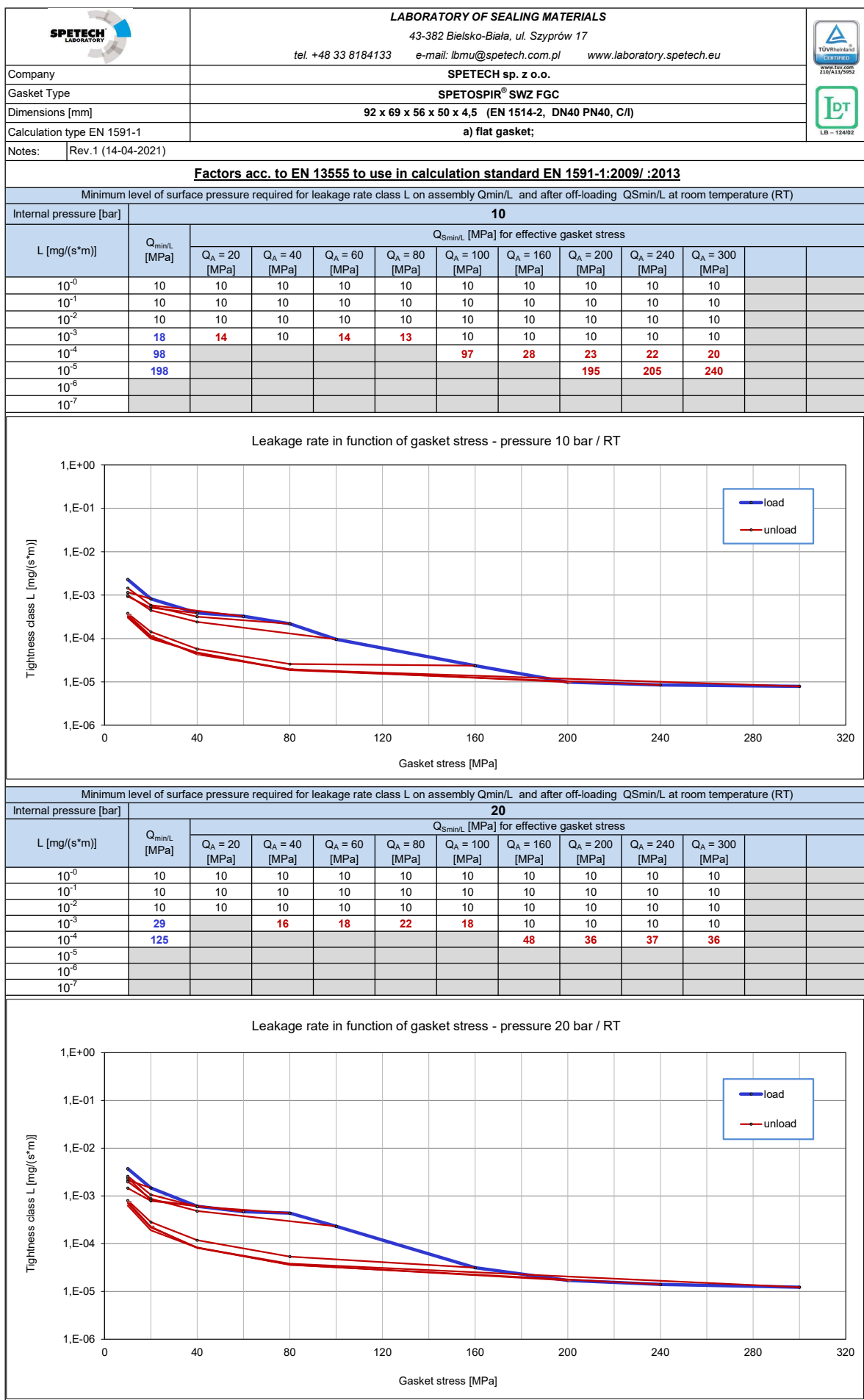
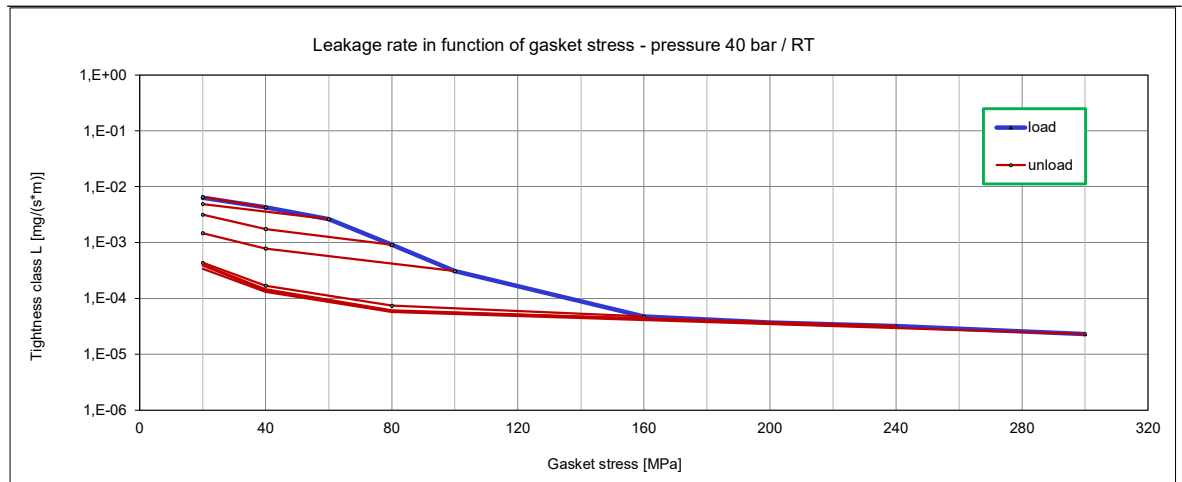
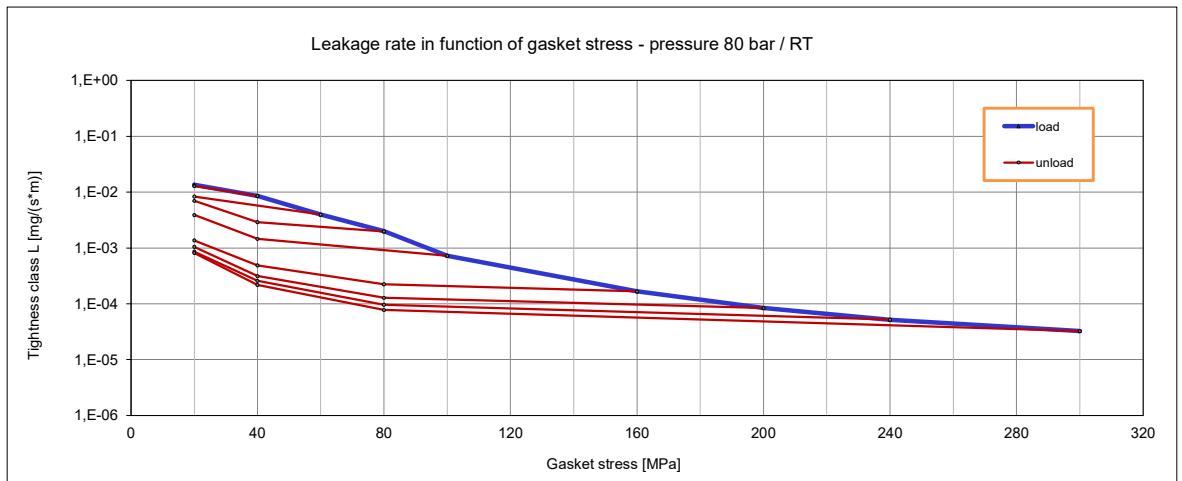




Minimum level of surface pressure required for leakage rate class L on assembly Q _{min/L} and after off-loading Q _{Smin/L} at room temperature (RT)												
Internal pressure [bar]	40											
L [mg/(s*m)]	Q _{min/L} [MPa]	Q _{Smin/L} [MPa] for effective gasket stress										
		Q _A = 20 [MPa]	Q _A = 40 [MPa]	Q _A = 60 [MPa]	Q _A = 80 [MPa]	Q _A = 100 [MPa]	Q _A = 160 [MPa]	Q _A = 200 [MPa]	Q _A = 240 [MPa]	Q _A = 300 [MPa]		
10 ⁻⁰	20		20	20	20	20	20	20	20	20		
10 ⁻¹	20		20	20	20	20	20	20	20	20		
10 ⁻²	20		20	20	20	20	20	20	20	20		
10 ⁻³	78				75	33	20	20	20	20		
10 ⁻⁴	136						65	57	55	53		
10 ⁻⁵												
10 ⁻⁶												
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]	80											
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]	Q _A = 160 [MPa]	Q _A = 200 [MPa]	Q _A = 240 [MPa]	Q _A = 300 [MPa]		
10 ⁻⁰	20		20	20	20	20	20	20	20	20		
10 ⁻¹	20		20	20	20	20	20	20	20	20		
10 ⁻²	33		32	20	20	20	20	20	20	20		
10 ⁻³	94					73	27	21	20	20		
10 ⁻⁴	190							150	78	70		
10 ⁻⁵												
10 ⁻⁶												
10 ⁻⁷												

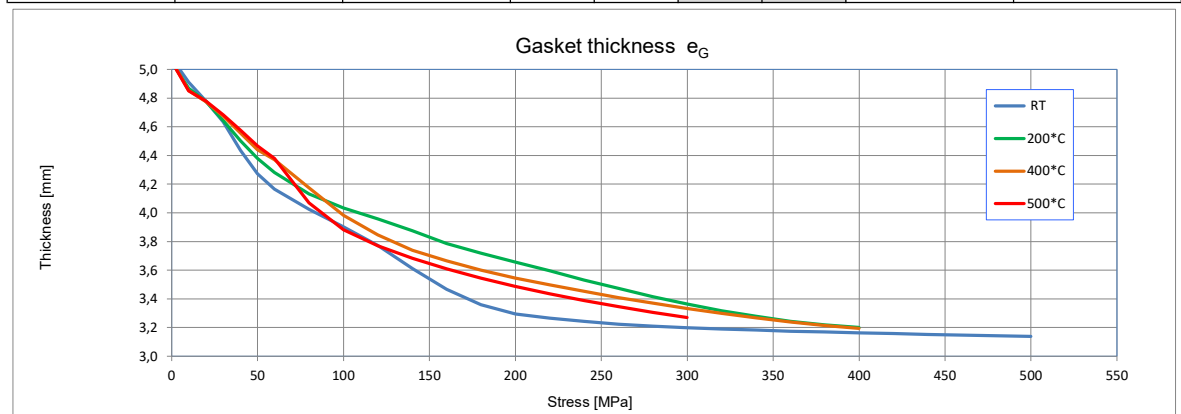


Temperature	RT						
Gasket stress	E _G	eG	C=500 kN/mm		C=1500 kN/mm		Q _{smax}
			P _{QR}	Δe _{Gc}	P _{QR}	Δe _{Gc}	
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]
0		5,070					500
1		5,062					
10	1603	4,911					
20	2719	4,778					
30	3451	4,634					
40	3583	4,436					
50	4101	4,272	0,97	0,004			
60	4410	4,166					
80	4890	4,023					
100	5602	3,903	0,97	0,007			
120	6491	3,772					
140	7368	3,612					
160	8529	3,466					
180	10123	3,359					
200	12405	3,294					
220	15464	3,266					
240	18700	3,243					
260	21600	3,224					
280	25166	3,211					
300	28567	3,200					
320	32805	3,190					
340	36721	3,183					
360	40927	3,176					
380	45330	3,169					
400	49519	3,164					
420	49882	3,158					
440	57317	3,153					
460	59073	3,148					
480	59196	3,143					
500	65216	3,138	1,00	0,007			

Temperature	200°C						
Gasket stress	E _G	eG	C=500 kN/mm		C=1500 kN/mm		Q _{smax}
			P _{QR}	Δe _{Gc}	P _{QR}	Δe _{Gc}	
[MPa]	[MPa]	[mm]	[-]	[mm]	[-]	[mm]	[MPa]
0		5,048					400
1		5,033					
10	2110	4,868					
20	3641	4,775					
30	5242	4,642					
40	6269	4,501					
50	6772	4,379	0,85	0,019			
60	7134	4,281					
80	7941	4,133					
100	10361	4,033	0,88	0,030			
120	13335	3,958					
140	16152	3,875					
160	19117	3,785					
180	21852	3,719					
200	24700	3,656					
220	26650	3,595					
240	28171	3,532					
260	30087	3,473					
280	31454	3,415					
300	32706	3,366					
320	34076	3,318					
340	35496	3,279					
360	36819	3,244					
380	38996	3,219					
400	40940	3,201	0,97	0,027			

Temperature	400°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		5,070					400	0,11
1		5,041						
10	1479	4,852						
20	3279	4,773						
30	4821	4,674						
40	5873	4,557						
50	6500	4,439	0,75	0,032				
60	7189	4,370						
80	7061	4,174						
100	8388	3,982	0,81	0,048				
120	9921	3,845						
140	11734	3,740						
160	14256	3,665						
180	16333	3,600						
200	18339	3,546						
220	20606	3,498						
240	22149	3,452						
260	22756	3,409						
280	24634	3,371						
300	26153	3,334						
320	26575	3,301						
340	28832	3,270						
360	29620	3,240						
380	30403	3,214						
400	32682	3,194	0,96	0,043				

Temperature	500°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		5,070					340	-
1		5,035						
10	1738	4,850						
20	3423	4,778						
30	4774	4,683						
40	5765	4,576						
50	6577	4,468	0,64	0,046				
60	7124	4,378						
80	7503	4,070						
100	9468	3,882	0,75	0,063				
120	12017	3,772						
140	14381	3,684						
160	16560	3,611						
180	18430	3,546						
200	20062	3,487						
220	21122	3,435						
240	22777	3,388						
260	23968	3,345						
280	25365	3,307						
300	26748	3,272	0,95	0,046				



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
	Δe _{Gc}	Gasket thickness change due to creep		

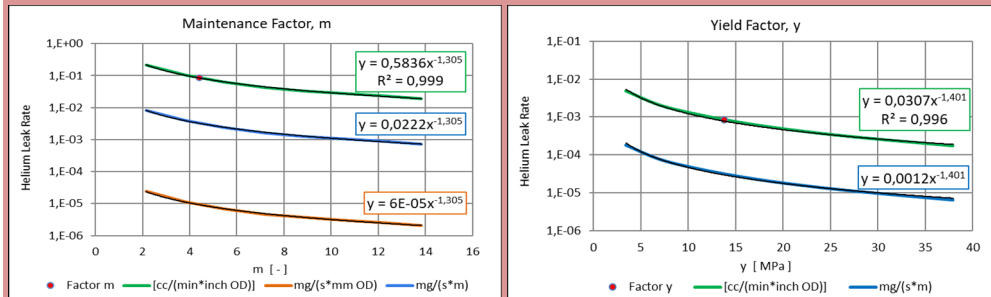
Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2001

T [°C]	Q _{min} [MPa]	Q _{max, ref} [MPa]	E ₀ [MPa]	K ₁	Q ₁ /P	g _c	c ₁
20	50	300	10000		1,6	1,0	
100		280	10000		1,6	1,0	
200		250	10000		1,6	1,0	
300		220	10000		1,6	1,0	
bGref [mm]		6,5		eGref [mm]		4,5	

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	[-]	4,4	2,5	19,4	< 2,1	11,0
Factor y	[MPa]	13,8			6,0	29,8
	[psi]	2000				



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 1514-2 DN40 PN40
 The given coefficient values are read from the test curves, not from the trend line.

[σ_{max} - see maximal applicable gasket stress Q_{smax} 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 ₉ [N/mm]
45*b _D	1,3*b _D	*b _D

[σ_{max} - see maximal applicable gasket stress Q_{smax} acc. EN 1591-1:2009/2013](#)

Factors acc. to:

WUOT-UC-WO-O/19

σ _m [MPa]	σ _r [MPa]	b [1]				
		20°C	100°C	200°C	300°C	400°C
33,1	3,9*p ₀	1,0	1,1	1,1	1,1	1,1

[σ_{max} - see maximal applicable gasket stress Q_{smax} 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]	<	1,00E+03
Volume resistance R _v at U=10V	[Ω]	<	1,00E+03
Surface resistivity ρ _s at U=10V	[Ω]	<	1,01E+04
Volume resistivity ρ _v at U=10V	[Ωm]	<	3,72E+02