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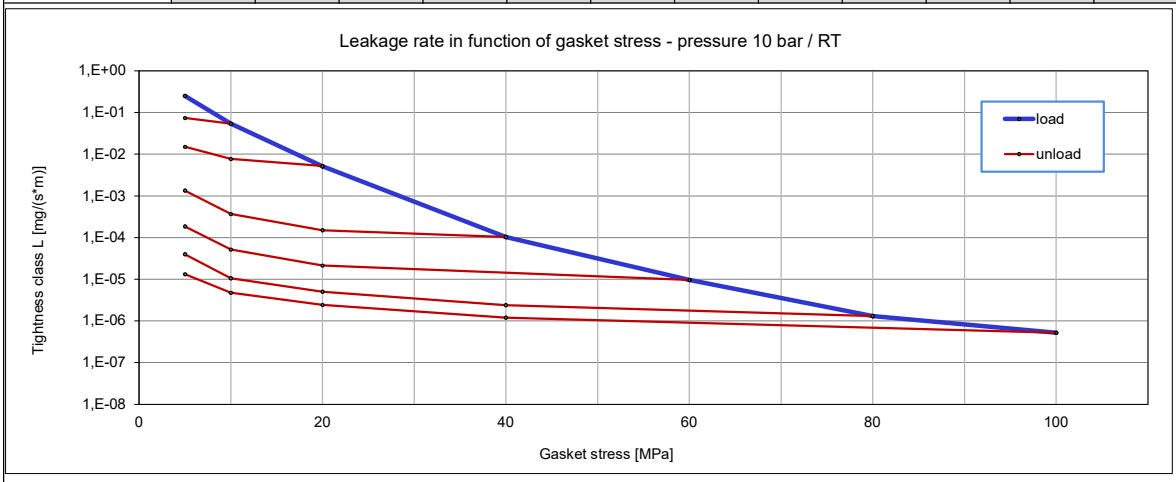
Company	**SPETECH sp. z o.o.**		
Gasket Type	**SPETOBAR® BAS® 300**		
Dimensions [mm]	**92 x 49 x 3 (DN40 PN40)**		
Calculation type EN 1591-1	**a) flat gasket;**	**EN 1514-1**	**IBC**
Notes:	Rev.1 (11-02-2021)		

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

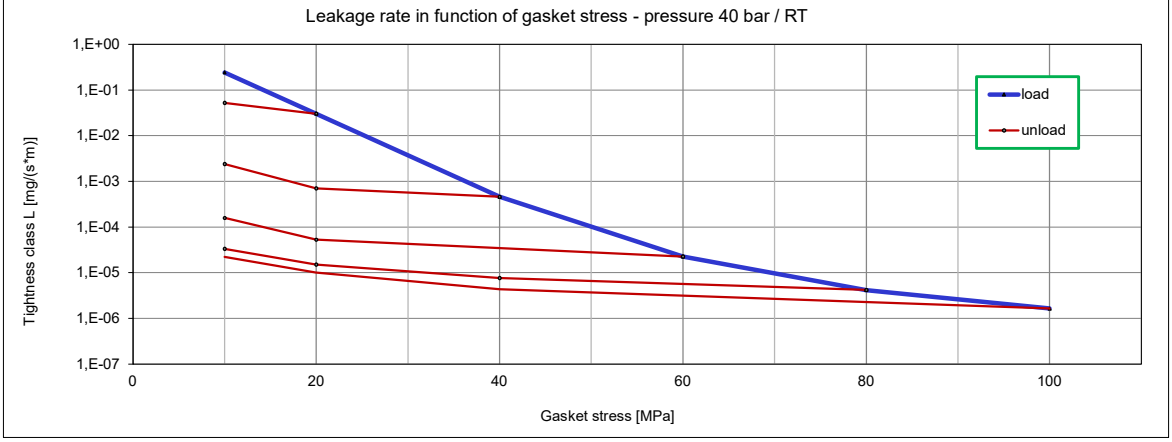
Minimum level of surface pressure required for leakage rate class L on assembly Qmin/L and after off-loading QSmin/L at room temperature (RT)

Internal pressure [bar]	**10**											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		Q_A = 10 [MPa]	Q_A = 20 [MPa]	Q_A = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]					
10^{-0}	5	5	5	5	5	5	5					
10^{-1}	8	5	5	5	5	5	5					
10^{-2}	17		8	5	5	5	5					
10^{-3}	29			6	5	5	5					
10^{-4}	40				8	5	5					
10^{-5}	60					11	7					
10^{-6}	86						54					
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 = 40 [MPa]	Q_A = 60 [MPa]	Q_A = 80 [MPa]	Q_A = 100 [MPa]						
10^{-0}	10	10	10	10	10	10						
10^{-1}	14	10	10	10	10	10						
10^{-2}	25		10	10	10	10						
10^{-3}	36		17	10	10	10						
10^{-4}	50			14	10	10						
10^{-5}	70				32	21						
10^{-6}												
10^{-7}												
10^{-8}												

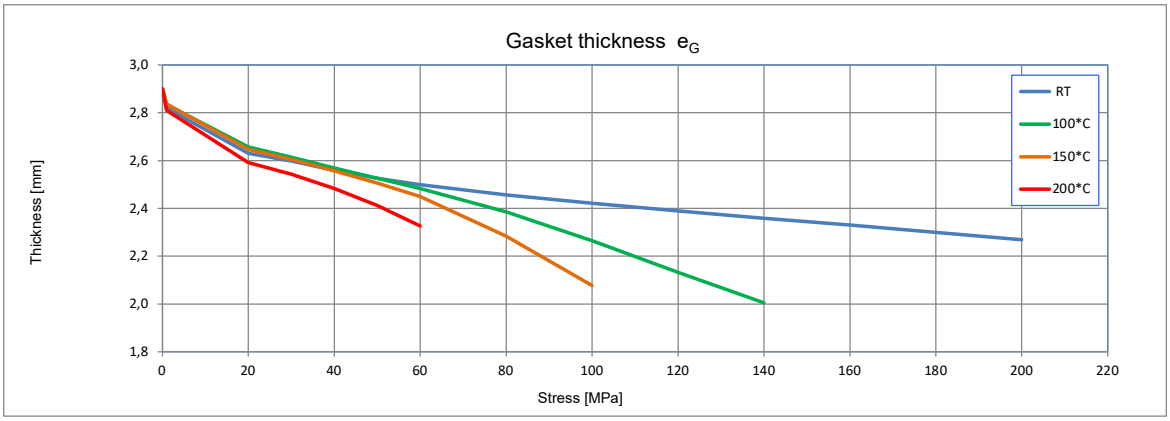


Temperature	RT							
Gasket stress	E_G	eG	C=500 kN/mm		C=1500 kN/mm		Q_{smax}	μ_G
			P_{QR}	Δ_{eGc}	P_{QR}	Δ_{eGc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		2,900						
1		2,819						
20	899	2,631						
30	1474	2,598	0,94	0,014				
40	1976	2,559						
50	2511	2,526	0,95	0,022				
60	3045	2,499						
80	4012	2,456						
100	4816	2,421	0,97	0,028			**200**	0,25
120	5454	2,389						
140	6011	2,359						
160	6555	2,330						
180	6906	2,300						
200	6885	2,270	0,96	0,060				

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		2,900						
1		2,834						
20	1156	2,657						
30	1655	2,614	0,81	0,050				
40	2157	2,569						
50	2586	2,526	0,79	0,089				
60	2963	2,483						
80	3573	2,385						
100	4158	2,265	0,76	0,204			**140**	0,25
120	4688	2,133						
140	5254	2,006	0,72	0,330				

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		2,900						
1		2,836						
20	1456	2,646						
30	1810	2,605	0,73	0,069				
40	2160	2,557						
50	2504	2,506	0,70	0,126			**100**	0,25
60	2817	2,449						
80	3343	2,284						
100	3897	2,078	0,64	0,309				

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		2,900						
1		2,810						
20	1402	2,591						
30	1855	2,544	0,64	0,092			**60**	0,25
40	2166	2,484						
50	2449	2,413	0,64	0,151				
60	2758	2,327	0,61	0,200				



Description:

E_G	Modulus of elasticity	Q_{smax}	Maximum surface pressure
e_G	Gasket or sealing element thickness	μ_G	Static friction factor (based on EN1591-1:2014 Annex E)
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

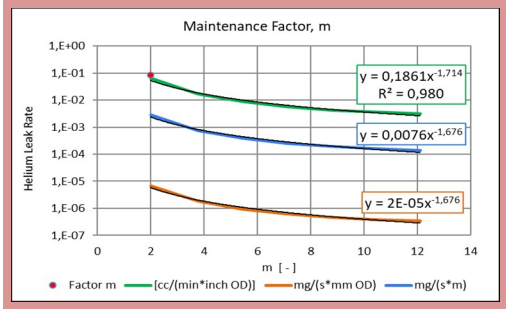
T [°C]	Q_{min} [MPa]	$Q_{max, ref}$ [MPa]	E_0 [MPa]	K_1	Q_f/P	g_c	c_1
20	35	80	500	20	1,6	-	0,05
100		70	500	20	1,6	-	
200		60	500	20	1,6	-	
300							
400							

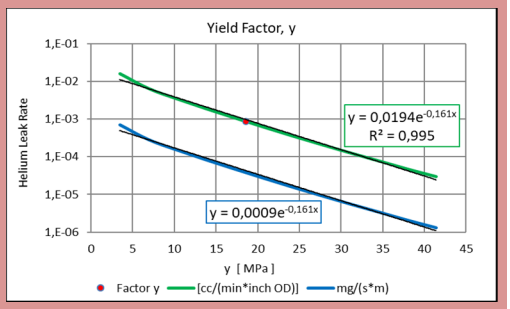
bGref [mm]	19,5	eGref [mm]	2,8

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	[-]	2,0	< 2,0	-	< 2,0	3,4
Factor y	[MPa]	18,6			12,8	27,2
	[psi]	2700				





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 1514-1 DN40 PN40
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]
$18*b_D$	$1,4*b_D$	$*b_D$

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	300°C	400°C
25,5	$4,0*p_0$	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 [%]
7	68

Factors acc. to:

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

Temperature [°C]	Creep Relaxation [%]
20	22
100	69
200	94

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]		1,40E+10
Volume resistance R_v at U=100V	[Ω]		2,13E+09
Surface resistivity ρ_s at U=100V	[Ω]		1,42E+11
Volume resistivity ρ_v at U=100V	[Ωm]		1,06E+09