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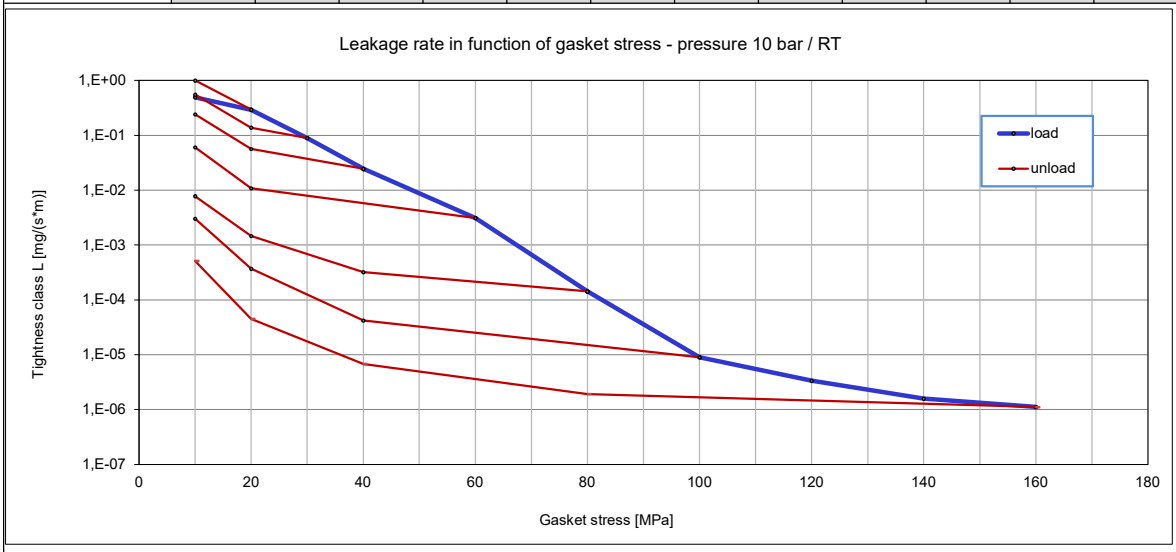
Company	**SPETECH sp. z o.o.**		
Gasket Type	**SPETOBAR® BAS® 341**		
Dimensions [mm]	**92 x 49 x 2 (DN40 PN40)**		
Calculation type EN 1591-1	**a) flat gasket;**	**EN 1514-1**	**IBC**
Notes:	Rev.0 (12-02-2021)		

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

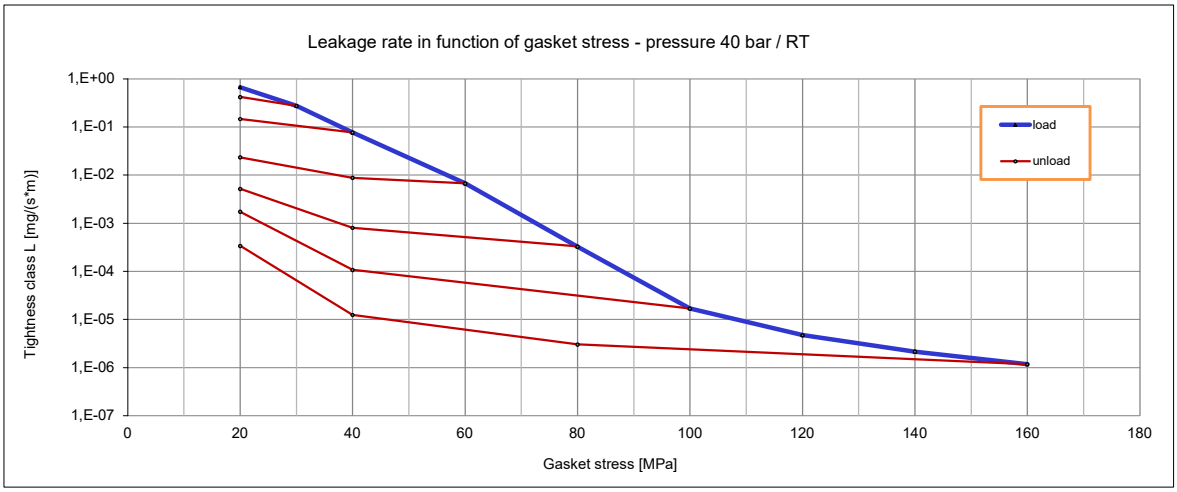
Minimum level of surface pressure required for leakage rate class L on assembly Qmin/L and after off-loading QSmin/L at room temperature (RT)

Internal pressure [bar]	**10**											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		Q_A =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]				
10^{-0}	10	10	10	10	10	10	10	10				
10^{-1}	29		28	16	10	10	10	10				
10^{-2}	49				23	10	10	10				
10^{-3}	67					26	15	10				
10^{-4}	83						32	17				
10^{-5}	100						97	36				
10^{-6}												
10^{-7}												



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 = 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]				
10^{-0}	20		20	20	20	20	20	20				
10^{-1}	38			32	20	20	20	20				
10^{-2}	57				38	20	20	20				
10^{-3}	73					38	24	20				
10^{-4}	87						41	27				
10^{-5}	108							47				
10^{-6}												
10^{-7}												



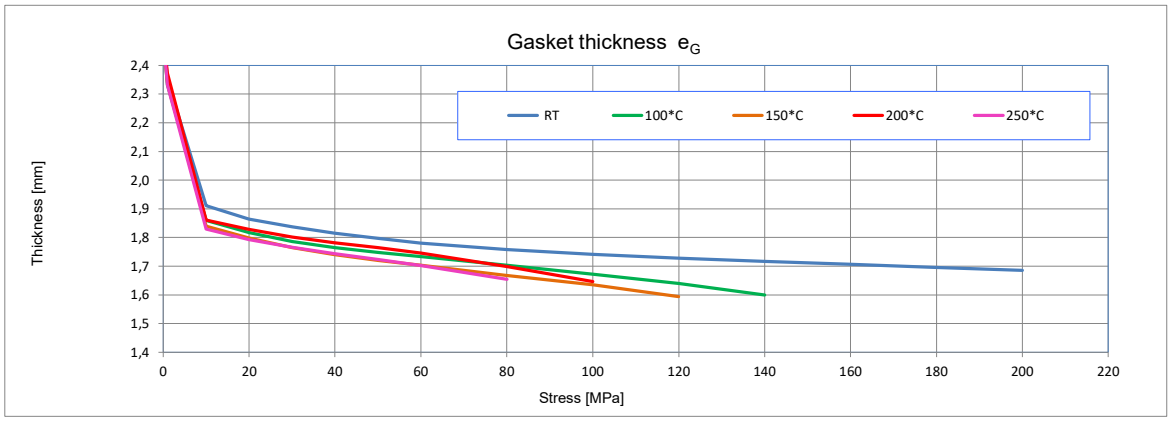
Temperature	RT							
Gasket stress	E_G	eG	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δ_{eGc}	P_{QR}	Δ_{eGc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,550						
1		2,351						
10	452	1,912						
20	1231	1,864						
30	1864	1,837	0,95	0,013				
40	2438	1,815						
50	3124	1,797	0,96	0,016				
60	3821	1,781					200	0,15
80	5265	1,759						
100	6711	1,742	0,98	0,014				
120	7318	1,729						
140	7728	1,717						
160	8272	1,706						
180	8556	1,696						
200	9108	1,686	0,99	0,017				

Temperature	100*C							
Gasket stress	E_G	eG	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,500						
1		2,333						
10	693	1,860						
20	1285	1,817						
30	1972	1,787	0,78	0,056				
40	2723	1,765						
50	3722	1,749	0,85	0,062			140	0,19
60	4313	1,734						
80	5175	1,704						
100	5710	1,672	0,90	0,082				
120	6062	1,640						
140	6338	1,600	0,89	0,130				

Temperature	150*C							
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,500						
1		2,341						
10	875	1,839						
20	1268	1,799						
30	1720	1,765	0,74	0,066				
40	2312	1,740						
50	2912	1,721	0,84	0,069			120	0,17
60	3437	1,703						
80	4276	1,668						
100	4855	1,636	0,83	0,141				
120	5421	1,594	0,81	0,188				

Temperature	200*C							
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,500						
1		2,373						
10	1069	1,861						
20	1453	1,828						
30	1904	1,802	0,72	0,072				
40	2439	1,782						
50	2999	1,765	0,79	0,088			100	0,21
60	3568	1,747						
80	4147	1,699						
100	4624	1,647	0,76	0,203				

Temperature	250*C							
Gasket stress	E_G	e_G	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δe_{Gc}	P_{QR}	Δe_{Gc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,500						
1		2,332						
10	1048	1,830						
20	1515	1,793						
30	2174	1,766	0,63	0,093			80	0,13
40	2770	1,744						
50	3365	1,724	0,68	0,136				
60	3949	1,703						
80	4747	1,655	0,69	0,208				



Description:				
	E_G	Modulus of elasticity	Q_{smax}	Maximum surface pressure
	e_G	Gasket or sealing element thickness	μ_G	Static friction factor
	P_{QR}	Creep relaxation factor	C	Stiffness
	Δ_{eGc}	Gasket thickness change due to creep		

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

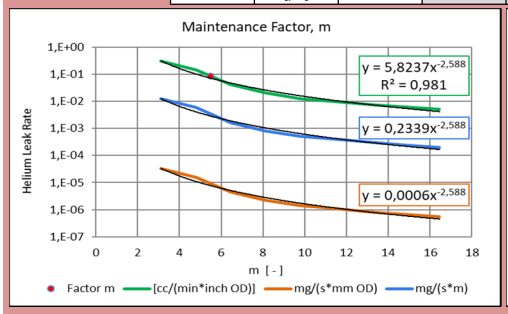
T [°C]	Q_{min} [MPa]	$Q_{max, ref}$ [MPa]	E_0 [MPa]	K_1	Q_l/P	g_c	c_1
0…20	35	80	500	20	1,6	-	0,05
100		70	500	20	1,6	-	
200		60	500	20	1,6	-	

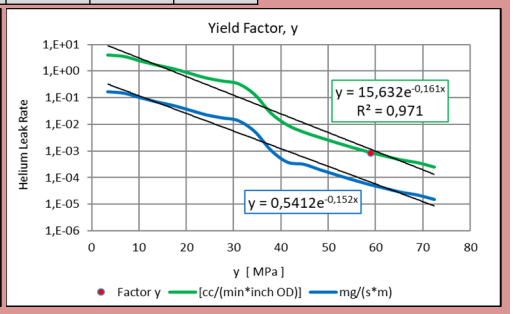
bGref [mm]	19,5	eGref [mm]	2,0

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

Tightness class		ASTM F3149	PVRC Tightness class		EN 13555	
			T3	T4	L0,01	L0,001
Factor m	[-]	5,5	4,3	-	3,6	7,6
Factor y	[MPa]	59,0			54,0	-
	[psi]	8560				





NOTE: Maintenance values [m] less than 2.0 are typically not used in ASME designs except for elastomeric gaskets (Classification D2000).
Gasket dimensions acc. to EN 12560-1 NPS 4 Class 300
The given coefficient values are read from the test curves, not from the trend line.

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]
25*b_D	2,2*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]				
		20°C	100°C	200°C		
35,7	5,7*p_0	1,0	1,4	1,8		

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 [%]
NDA	NDA

Factors acc. to:

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

Temperature [°C]	Creep Relaxation [%]
20	NDA
100	NDA
200	NDA

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=10V	[Ω]		NDA
Volume resistance R_v at U=10V	[Ω]		NDA
Surface resistivity ρ_s at U=10V	[Ω]		NDA
Volume resistivity ρ_v at U=10V	[Ωm]		NDA