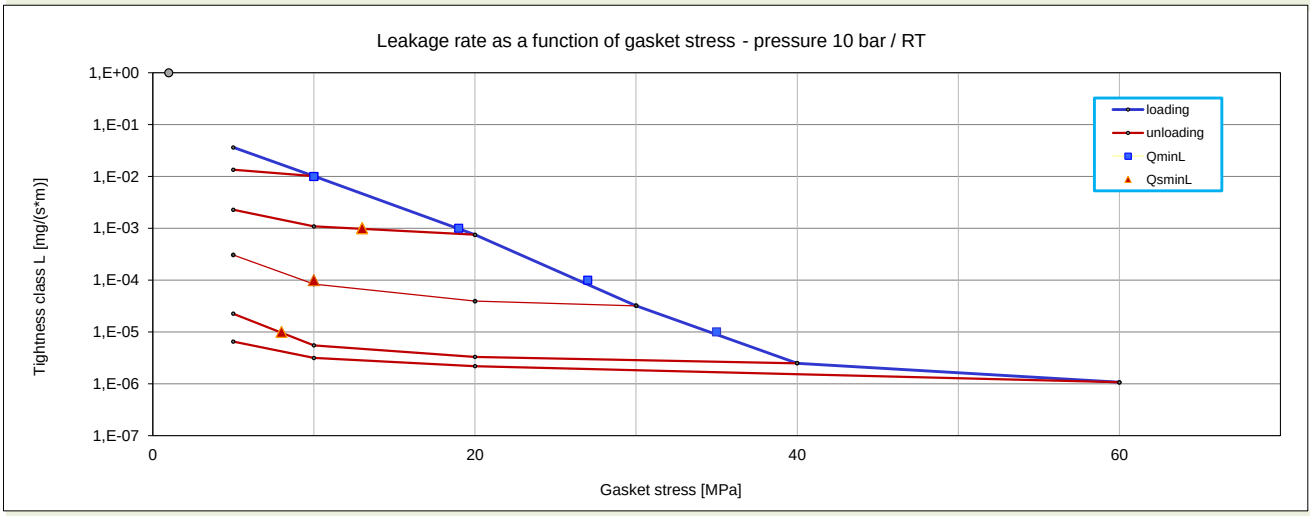
SPETECH LBMU	**LABORATORY OF SEALING MATERIALS** 43-382 Bielsko-Biała, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl http://www.laboratory.spetech.eu
Company	**SPETECH sp. z o.o.**
Gasket Type	**SPETOFLON FL 300**
Dimensions [mm]	**92x49x2**
Calculation type EN 1591-1	**a) flat gasket; EN 1514-1**

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

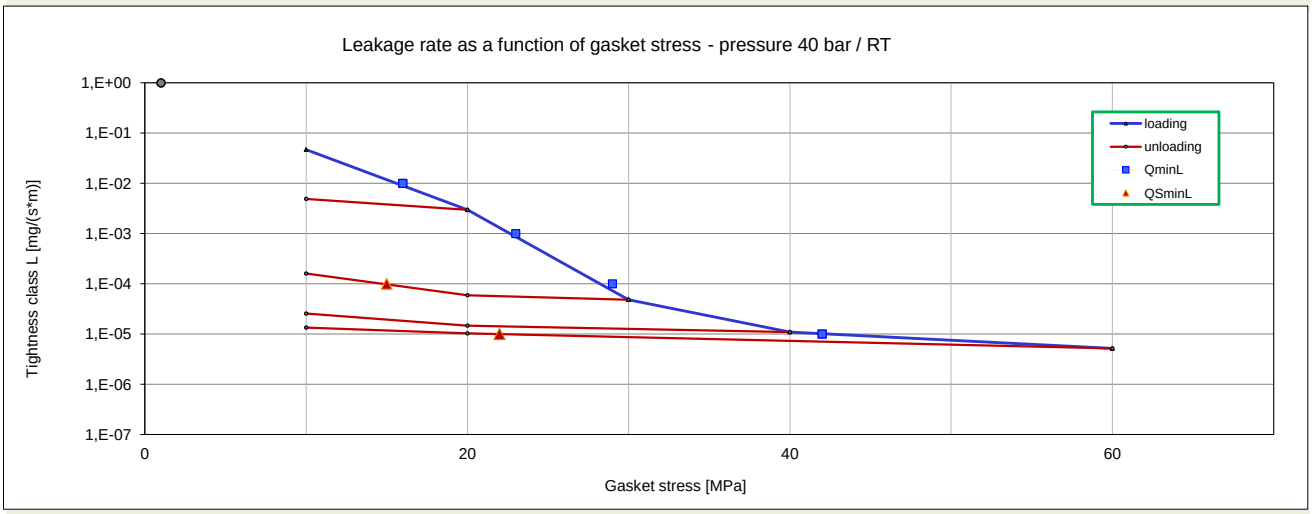
Minimum level of surface pressure required for leakage rate class L on assembly Qmin/L and after off-loading QSmin/L at room temperature (RT)

Internal pressure [bar]	**10**											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		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}	5	5	5	5	5	5						
10^{-1}	5	5	5	5	5	5						
10^{-2}	**10**		5	5	5	5						
10^{-3}	**19**		**13**	5	5	5						
10^{-4}	**27**			**10**	5	5						
10^{-5}	**35**				**8**	5						
10^{-6}												



Minimum level of surface pressure required for leakage rate class L on assembly Qmin/L and after off-loading QSmin/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 = 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^{-1}	10		10	10	10	10						
10^{-2}	**16**		10	10	10	10						
10^{-3}	**23**			10	10	10						
10^{-4}	**29**			**15**	10	10						
10^{-5}	**42**					**22**						
10^{-6}												



Paremeters at **RT**						
Gasket stress [MPa]	Unloading 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]	[-]
0		1,868			**60**	0,05
1		1,825				
10	**1070**	1,760	**0,96**	0,004		
20	**1986**	1,718				
30	**2913**	1,684	**0,94**	0,016		
40	**3692**	1,641				
50	**4592**	1,561				
60	**5283**	1,441	**0,83**	0,084		

Paremeters at 15**0*C**						
Gasket stress [MPa]	Unloading 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]	[-]
0		1,964			**50**	0,05
1		1,849				
10	**984**	1,772	**0,75**	0,021		
20	**1489**	1,640				
30	**1911**	1,367	**0,54**	0,115		
40	**2566**	1,144				
50	**2960**	0,994	**0,46**	0,225		

Paremeters at 23**0*C**						
Gasket stress [MPa]	Unloading 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]	[-]
0		1,959			**30**	0,05
1		1,823				
10	**730**	1,688	**0,63**	0,031		
20	**1087**	1,287				
30	**1298**	0,987	**0,38**	0,156		

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

T [oC]	Q_{min} [MPa]	$Q_{max, ref}$ [MPa]	E_0 [MPa]	K_1	Q_l/P	g_c	c_1
0…20	10	50	600	20	1,3	0,9	
100	-	35	500	20	1,3	0,7	
200	-	20	400	20	1,3	0,5	

bGref [mm]	19,5	eGref [mm]	1,9

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]
2,5	2400	16,5

σmax - see maximal applicable gasket stress Qsmax acc. EN 1591-1:2009/:2013

Factors acc. to:

AD 2000-Merkblatt B7 August 2007

k_0k_D [N/mm]	k1 [mm]	$k_0k\vartheta$ [N/mm]
$22*b_D$	$1,3*b_D$	$*b_D$

σmax - see maximal applicable gasket stress Qsmax acc. EN 1591-1:2009/:2013

Factors acc. to:

WUDT-UC-WO-O/19

σ_m [MPa]	σ_r [MPa]	b [1]				
		20oC	100oC	200oC		
18,3	$5,0*p_0$	1,1	1,8	2,6		

σmax - see maximal applicable gasket stress Qsmax 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 [%]
20	
100	
200	

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	[Ω]	>1E+12
Volume resistance R_v at U=100V	[Ω]	7,24E+11
Surface resistivity ρ_s at U=100V	[Ω]	>1,01E+13
Volume resistivity ρ_v at U=100V	[Ωm]	5,38E+11