

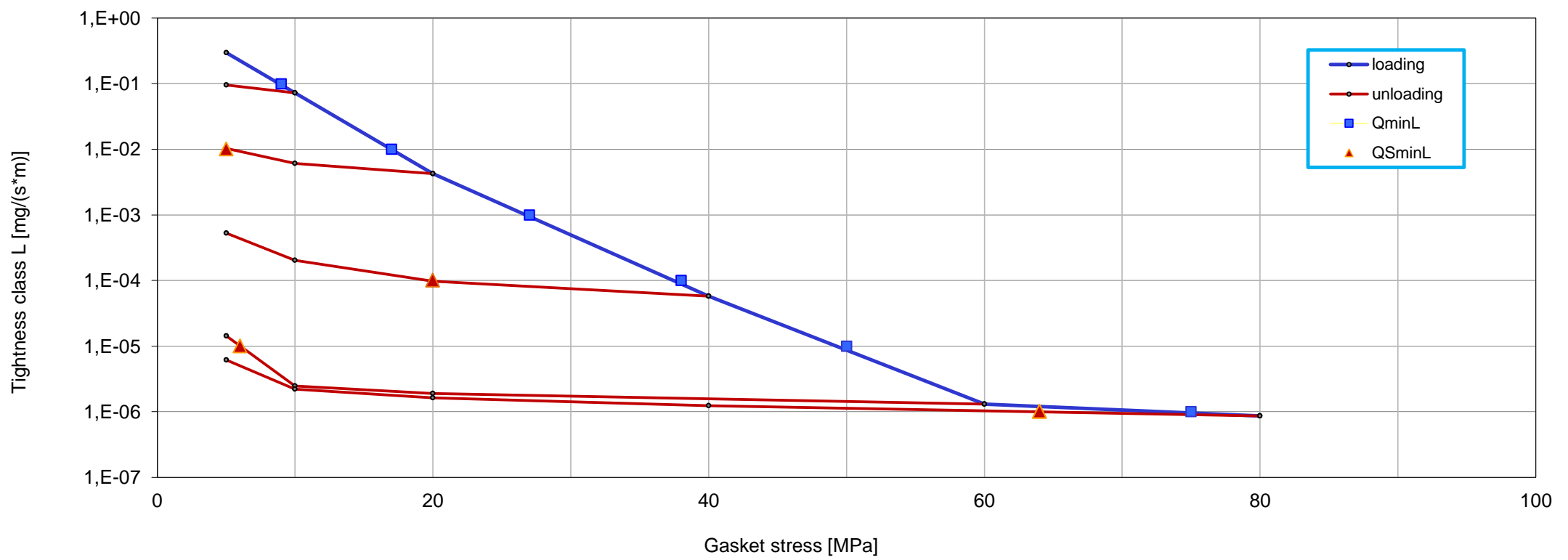
Company	SPETECH sp. z o.o.
Gasket Type	SPETOFLON® TEX FGR
Dimensions [mm]	92 x 49 x 2
Calculation type EN 1591-1	a) flat gasket; EN 1514-1

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 $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

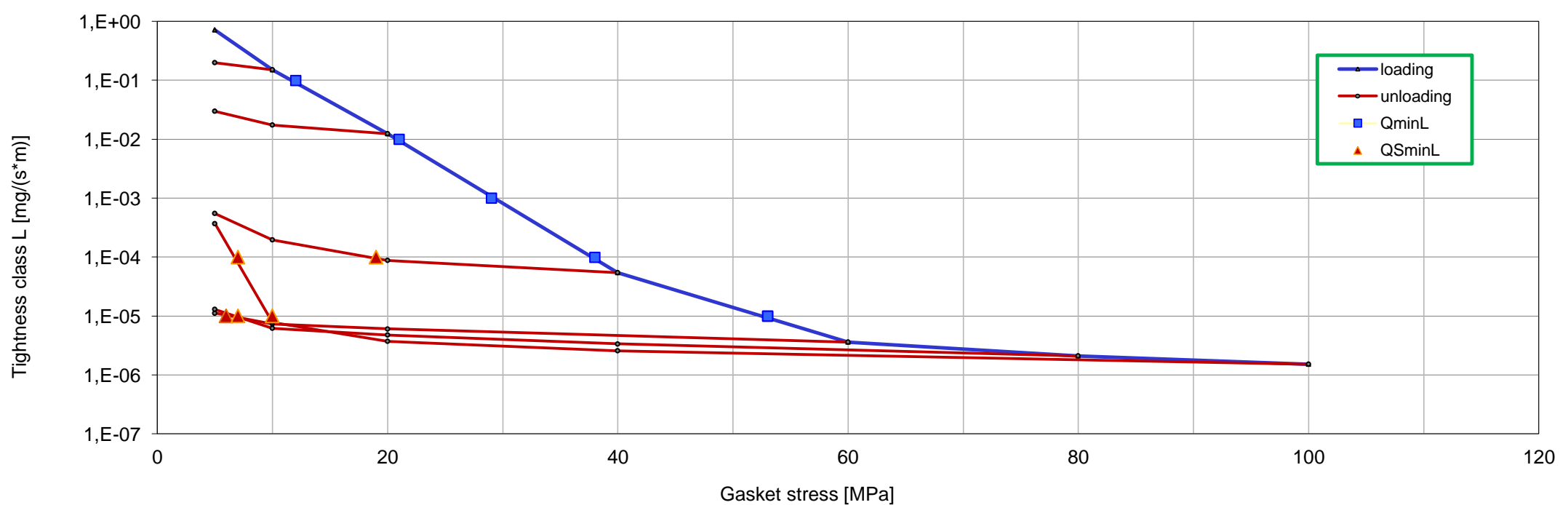
Internal pressure [bar]	10											
L [mg/(s*m)]	$Q_{min/L}$ [MPa]	$Q_{Smin/L}$ [MPa] for effective gasket stress										
		$Q_A = 10$ [MPa]	$Q_A = 20$ [MPa]	$Q_A = 40$ [MPa]	$Q_A = 60$ [MPa]	$Q_A = 80$ [MPa]	$Q_A = 100$ [MPa]	$Q_A = 120$ [MPa]	$Q_A = 140$ [MPa]	$Q_A = 160$ [MPa]		
10^{-0}	5	5	5	5	5	5						
10^{-1}	9	5	5	5	5	5						
10^{-2}	17		5	5	5	5						
10^{-3}	27			5	5	5						
10^{-4}	38			20	5	5						
10^{-5}	50				6	5						
10^{-6}	75					64						

Leakage rate as a function of gasket stress - pressure 10 bar / RT

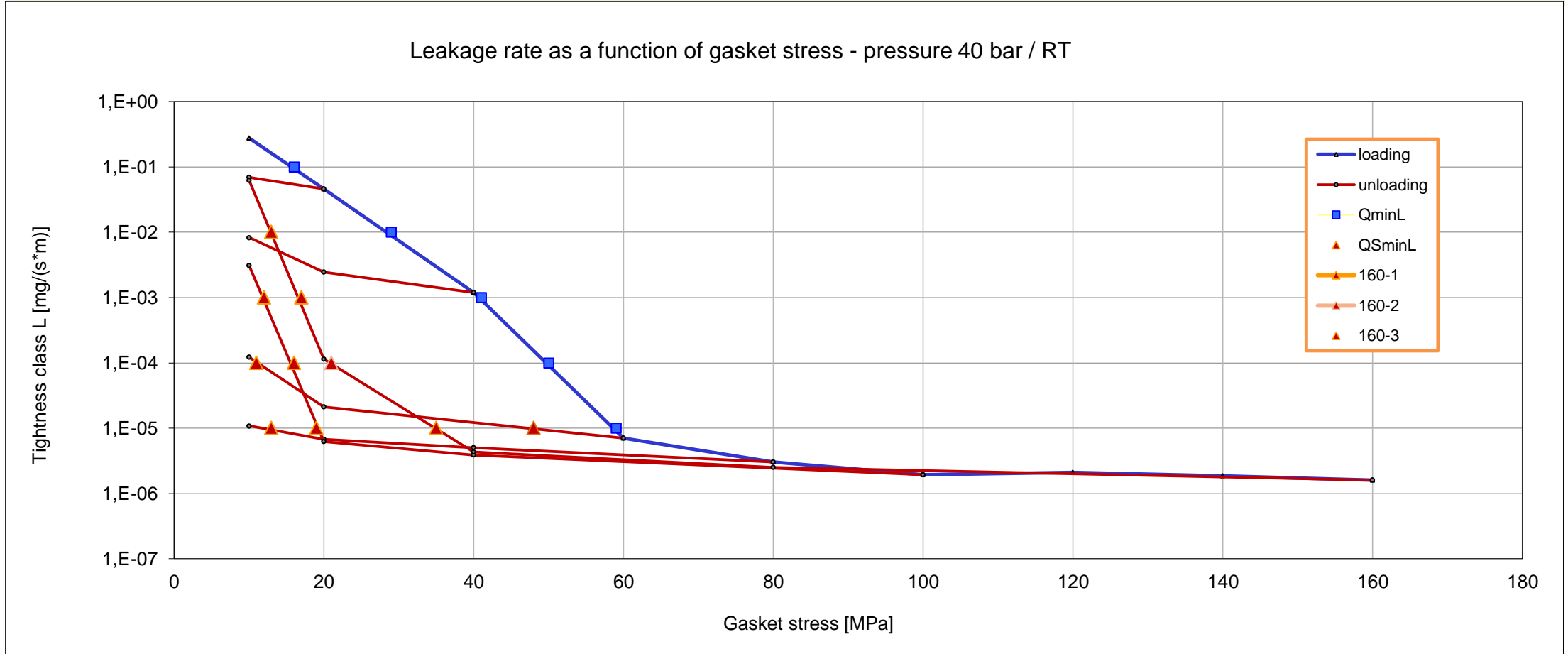

 Minimum level of surface pressure required for leakage rate class L on assembly $Q_{min/L}$ and after off-loading $Q_{Smin/L}$ at room temperature (RT)

Internal pressure [bar]	20											
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]	$Q_A = 120$ [MPa]	$Q_A = 140$ [MPa]	$Q_A = 160$ [MPa]		
10^{-0}	5	5	5	5	5	5						
10^{-1}	12		5	5	5	5						
10^{-2}	21			5	5	5						
10^{-3}	29			5	5	5						
10^{-4}	38			19	5	5	7					
10^{-5}	53				6	7	10					
10^{-6}												

Leakage rate as a function of gasket stress - pressure 20 bar / RT



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 = 10 [MPa]	Q _A = 20 [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				10	
10 ⁻¹	16		10	10	10	10	10				10	
10 ⁻²	29			10	10	10	10				13	
10 ⁻³	41				10	10	12				17	
10 ⁻⁴	50				11	10	16				21	
10 ⁻⁵	59				48	13	19				35	
10 ⁻⁶												



Parameters at RT						
Gasket stress [MPa]	Unloading modulus of elasticity EG [MPa]	Gasket or sealing element thickness e _G [mm]	Creep relaxation factor P _{QR} [-]	Gasket thickness change due to creep Δe _{Gc} [mm]	Maximum surface pressure Q _{Smax} [MPa]	Static friction factor μ _G [-]
0		2,315			200	0,05
1		1,518				
10	223	0,876				
20	553	0,787				
30	1016	0,752	0,93	0,018		
40	1541	0,734				
50	2011	0,722	0,94	0,025		
60	2461	0,703				
80	3200	0,656				
100	3745	0,618				
120	3902	0,588				
140	4481	0,566				
160	4811	0,547				
180	5059	0,531				
200	5274	0,516	0,97	0,049		

Parameters at 150°C						
Gasket stress [MPa]	Unloading modulus of elasticity EG [MPa]	Gasket or sealing element thickness e _G [mm]	Creep relaxation factor P _{QR} [-]	Gasket thickness change due to creep Δe _{Gc} [mm]	Maximum surface pressure Q _{Smax} [MPa]	Static friction factor μ _G [-]
0		2,280			50	0,05
1		1,389				
10	389	0,669				
20	889	0,500				
30	1213	0,402	0,46	0,136		
40	1556	0,343				
50	2010	0,303	0,40	0,250		

Parameters at 230°C						
Gasket stress [MPa]	Unloading modulus of elasticity EG [MPa]	Gasket or sealing element thickness e _G [mm]	Creep relaxation factor P _{QR} [-]	Gasket thickness change due to creep Δe _{Gc} [mm]	Maximum surface pressure Q _{Smax} [MPa]	Static friction factor μ _G [-]
0		2,210			30	0,05
1		1,228				
10	289	0,533				
20	639	0,368				
30	911	0,283	0,31	0,173		

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
0...20	12	150	500	40	1,3	1,0	0,00
100	-	150	1500	35	1,3	0,9	-
200	-	150	2500	30	1,3	0,8	-
bGref [mm]		19,5		eGref [mm]		2,3	

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]
2,50	2800	19,3

[σ_{max} - see maximal applicable gasket stress Q_{max} 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 _θ [N/mm]
24,5*b _D	2,5*b _D	*b _D

[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
19,7	5,0*p ₀	1,1	1,8	2,6

[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 [%]
53	16

Factors acc. to:

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

Temperature [°C]	Creep Relaxation [%]
20	39
100	68
200	89

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]	6,88E+10
Volume resistance R _v at U=100V	[Ω]	7,68E+11
Surface resistivity ρ _s at U=100V	[Ω]	6,96E+11
Volume resistivity ρ _v at U=100V	[Ωm]	5,71E+11