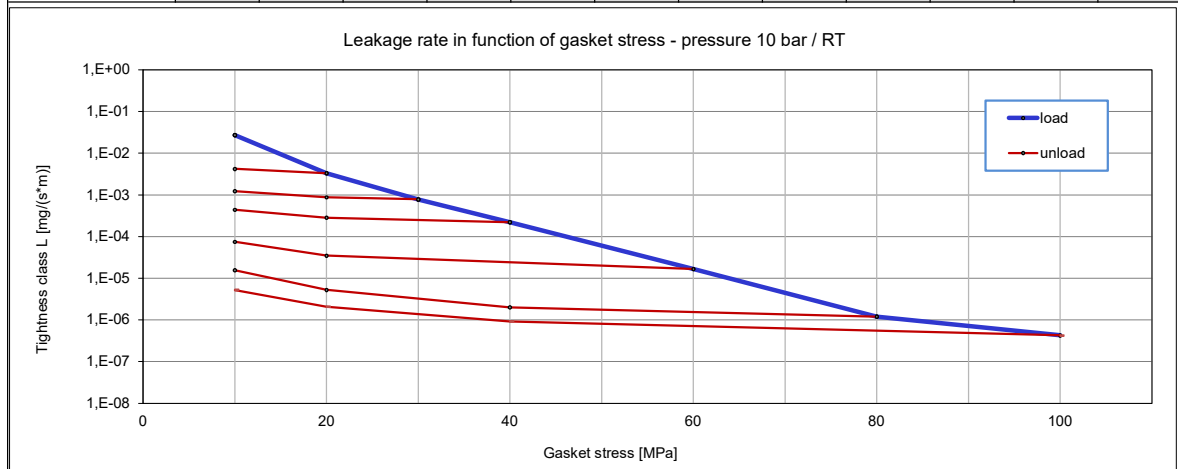


		LABORATORY OF SEALING MATERIALS 43-382 Bielsko-Biala, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl www.laboratory.spetech.eu		 
Company	SPETECH sp. z o.o.			
Gasket Type	SPETOBAR® BAS® 370			
Dimensions [mm]	92 x 49 x 2 (DN40 PN40)			
Calculation type EN 1591-1	a) flat gasket;		EN 1514-1	IBC
Notes:	Rev.1 (12-02-2021)			

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

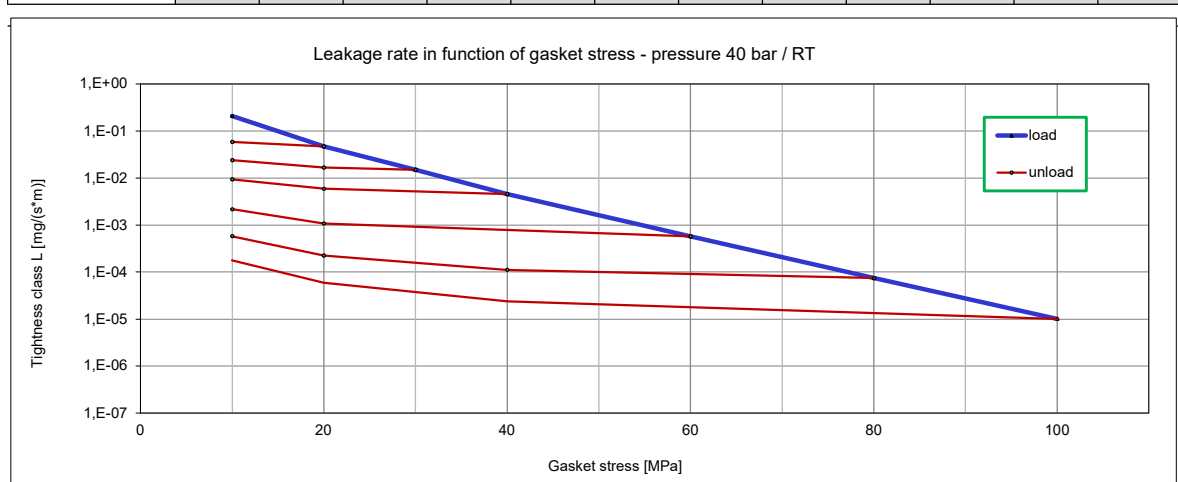
Minimum level of surface pressure required for leakage rate class L on assembly Q_{min}/L and after off-loading Q_{Smin}/L at room temperature (RT)

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]				
10^{-0}	10	10	10	10	10	10	10				
10^{-1}	10	10	10	10	10	10	10				
10^{-2}	15	10	10	10	10	10	10				
10^{-3}	28		16	10	10	10	10				
10^{-4}	46				10	10	10				
10^{-5}	64					14	10				
10^{-6}	83						38				
10^{-7}											



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]		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]				
10^{-0}	10	10	10	10	10	10	10				
10^{-1}	15	10	10	10	10	10	10				
10^{-2}	33			10	10	10	10				
10^{-3}	55				26	10	10				
10^{-4}	77					51	15				
10^{-5}	100										
10^{-6}											
10^{-7}											

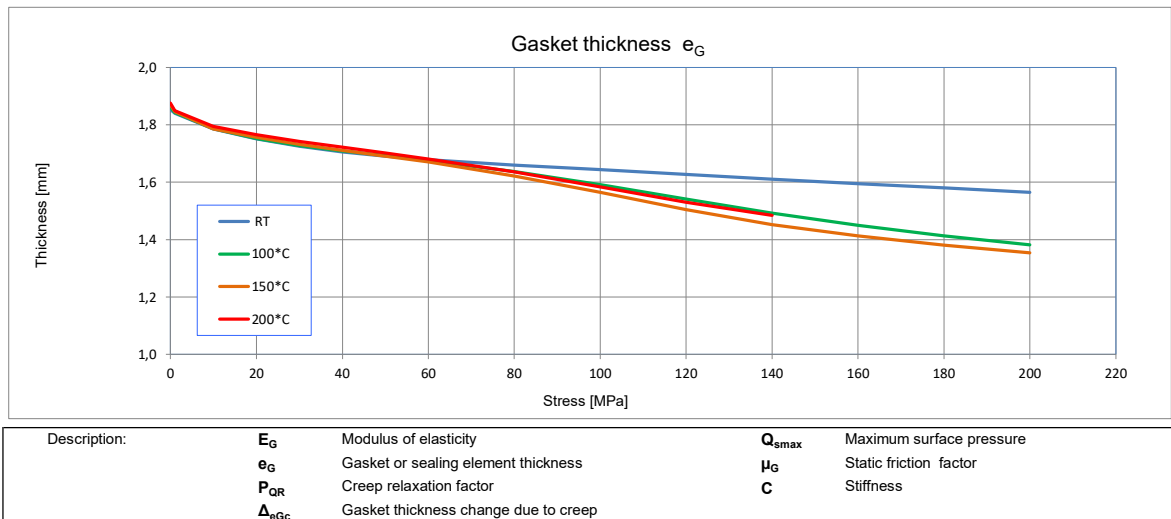


Temperature	RT							
Gasket stress	E _G	eG	C=500 kN/mm		C=1500 kN/mm		Q _{smax}	μ _G
			P _{QR}	Δ _{eGc}	P _{QR}	Δ _{eGc}		
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]	[-]
0		1,854					200	0,18
1		1,841						
10	775	1,786						
20	1208	1,750						
30	1765	1,725	0,97	0,008				
40	2365	1,706						
50	3067	1,691	0,97	0,012				
60	3714	1,679						
80	4682	1,660						
100	5415	1,644	0,98	0,014				
120	6241	1,628						
140	6749	1,610						
160	6958	1,595						
180	7747	1,580						
200	8166	1,564	0,99	0,025				

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		1,861					200	0,19
1		1,843						
10	755	1,787						
20	1326	1,753						
30	1927	1,728	0,91	0,024				
40	2591	1,709						
50	3092	1,692	0,91	0,039				
60	3515	1,676						
80	4065	1,637						
100	4636	1,591	0,88	0,102				
120	5222	1,542						
140	5744	1,492						
160	6195	1,449						
180	6730	1,413						
200	7225	1,382	0,87	0,222				

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		1,870					200	0,17
1		1,846						
10	952	1,785						
20	1298	1,756						
30	1779	1,732	0,91	0,022				
40	2291	1,711						
50	2735	1,691	0,88	0,049				
60	3073	1,671						
80	3639	1,622						
100	4190	1,565	0,82	0,154				
120	4730	1,505						
140	5280	1,453						
160	5768	1,413						
180	6229	1,380						
200	6779	1,354	0,83	0,283				

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		1,876					140	0,18
1		1,850						
10	971	1,794						
20	1390	1,766						
30	1938	1,743	0,86	0,036				
40	2454	1,722						
50	2810	1,702	0,83	0,073				
60	3159	1,682						
80	3682	1,636						
100	4234	1,584	0,77	0,192				
120	4740	1,531						
140	5237	1,485	0,78	0,264				



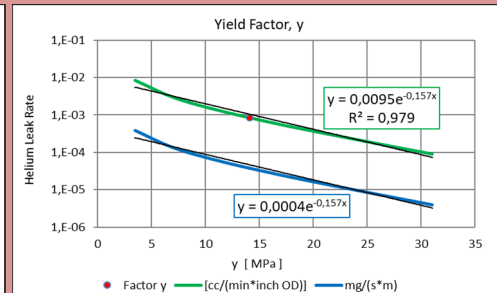
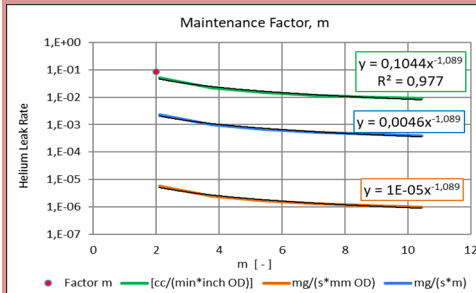
Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2001

T [°C]	Q_{min} [MPa]	$Q_{max, ref}$ [MPa]	E_0 [MPa]	K_1	Q/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	-	
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

Tightness class	ASTM F3149	PVRC Tightness class		EN 13555	
		T3	T4	L0,01	L0,001
Factor m	[-]	2,0	< 2,0	< 2,0	3,7
Factor y	[MPa]	14,1		8,5	23,8
	[psi]	2050			

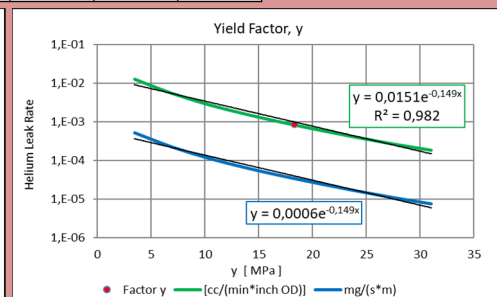
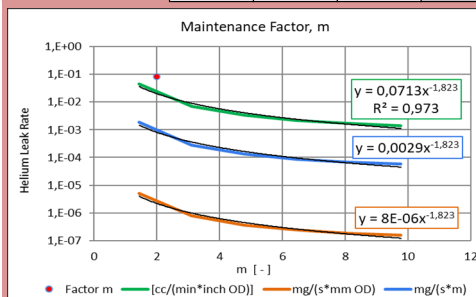


NOTE: Maintenance values [m] less than 2.0 are typically not used in ASME designs except for elastomeric gaskets (Classification D2000).

Gasket dimensions acc. to EN 1514-1 DN40 PN40

The given coefficient values are read from the test curves, not from the trend line.

Tightness class	ASTM F3149	PVRC Tightness class		EN 13555	
		T3	T4	L0,01	L0,001
Factor m	[-]	2,0	< 1,5	< 1,5	2,0
Factor y	[MPa]	18,3		11,1	28,4
	[psi]	2650			



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.

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

Factors acc. to:

AD 2000-Merkblatt B7 August 2007

$k_0 k_D$ [N/mm]	k_1 [mm]	$k_0 k_3$ [N/mm]
18,0*bD	1,4*bD	*bD

[σ_{max} - see maximal applicable gasket stress Q_{max} 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	
25,5	4,0*p0	1,0	1,4	1,8	

[σ_{max} - see maximal applicable gasket stress Q_{max} 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 [%]
8	69

Factors acc. to:

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

Temperature [°C]	Creep Relaxation [%]
20	13
100	45
200	77

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]		2,66E+09
Volume resistance R_v at U=100V	[Ω]		2,25E+09
Surface resistivity ρ_s at U=100V	[Ω]		2,69E+10
Volume resistivity ρ_v at U=100V	[Ωm]		1,67E+09