



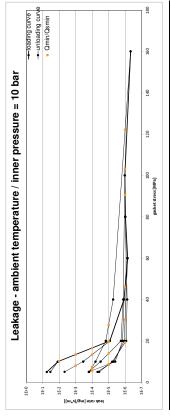


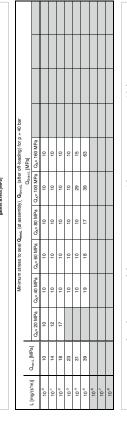
Werte nach EN 13555:

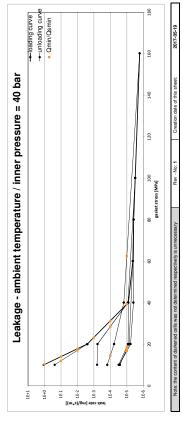
Company Address	22		A.W.Schul	A.W.Schultze GmbH, Mercatorstr. 10, 21502 Geesthacht, Germany	atorstr. 10, 21.	502 Geesthacht	. Germany		Accord	According to
Gasket Type				Egraflex 5	Egrafiex Steelflon Waveline WLP	iine WLP				13333
Sealing element dimensions [mm]	[mm] suo				92 x 49 x 2.3				2014-07	4-0×
			Relaxat	Relaxation ratio Pos for stiffness C = 500 kN/mm	tiffness C = 500	kNmm				
O contrat of contra	temperatu	temperature 1 [25 °C]	temperature	temperature 2 [100 °C]	temperature	temperature 3 [200 °C]	temperatur	temperature 4 [300 °C]		
CRISAGI SILESS	Post	Δe _{Go} [mm]	Pos	Mego [mm]	ъ. Б	∆e ∞ [mm]	Pos	Δe _{Go} [mm]	Pos	Δe _{Go} [mm]
Stress level 1 [30 MPa]	66'0	0,003	0,92	0,020	98'0	00'0	0,94	0,016		
Stress level 2 [50 MPa]	1,00	0,002	66'0	0,004	0,97	0,015	96'0	0,019		
			Pos and A	$P_{\alpha n}$ and $\Delta e_{\alpha o}$ at maximal applicable gasket stress Q_{smax}	plicable gasket str	ess Q _{erra} x				
Pon at Osmax	66'0	0,018	96'0	850'0	96'0	0,074	0,91	0,106		
Osmax	022	220 MPa	180	180 MPa	160	160 MPa	140	140 MPa		

		ambient temperature	temperature 1 [100 °C]	1000	temperature 2 [200 °C]	2 [200 °C]	temperature 3 [300 °C]	3 300 °C		
Gasket stress [MPa]	E. BADal	e fmm]	E MDel	e [mm]	E (MDs)	e fmml	(*GW) II	e [mm]	[POW]	o fmml
0	[a La	filling Da	[m m] 0	filling Sp	La l'illi a)	[mm] 0a	fo mal Da	finnel Da	fo mul 9m	1 Da
-		2,044		2,073		2,079		2,063		
20	528	1,619	596	1,617	646	1,628	623	1,601		
30	853	1,557	894	1,559	841	1,564	820	1,548		
40	1250	1,490	1275	1,484	1323	1,500	1176	1,503		
20	1445	1,448	1609	1,454	1805	1,470	1545	1,453		
09	1939	1.427	1886	1.430	1781	1441	1632	1.416		
. 08	2919	1.394	2659	1.392	2387	1394	2839	1.364		
100	3549	1,369	4016	1.363	4361	1,363	2930	1,321		
120	3908	1,343	3184	1,327	3058	1,317	3843	1,279		
140	4283	1,324	4809	1,300	5765	1281	4379	1.238		
160	6167	1.312	5719	1272	6665	1246				
180	7443	1.299	6504	1240						
300	5772	1 280								
250	5971	1.261								
			Ğä	Gasket thickness e _G	ckness	6				
_									-ambient temperature	mperati
2.1									100f°C1	
									100[0]	
									-zool-ci	
1,9									-300[°C]	
[ww										
1,7										
sthiks										
gaske 1.5	/									
1,3					$\ $					
:										
1,1 0		8		100			150		200	
				gasket	gasket stress [MPa]					

0	Company Address	8		A.W.Schuli	ге GmbH, Меп	A.W.Schulze GmbH, Mercatorstr. 10, 21502 Geesthacht, Germany	502 Geesthach	, Germany		According to
	Gasket Type				Egraflex.	Egrafiex Steelflon Waveline MLP	line WLP			DIN EN 13333
Sealing	Sealing element dimensions [mm]	ons [mm]				92 x 49 x 2.3				2014-07
			Minimum	stress to seal Q	mint (at assembly	Minimum stress to seal $Q_{min,L}$ (at assembly), $Q_{Srrin,L}$ (after off-loading) for $p = 10$ bar	off-loading) for p	= 10 bar		
Company of	- Contraction					Osmnt [MPa]	[MPa]			
L [mg/(s m)]	L [IIIg/(8 III)] Centr [mr a]	Q _A = 10 MPa	Q _A = 20 MPa	Q _A = 40 MPa	Q _A = 60 MPa	Q _A = 80 MPa	Q _A = 80 MPa	Q _A = 160 MPa		
10.0	2	9	9	9	9	9	2	2		
10.1	2	2	2	9	9	5	2	2		
10-2	10		9	9	9	9	2	9		
10-3	13		8	9	9	9	2	9		
10-4	17		13	9	9	5	7			
10-6	20		20	6	6	6	14	28		
10-6	46				00	19		122		
10.7										
10-8										
		Leakac	e - amb	ient tei	mperati	ure / inr	er pres	Leakage - ambient temperature / inner pressure = 10 bar	0 bar	
0.21) 								







Quelle: www.gasketdata.org

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EGRAFLEX STEELFLON WAVELINE WLP®

Multilayer flat gasket with huge potential

System operators and gasket manufacturers are constantly looking for better solutions to seal flange connections efficiently, reliably and safely without harming the environment. For applications in the higher temperature range, graphite composite materials, PTFE-based materials and metal-soft material gaskets are becoming increasingly important.

Teams made up of system operators and lawmakers are contributing towards defining valid specifications for all operators. This aims to ensure that the required claims for environmental protection and plant safety are complied with.



The aforementioned material combinations continually come up against application limits.

Aim of the product development:

Only the positive properties, as shown in the table below, should become effective. The result is a sealing plate from the components graphite and stainless steel films with PTFE covering films attached on both sides in adhesive-free (!) composite – the multilayer plate "Egraflex Steelfl on MF®"

Properties	PTFE	Graphite	Stainless Steal	Egraflex Steelflon Waveline WLP®
Compensating unevenness	medium	very good	poor	very good
Required area compression/ clamping force	medium	medium	very high	very low
Handling	very good	poor	good	very good
Chemical resistance	very good	good	good	good
Sealing performance	very good	good	very good	very good
Resilience	poor	good	poor	good
Internal pressure resistance	medium	medium	very good	good
Aging resistance	good	very good	very good	very good
Temperature resistance	medium	good	very good	medium
Availability of special geometries	good	good	poor	good
Disposal	poor	good	good	good

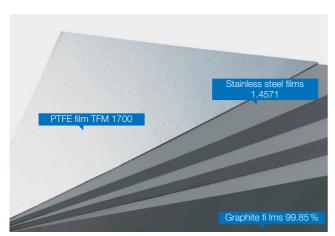


Photo: Mulitlayerplatte Sigraflex MF®



Photo: Grinding pattern of an Egraflex Steelflon Waveline WLP® gasket

The corrugated geometry clearly visible in the above grinding pattern forms a sine curve. A strong precompression over all material layers is achieved. As graphite does not undergo any noteworthy change in thickness from approx. 50 MPa, the settling behaviour of the gasket is significantly improved in practice with the Waveline WLP® process.

SOLUTION TO THE PROBLEM

Egraflex Steelflon Waveline WLP® is a solution developed by A.W.Schultze that fulfils these requirements. Based on the known multilayer sealing plate "Sigraflex® MF", made by SGL, this product has been manufactured as Egraflex Steelflon since 1995 and is used very successfully in prominent industrial companies.

Laminate thicknesses are chosen corresponding to the target objective. A.W.Schultze GmbH punches gaskets from the plate material and provides these with an internal enclosure made from VA. Finally, the gasket is pre-pressed with very precisely defined force with the aim of attaining an effective, corrugated cross-section geometry.

The VA internal enclosure also receives this pre-compression, thereby closing off the sealing cross-section without the flange having to apply the normal deformation work. The following values result correspondingly according to EN 13555. (Please find the values in the diagrams on the rear.)

EGRAFLEX STEELFLON WAVELINE WLP® APPROVALS

- TA-Luft
- FDA
- BAM
- DVGW
- VCI Guidelines
- Leak tightness and strength validations according to DIN EN 1591

The PTFE cover fi lms applied on both sides ensure short installation times when changing the gaskets.

Adhesion to the fl ange is prevented – the gasket can be removed without leaving any residues. Further spreading or disassembly of the fl ange for cleaning the sealing surfaces is no longer necessary, which means the fl ange cleaning can be carried out without fault.

The pre-compression and structure of the gasket prevents the absorption of water and hence failure of the gasket, which can result from the installation of wet graphite gaskets.

INSTALLATION SAFETY

For a clear improvement in the installation safety and precise, reliable assignment of the gasket, Egraflex Steelflon Waveline WLP® gaskets can also be supplied with part marking.

This typically includes information on the installation torque, nominal width and nominal pressure, manufacturer, customer parts number and material data.

The gasket is available in thicknesses from 2.0 to 4.0 mm. Standard dimensions in stock. Special sizes: any geometry up to diameter 4,500 mm available!



EGRAFLEX STEELFLON WAVELINE-WLP® & H2

Our EGRAFLEX STEELFLON WAVELINE-WLP® recorded exceptionally low leak rates in the test procedure according to DIN EN 13555 and in the H2 leak test. This means it is suitable for applications relating to the production, storage and transport of hydrogen.





Download test report

EGRAFLEX STEELFLON WAVELINE WLP® **BENEFITS AT A** GLANCE:

- minimum settling behaviour
- extremely high leak tightness
- no sticking to the flange
- no contamination of the gasket / medium
- rapid installation times thanks to good handling
- universal use = reduced warehousing
- relevant approvals available



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