

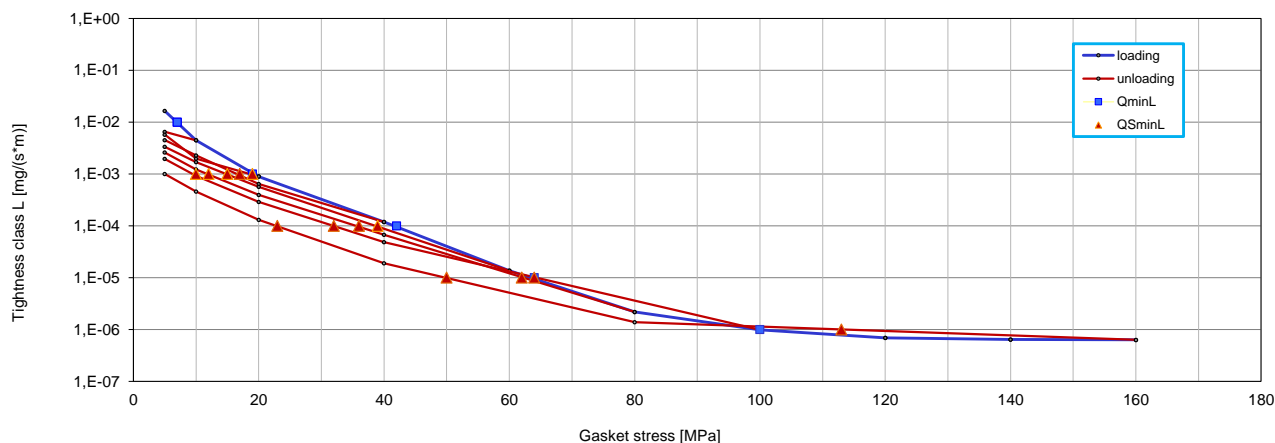
Company	<b>SPETECH sp. z o.o.</b>
Gasket Type	<b>DRYFLEX® FGC 316L</b>
Dimensions [mm]	<b>69 x 53 x 4</b>
Calculation type EN 1591-1	<b>a) flat gasket; EN 1514-6</b>

**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<sub>min/L</sub> and after off-loading Q<sub>Smin/L</sub> at room temperature (RT)

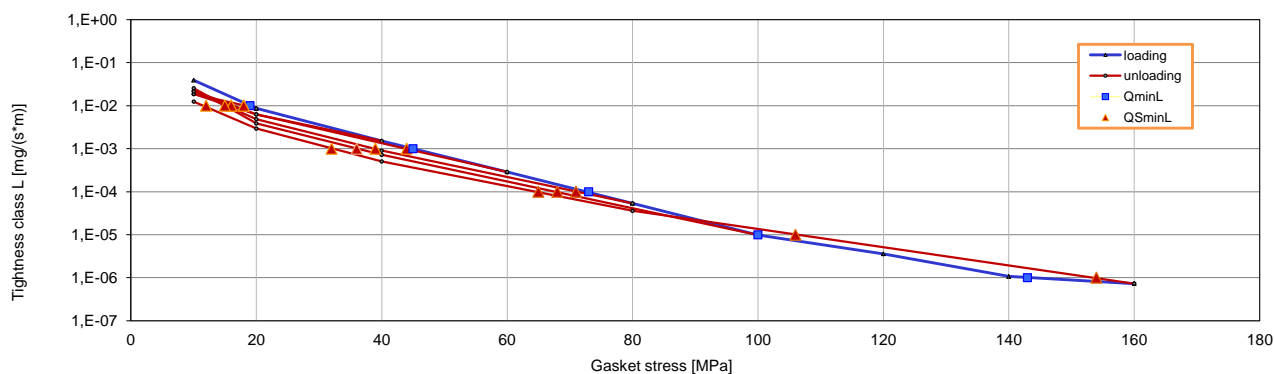
Internal pressure [bar]		10									
L [mg/(s*m)]	Q <sub>min/L</sub> [MPa]	Q <sub>Smin/L</sub> [MPa] for effective gasket stress									
		Q <sub>A</sub> = 10 [MPa]	Q <sub>A</sub> = 20 [MPa]	Q <sub>A</sub> = 40 [MPa]	Q <sub>A</sub> = 60 [MPa]	Q <sub>A</sub> = 80 [MPa]	Q <sub>A</sub> = 100 [MPa]	Q <sub>A</sub> = 120 [MPa]	Q <sub>A</sub> = 140 [MPa]	Q <sub>A</sub> = 160 [MPa]	
10 <sup>-0</sup>	5	5	5	5	5	5	5			5	
10 <sup>-1</sup>	5	5	5	5	5	5	5			5	
10 <sup>-2</sup>	7	5	5	5	5	5	5			5	
10 <sup>-3</sup>	19		19	17	15	12	10			5	
10 <sup>-4</sup>	42				39	36	32			23	
10 <sup>-5</sup>	64					62	64			50	
10 <sup>-6</sup>	100									113	
10 <sup>-7</sup>											

Leakage rate as a 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> = 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>	10		10	10	10	10	10			10	
10 <sup>-1</sup>	10		10	10	10	10	10			10	
10 <sup>-2</sup>	19		18	16	16	18	15			12	
10 <sup>-3</sup>	45				44	39	36			32	
10 <sup>-4</sup>	73					71	68			65	
10 <sup>-5</sup>	100									106	
10 <sup>-6</sup>	143									154	
10 <sup>-7</sup>											

Leakage rate as a function of gasket stress - pressure 40 bar / RT



Parameters at RT						
Gasket stress [MPa]	Unloading modulus of elasticity EG	Gasket or sealing element thickness e <sub>G</sub>	Creep relaxation factor P <sub>QR</sub>	Gasket thickness change due to creep Δe <sub>Gc</sub>	Maximum surface pressure Q <sub>smax</sub>	Static friction factor μ <sub>G</sub>
	[MPa]	[mm]	[ - ]	[mm]	[MPa]	[ - ]
0		3,790			500	0,10
1		3,628				
20	2389	2,948				
30	3523	2,893	0,94	0,006		
40	4404	2,865				
50	5306	2,847				
60	6299	2,833				
80	8097	2,810				
100	10342	2,791	0,99	0,003		
120	12839	2,774				
140	15369	2,760				
160	17503	2,746				
180	19178	2,731				
200	19741	2,714				
220	20624	2,697				
240	20972	2,679				
260	21343	2,661				
280	21435	2,643				
300	22172	2,625				
320	22535	2,608				
340	22793	2,590				
360	22831	2,572				
380	23326	2,555				
400	23424	2,536				
420	23798	2,518				
440	23688	2,499				
460	23944	2,478				
480	24136	2,456				
500	24064	2,432	0,99	0,016		

Parameters at 200°C						
Gasket stress [MPa]	Unloading modulus of elasticity EG	Gasket or sealing element thickness e <sub>G</sub>	Creep relaxation factor P <sub>QR</sub>	Gasket thickness change due to creep Δe <sub>Gc</sub>	Maximum surface pressure Q <sub>smax</sub>	Static friction factor μ <sub>G</sub>
	[MPa]	[mm]	[ - ]	[mm]	[MPa]	[ - ]
0		3,820			400	0,10
1		3,702				
20	2698	2,995				
30	3876	2,958	0,82	0,018		
40	4737	2,929				
50	5638	2,908				
60	6668	2,889				
80	9105	2,859				
100	12241	2,838	0,94	0,020		
120	14954	2,820				
140	16380	2,801				
160	18023	2,782				
180	18573	2,760				
200	18965	2,738				
220	19273	2,716				
240	19548	2,695				
260	19669	2,672				
280	19940	2,650				
300	19900	2,627				
320	20091	2,605				
340	20362	2,581				
360	20401	2,557				
380	20614	2,531				
400	20577	2,502	0,95	0,066		

Parameters at 400°C						
Gasket stress [MPa]	Unloading modulus of elasticity EG	Gasket or sealing element thickness e <sub>G</sub>	Creep relaxation factor P <sub>QR</sub>	Gasket thickness change due to creep Δe <sub>Gc</sub>	Maximum surface pressure Q <sub>smax</sub>	Static friction factor μ <sub>G</sub>
	[MPa]	[mm]	[ - ]	[mm]	[MPa]	[ - ]
0		3,816			200	0,10
1		3,702				
20	2634	2,986				
30	3803	2,956	0,79	0,021		
40	4810	2,930				
50	5804	2,911				
60	6880	2,894				
80	9678	2,866				
100	12576	2,845	0,93	0,023		
120	15092	2,825				
140	16873	2,804				
160	17795	2,781				
180	18566	2,756				
200	18995	2,732	0,94	0,039		

**Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2001**

T [°C]	Q <sub>min</sub> [MPa]	Q <sub>max, ref</sub> [MPa]	E <sub>0</sub> [MPa]	K <sub>1</sub>	Q/P	g <sub>c</sub>	c <sub>1</sub>
0...20	15	500	16000	-	1,3	1,0	0,00
100	-	480	16000	-	1,3	1,0	-
200	-	450	16000	-	1,3	1,0	-
300	-	420	16000	-	1,3	1,0	-
bGref [mm]		8,0		eGref [mm]		4,0	

**Factors acc. to:**

EN 13445-3 : Unfired pressure vessels - Part 3: Design  
 EN 13480-3:2002 Metallic industrial piping - Part 3: Design and calculation  
 ASME Code s. VIII Boiler & Pressure Vessel Code

m	y [psi]	y [MPa]
2,50	2200	15,2

[omax - see maximal applicable gasket stress Q<sub>max</sub> acc. EN 1591-1:2009/2013](#)

**Factors acc. to:**

AD 2000-Merkblatt B7 August 2007

k <sub>0</sub> k <sub>D</sub> [N/mm]	k <sub>1</sub> [mm]	k <sub>0</sub> k <sub>δ</sub> [N/mm]
15,0*b <sub>D</sub>	1,1*b <sub>D</sub>	*b <sub>D</sub>

[omax - see maximal applicable gasket stress Q<sub>max</sub> acc. EN 1591-1:2009/2013](#)

**Factors acc. to:**

WUDT-UC-WO-0/19

σ <sub>m</sub> [MPa]	σ <sub>r</sub> [MPa]	b [1]				
		20°C	100°C	200°C	300°C	400°C
15,3	5,0*p <sub>0</sub>	1,1	1,1	1,1	1,1	1,2

[omax - see maximal applicable gasket stress Q<sub>max</sub> 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 [%]
-	-

**Factors acc. to:**

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

Temperature [°C]	Creep Relaxation [%]
-	-
-	-
-	-

**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 <sub>s</sub> at U=10V	[Ω]	<1E+3
Volume resistance R <sub>v</sub> at U=10V	[Ω]	<1E+3
Surface resistivity ρ <sub>s</sub> at U=10V	[Ω]	<1,01E+4
Volume resistivity ρ <sub>v</sub> at U=10V	[Ωm]	<3,72E+2