 2-3: Methods of test for determining the resistance and resistivity of solid planar materials used to avoid electrostatic charge accumulation

Surface resistance $R_s$ at U=100V	[ $\Omega$ ]	22 oC	7,78E+10
Volume resistance $R_v$ at U=100V	[ $\Omega$ ]	22 oC	6,26E+10
Surface resistivity $\rho_s$ at U=100V	[ $\Omega$ ]	22 oC	7,87E+11
Volume resistivity $\rho_v$ at U=100V	[ $\Omega m$ ]	22 oC	4,65E+10