

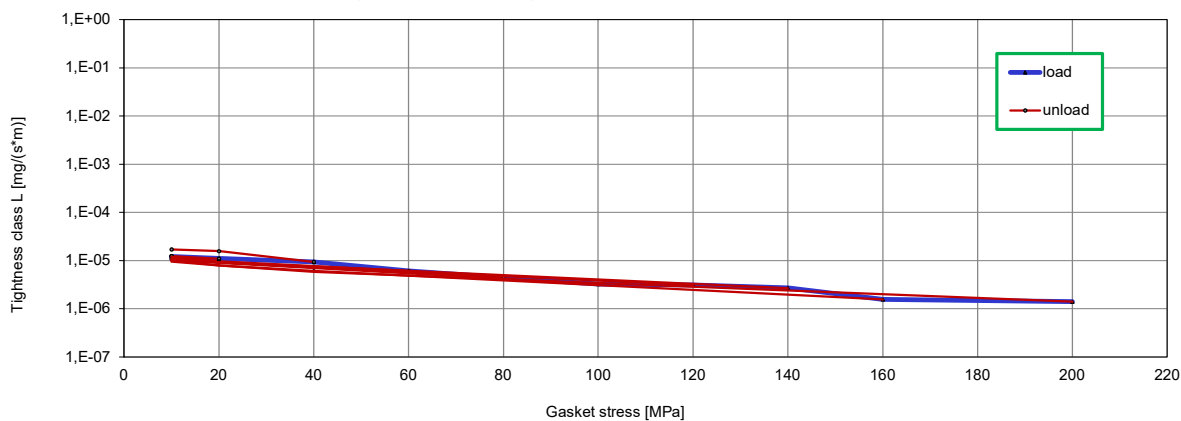
		LABORATORY OF SEALING MATERIALS 43-382 Bielsko-Biala, ul. Szyprów 17 tel. +48 33 8184133 e-mail: lbmu@spetech.com.pl www.laboratory.spetech.eu			 www.tuv.com 210/AL/5953
Company		SPETECH sp. z o.o.			
Gasket Type		DRYFLEX® PTFE			 LB - 124/02
Dimensions [mm]		69 x 53 x 3,6 (DN40 PN40)			
Calculation type EN 1591-1		a) flat gasket;		EN 1514-6	NR
Notes:	Rev.1 (10-02-2021)				

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]		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]	$Q_A = 200$ [MPa]	
10^{-0}	10		10	10	10	10	10	10	10	10	10	
10^{-1}	10		10	10	10	10	10	10	10	10	10	
10^{-2}	10		10	10	10	10	10	10	10	10	10	
10^{-3}	10		10	10	10	10	10	10	10	10	10	
10^{-4}	10		10	10	10	10	10	10	10	10	10	
10^{-5}	33			37	18	15	12	15	17	11	10	
10^{-6}												
10^{-7}												
10^{-8}												

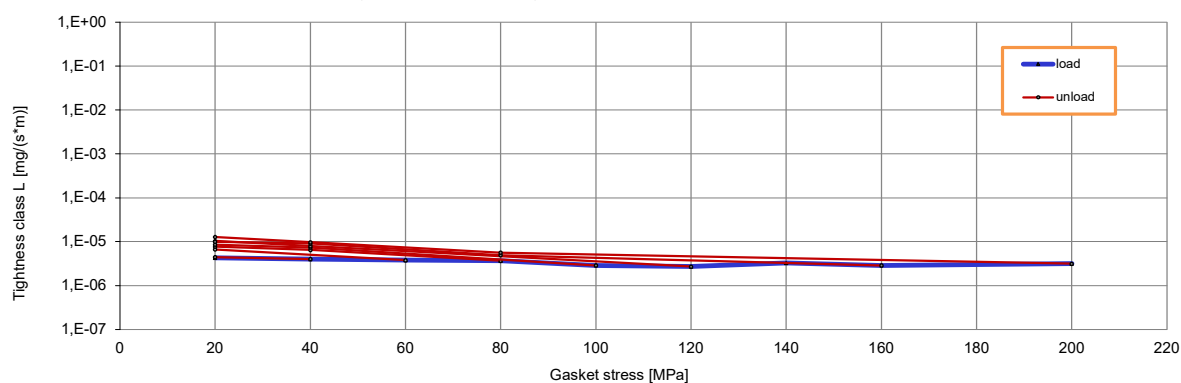
Leakage rate in function of gasket stress - pressure 40 bar / RT



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]		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]	$Q_A = 120$ [MPa]	$Q_A = 140$ [MPa]	$Q_A = 160$ [MPa]	$Q_A = 200$ [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}	20		20	20	20	20	20	20	20	20		
10^{-4}	20		20	20	20	20	20	20	20	20		
10^{-5}	20		20	20	20	20	23	27	20	38		
10^{-6}												
10^{-7}												
10^{-8}												

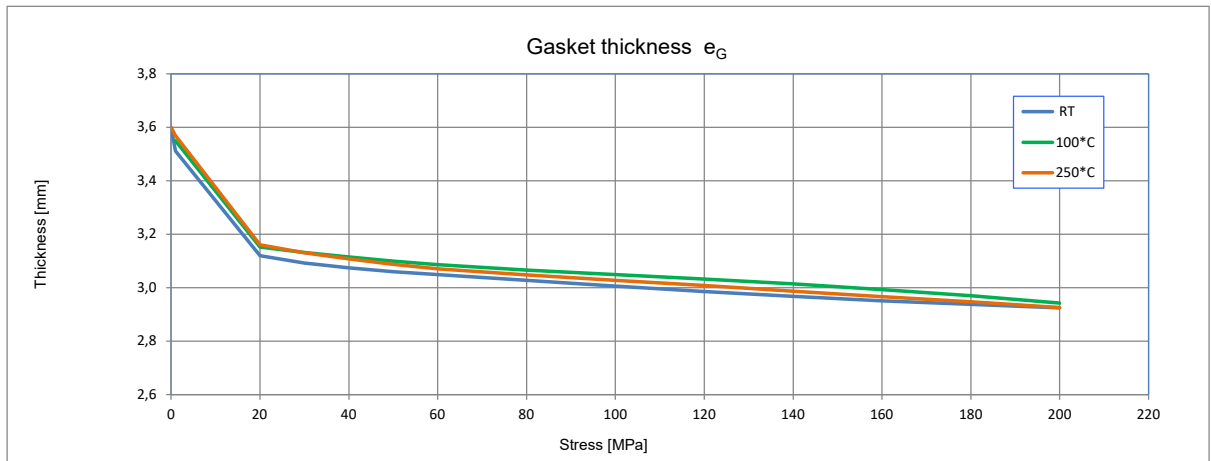
Leakage rate in function of gasket stress - pressure 80 bar / RT



Temperature	RT						
Gasket stress	E_G	e_G	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		3,600					200
1		3,511					
20	3262	3,120					
30	4692	3,092	0,83	0,016			
40	6052	3,074					
50	7316	3,060					
60	8190	3,049					
80	9353	3,028					
100	10233	3,006	0,97	0,011			
120	11179	2,986					
140	12252	2,968					
160	13088	2,951					
180	13996	2,938					
200	14805	2,925	0,98	0,011			

Temperature	100°C						
Gasket stress	E_G	e_G	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		3,600					200
1		3,549					
20	3670	3,152					
30	5485	3,132	0,66	0,032			
40	6790	3,115					
50	7848	3,099					
60	8833	3,086					
80	10155	3,066					
100	10840	3,050	0,96	0,011			
120	12009	3,033					
140	12846	3,014					
160	13517	2,993					
180	14171	2,970					
200	14573	2,943	0,97	0,020			

Temperature	250°C						
Gasket stress	E_G	e_G	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		3,600					200
1		3,569					
20	2742	3,160					
30	3589	3,131	0,65	0,033			
40	4298	3,108					
50	4866	3,087					
60	5467	3,071					
80	6389	3,048					
100	7384	3,028	0,95	0,015			
120	8212	3,008					
140	8980	2,987					
160	10019	2,967					
180	11230	2,947					
200	12443	2,926	0,93	0,044			



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 _i /P	g _c	c ₁
0...20	10	500	16000	-	1,3	0,9	0
100		480	16000	-	1,3	0,8	-
200		450	16000	-	1,3	0,7	-
300		420	16000	-	1,3	0,6	-
bGref [mm]		8,0		eGref [mm]		3,6	

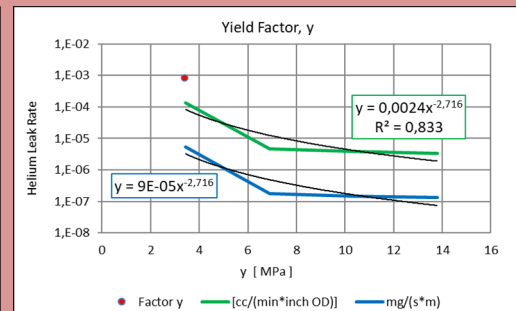
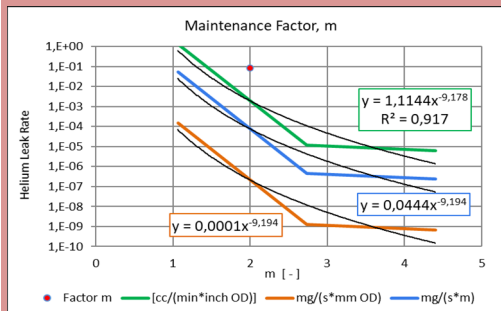
Factors acc. to:

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	
Factor m	[-]	2,0	1,4	2,0
	[MPa]	3,4		
	[psi]	493		
Factor y				



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 1514-6 PN40 DN40.

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

[Qmax - 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 ₉ [N/mm]
20,0*b _D	21,1*b _D	*b _D

[Qmax - 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	
20,4	5,0*p ₀	1,1	1,1	1,1	NDA
					NDA

[Qmax - 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=100V	>	1,00E+12
Volume resistance R _v at U=100V	>	1,00E+12
Surface resistivity ρ _s at U=100V	>	1,01E+13
Volume resistivity ρ _v at U=100V	>	4,02E+11