Garlock
an EnPro Industries family of companies

GYLON BIO-LINE® / GYLON BIO-LINE® PLUS

Quality seals for the food and pharmaceutical industry

Europe, Middle East

Leaders in Sealing Integrity

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Process and equipment reliability

Pharmaceutical and food processing industries strive to limit and avoid operational down time, caused due to cleaning and maintenance procedures. Sterilization cycles are carried out in the shortest possible time with highly concentrated chemicals, high temperatures and increased flow rates. Exposed to these conditions elastomeric seals failure due to exceeding their limits, thus resulting in short exchange intervals. GYLON BIO-LINE® and GYLON BIO-LINE® PLUS offer approved sealing materials for high temperatures and demanding processes - while at the same time entirely compliant to all major food regulations.

When seeking materials resistant to acids, caustics and sensitive media, performing at demanding temperatures and pressures, established options are hardly present. The available elastomers generally fail in at least one of these requirements and conventional PTFE is not suitable due to its cold flow properties. The modified and restructured PTFE of the GYLON BIO-LINE® as well as the restructured PTFE of the GYLON BIO-LINE® PLUS are well-proven in the industries to meet all these criteria since many years. Not only providing safe and economical processes but also optimizing stock keeping.

GYLON BIO-LINE® and GYLON BIO-LINE® PLUS are superior in dimensional stability. Elastomeric seals always tend to extrude from connections due to mechanical stresses from vibrations and misalignment. The elastomeric ability to compensate misalignment at mounting is a widespread misbelief. In fact compression stress distribution gets unbalanced resulting in increased tension and extrusion on one side and a loss on the opposite side. Extruded elastomeric seals create dead spaces that impair the cleaning and sterilization. A contamination threat of subsequent charges through residues on the sealing material is a consequence. GYLON BIO-LINE® and GYLON BIO-LINE® PLUS seals remain flexible, tight and flush with the pipe bore even under high loads.

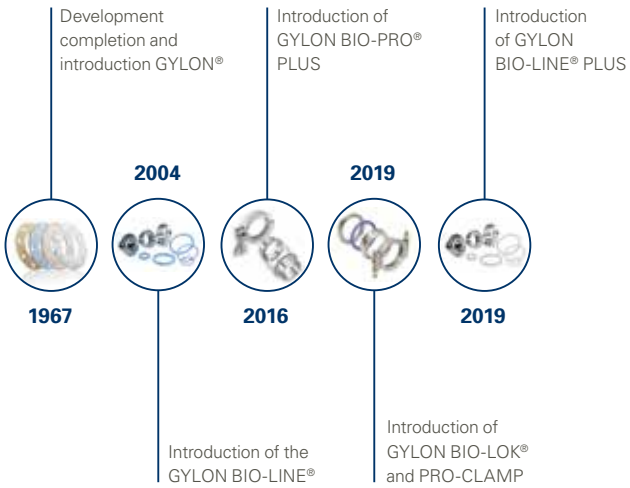
The pharmaceutical and food processing industries uses numerous types of seals whose standard sizes differ and overlap. One example is ISO 1127 for internal pipe cross sections, which allows several sealing profiles. We are well aware of these short comings and are pleased to support you in selecting the optimal GYLON BIO-LINE® and GYLON BIO-LINE® PLUS seal.

* PTFE – polytetrafluoroethylene

New perspectives for all sanitary gaskets in the pharmaceutical and food industry

GYLON® was developed back in 1967 as the 3rd Generation PTFE by Garlock. Since then, GYLON® was constantly enhanced and optimized over the decades to succeed in various fields of application. Through its revolutionary PTFE calendering process an intense cross-linking of the PTFE molecular chain is achieved. This results in an unique tensile strength which constraints cold flow under load stress.

Innovation by tradition



Unparalleled reliability and service

The Garlock family of GYLON® products has evolved over the years with a focus on quality to meet and exceed customer expectations. The use of employee involvement, statistical process control, vendor assurance programs, and a continuous improvement philosophy continues to guarantee end users the highest quality products available.

Testing is performed regularly on all styles and thicknesses to ensure the consistency of Garlock quality in GYLON® sheets. Quality products, years of experience and value-added service programs, all are reasons why the GYLON® family of products has become such a major sealing component in the industry today.

There is no doubt that demands will change in the future. But one thing is certain - Garlock will continue to answer those changes and demands with products that are innovative and timely. GYLON®, a name you can trust and a complete family of products to choose for your sealing needs.

GYLON BIO-LINE® / GYLON BIO-LINE® PLUS

Quality seals for the food and pharmaceutical industry

Food & Pharma Gaskets	GYLON BIO-LINE® Style 3504	GYLON BIO-LINE® PLUS Style 3522
Ideal for		
	» Food	» Pharmaceutical
	» Beverage	» Bio-Pharmaceutical
	» Cosmetic	» Dairy
		» Food
		» Beverage
		» Cosmetic
Composition	PTFE with Aluminosilicate microspheres	100% PTFE – free of fillers and pigments
Media Resistance	Almost universal chemical resistance	Almost universal chemical resistance
Approvals and Certificates		» 3-A 20-27
	» EC1935/2004[1] incl. EC10/2011[1]	» EC1935/2004 incl. EC10/2011
	» USP Class VI <87, 88>	» USP Class VI <87, 88>
	» KTW	» KTW
	» Meets FDA 21 CFR177.1550	» Meets FDA 21 CFR177.1550
	» NSF 61 Standard[2]	» NSF 61 Standard
	» 62.BfR	» 62.BfR
	» USP Part <31, 281, 661>	» USP Part <31, 281, 661>
	» ADI free (TSE, BSE)	» ADI free (TSE, BSE)
	» EMEA 410/01	» EMEA 410/01
	» Phthalate and softener free	» Phthalate and softener free
	» TA – Luft incl. Blow-out Proof (Material only)	» TA – Luft incl. Blow-out Proof (Material only)
	» BAM	» BAM
Continuous max. Temperature	260 °C / 500 °F	260 °C / 500 °F
Minimum Temperature	-268 °C / -345 °F	-268 °C / -345 °F
Maximum Temperature	55 bar / 800 psig	55 bar / 800 psig
Key Attributes	» Traceability optional[1]: Batch number on the gasket	» Traceability by default: Batch number on the gasket
		» Hygienic design according to EHEDG
	» High resistance to almost all chemicals and temperature cycles	» High resistance to almost all chemicals and temperature cycles
	» Reduced cold flow and decreased creep relaxation	» Reduced cold flow and decreased creep relaxation
	» Dimensionally stable – no intrusion or extrusion into the process flow	» Dimensionally stable – no intrusion or extrusion into the process flow
	» Universal with unlimited shelf life	» Universal with unlimited shelf life
	» Ideal for SIP & CIP processes	» Ideal for SIP & CIP processes

[1] This material also is used within process and industries, which are not rated to EC 1935/2004 and only is delivered with traceability under request within ordering process.

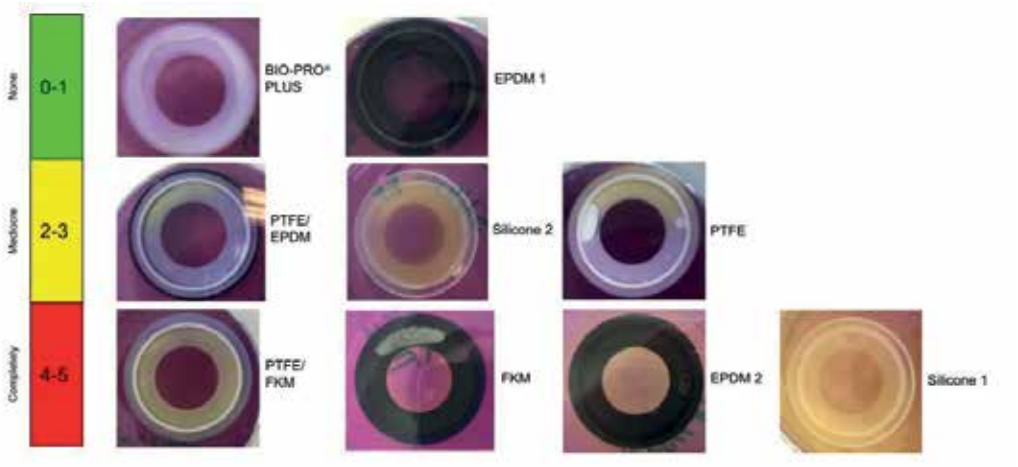
[2] Only possible under request within ordering process.

GYLON BIO-PRO® PLUS: Cleanability Test

According EHEDG guideline No. 2 in order to compare material cleanability

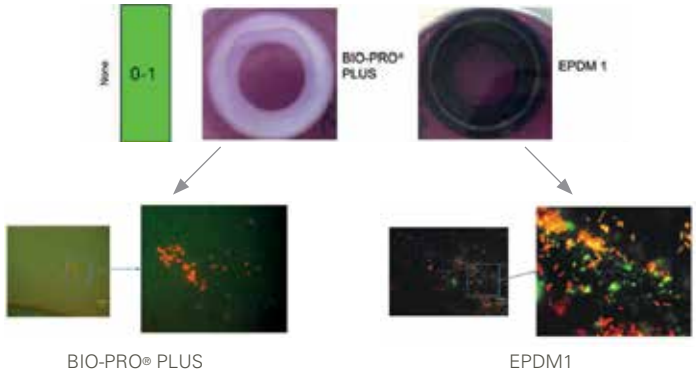
Test Results

In order to assess the cleanability of the gaskets after the simulated cleaning procedure according to EHEDG guidline 2, they were tested for residual microorganisms. The evidence was provided by a color change of the nutrient medium from violet to yellow. This color change is caused by the pH indicator Bromocresol purple in the presence of acid-forming microorganisms. The material GYLON® Style 3522 repeatedly showed only good cleaning results. Only if the contaminants are able to grow in the special nutrient media used, it will show yellow coloring during the detection procedure. The acid formation of the test organism during the growth phase (by-product of cell growth) causes the corresponding color change (violet to yellow) of the nutrient medium.



Results test for residual microorganism

The EPDM 1 gasket showed no yellow coloring in the tests, which according to EHEDG means that the gasket is free of contamination. However, further investigations using fluorescence microscopy have shown that the EPDM 1 gasket was completely covered with contaminants. It was therefore concluded that the EPDM 1 gasket had antimicrobial properties which led to a failure of the test procedure and a false positive result. In comparision GYLON BIO-PRO® PLUS showed no yellow colouring in the test and in the fluorescene microscopy only few contaminants. **The material GYLON® Style 3522 repeatedly showed only good cleaning results.**



BIO-PRO® PLUS EPDM1

Fluorescence microscopy pictures

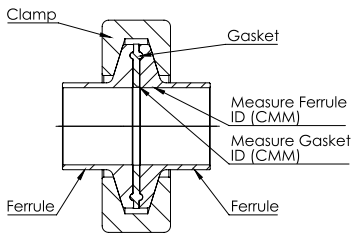
GYLON BIO-PRO® PLUS: Intrusion Test

Compare the intrusion inside the Tri-Clamp after mechanical and thermal stress

The gaskets were installed with the Tri-Clamp connections and the clamps screwed to the respective torques (PTFE gaskets with 5 Nm and elastomer gaskets with 3 Nm).

In order to determine the intrusion behavior of the gaskets, the inner diameters of the gaskets were measured at six points each:

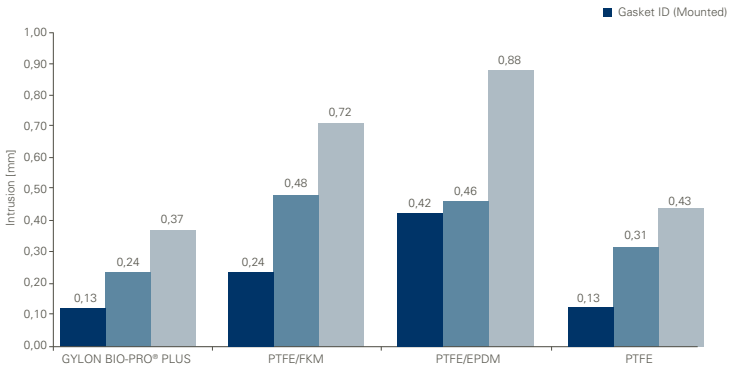
1. measurement of the inner diameter before assembly
2. measurement of the inside diameter after installation at room temperature
3. measurement of the inner diameter after exposure to heat in assembled condition



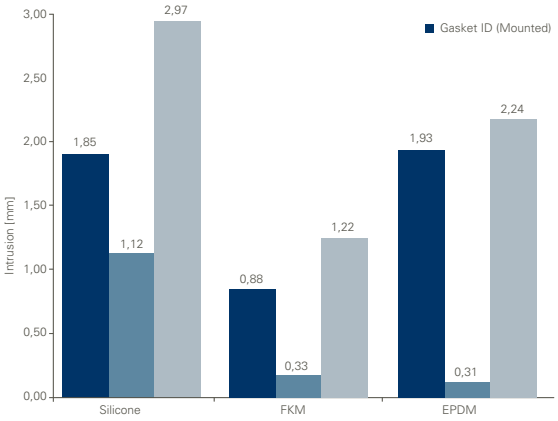
Standard Tri-Clamp connection

Test Results

The values given in Figure below represent the differences of the measured inner diameters:
Bar 1 (Color1): Difference between the original inner diameter of the gasket and the inner diameter of the gasket after assembly.
Bar 2 (Color 2): Difference between the inner diameter of the gasket after assembly and the inner diameter of the gasket after heat exposure in the assembled condition.
Bar 3 (Color 3): Measured total intrusion of gaskets = intrusionassembly + intrusionheat exposure.



PTFE GASKETS: Before-After with 5 Nm Torque



ELASTOMERS (70º Shore A): Before-After with 3 Nm Torque

The results have shown that GYLON BIO-PRO® PLUS has a comparatively very low intrusion behavior. In particular, the elastomer gaskets and the PTFE/elastomer gaskets show relatively high intrusion behavior, both after assembly at room temperature and again after exposure to heat.

GYLON BIO-PRO®

GYLON BIO-PRO® PLUS

Universal sanitary gasket meeting your most critical application requirements

Tri-Clamp connections are the standard connection in the food and pharmaceutical processing industries since many years. Seals of varying quality and materials are often used regardless of their suitability for constantly increasing operating parameters.

GYLON BIO-PRO® and GYLON BIO-PRO® PLUS deliver best in class performance across all critical factors such as compliance, chemical compatibility, sealability, creep and dimensional stability. The seals offer a safe solution with its modified and restructured PTFE material, pre-formed and stress controlled, for all Tri-Clamp standards. It is dimensionally stable and resists intrusion into the pipe bore. It can be safely used with all cleaning, neutralizing and sterilizing media, including steam, and for all standard process temperatures. This next generation sanitary gaskets ensures ease of installation and long term operational integrity in the most challenging and critical applications.

GYLON BIO-PRO®

GYLON BIO-PRO® is Phthalate and softener free, therefore especially in the food industry the preferred choice and is ideal for product-contact applications.

GYLON BIO-PRO® PLUS

Manufactured from our proprietary GYLON® Style 3522 100% PTFE, GYLON BIO-PRO® PLUS is also Phthalate and softener free and ideal for critical product contact applications. Due its smooth surface finish, it benefits a thorough cleaning which requires less energy and chemical detergents for safe and ecological operation.

Engineered gasket design - Decreased dead space

Elastomeric Gasket

» ID intrusion
» Product accumulation
» Bacterial build-up

Traditional PTFE

» ID recession
» Product accumulation
» Bacterial build-up

GYLON BIO-PRO® / GYLON BIO-PRO® PLUS

» Smoth bore
» Easy cleaning
» Dimensional stability

GYLON BIO-ASEPT® GYLON BIO-ASEPT® PLUS

Seals offer high stability and a specific elasticity

The ideal seal for aseptic flange connection in accordance with DIN 11853 and DIN 11864.

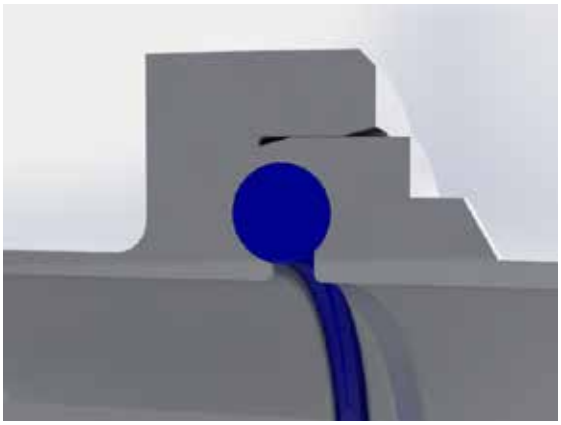
GYLON BIO-ASEPT® and GYLON BIO-ASEPT® PLUS seals offer high stability and a specific elasticity. The seals are pre-formed and stress controlled to provide a solid seal when assembled in the piping systems. Hence to advanced materials and well adjusted seal geometries, which adapt to the flange design, a save operation on production site is ensured.

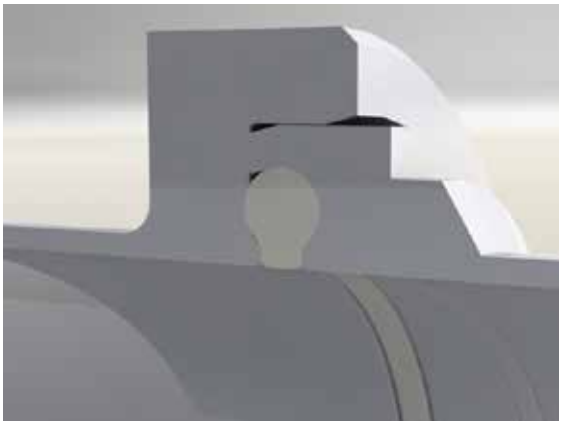
GYLON BIO-ASEPT®

GYLON BIO-ASEPT® seals are designed to substitute conventional elastomeric O-Rings in hygienic and aseptic connections and to outperform them through superior material properties. Chemical degradation or brittleness will not occur under normal or even increasing process and sterilization conditions, due to specific, high performing modified PTFE GYLON® Style 3504 sealing material. GYLON BIO-ASEPT® meets EN 1935 / 2004, USP Class VI and is FDA-compliant, which approves its food contact suitability.

GYLON BIO-ASEPT® PLUS

GYLON BIO-ASEPT® PLUS provides the highest industrial safety regarding resilience in operation. Due to its unique gasket shape, which is designed to adapt to the flange geometry, it seals perfectly even under drastic conditions. Its smooth surface constitution prevents germs from attaching and increasing. Additionally to all GYLON BIO-LINE® approvals and certificates GYLON BIO-ASEPT® PLUS is also compliant with the 3A Sanitary Standard 20-27.





GYLON BIO-ECO®

GYLON BIO-ECO® PLUS

Quality PTFE seals for the pharmaceutical and food processing industry

The ideal seal for dairy screw couplings in accordance with DIN 11851 and SMS 1149. Couplings were originally manufactured for fluid foods, and have now established themselves as the most common fastener in the entire fluid foods industry.

GYLON BIO-ECO® and GYLON BIO-ECO® PLUS are preformed gaskets manufactured to seal flange connections according to DIN 11851 and SMS 1149. The necessity for adequate sealing stress and simultaneous recovery makes GYLON BIO-ECO® and GYLON BIO-ECO® PLUS the ideal solution for couplings in accordance with DIN 11851 and SMS 1149. All of the disadvantages associated with current elastomeric seals regarding temperature, chemical resistance and re-usability are eliminated by the modified and restructured PTFE materials. GYLON BIO-ECO® and GYLON BIO-ECO® PLUS seals are available in all dimensions without inner collar (M1) or with inner collar (M2).

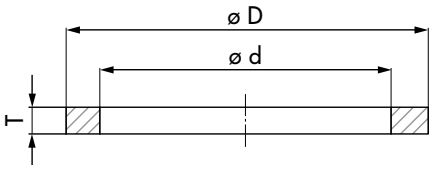
GYLON BIO-ECO®

GYLON BIO-ECO® is a high performance gasketing product which shows an excellent chemical resistance and is therefore suited to handle all CIP- and SIP-cleaning processes. With a broad temperature range and its unique ability to compress and recover during operation, tightness is provided through out highly varying process parameters. These advantages in sealing integrity lead GYLON BIO-ECO® to be applied - and approved - in critical food production sites since its launch in 2004.

GYLON BIO-ECO® PLUS

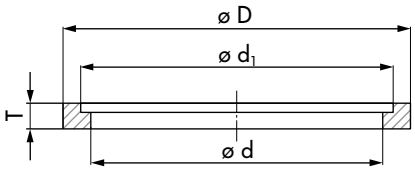
Due to a restructured 100% PTFE in conjunction with ultra smooth surface constitution GYLON BIO-ECO® PLUS provides unrivaled sealing and cleaning characteristics for the most critical process applications. Inhibited cold flow as well as almost universal chemical resistance provide a reliable solution for the most demanding production lines in the pharmaceutical industry.

GYLON BIO-ECO® M1



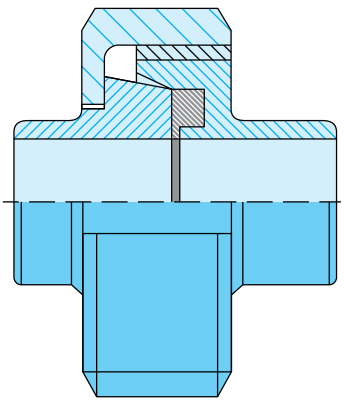
Without inner collar

GYLON BIO-ECO® M2



With inner collar

Application



Standard flange connection

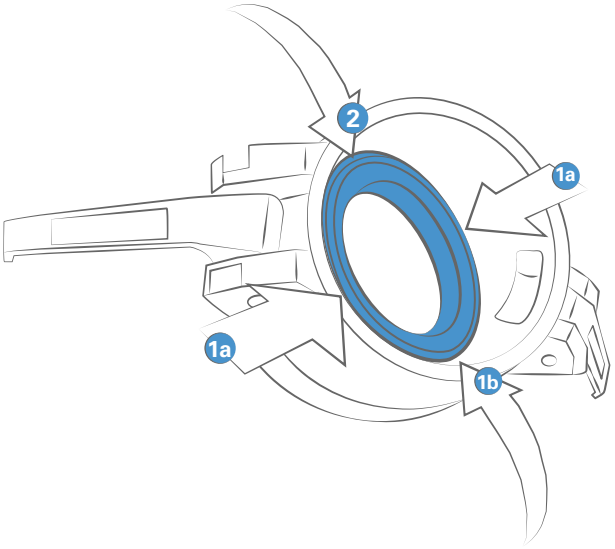
GYLON BIO-LOK®

Standard connection for quick coupling in the food and chemical industry

Gaskets for Camlock couplings according to DIN EN 14420-7 and US-MIL-norm (MIL-C-27487) for the food and chemical industry.

Camlock connections are the standard connection for quick coupling in the food industry as well as the chemical industry. GYLON BIO-LOK® is made of highly compressible and flexible material GYLON® Blue Style 3504. The seals offer a high stability and provides a solid seal when assembled.

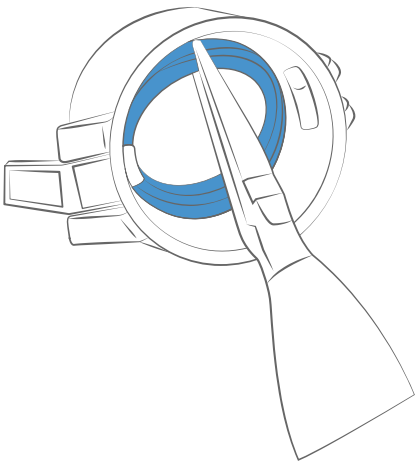
Installation



Step 1: To install the gasket slightly press (1a) and fit with one side into groove (1b).

Step 2: The gasket is completely fitted into the groove through slightly pushing at the other end (2).

Deinstallation



The gasket is removed with a commercially available needle-nosed pliers by lifting at one end and a slight bending over the center.

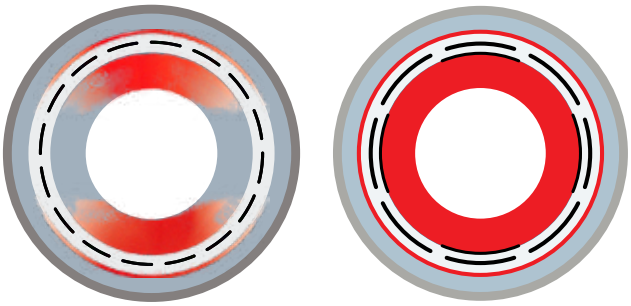
Garlock PRO-CLAMP

Sanitary High-Pressure Clamps for hygienic connections

Production line operators always try to minimize maintenance durations and contamination threats simultaneously for efficient yield rates. To fulfill these requirements not only the gaskets have to provide an outstanding performance, also the clamp itself needs to provide an uniform compression of the gasket at all times. As a result, contamination risks and the revolving need of retightening can be prevented.

Load and Sealability

As long as the material is able to maintain its compression, the gasket will maintain the sealing point and not require retightening. The Garlock PRO-CLAMP provides uniform compression across the gasket.

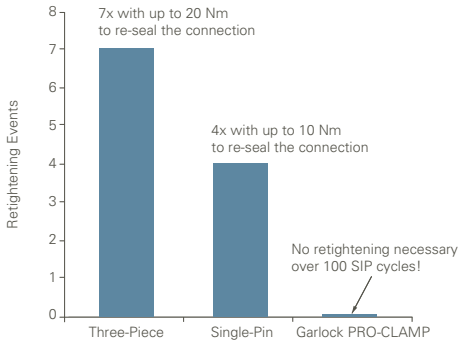


Single-Pin Clamp Garlock PRO-CLAMP

Load print comparison of an elastoremic gasket

To illustrate the load distribution, a load print comparison was carried out for several clamp designs using a load-indicating film. The red colored zones indicate the load applied to the gasket. The load distribution of the Garlock PRO-CLAMP is extremely homogenous compared to the single-pin design. The print of the single-pin clamp shows an insufficient balance and intensity of the load distribution to the gasket. Only the Garlock PRO-CLAMP compresses the gasket evenly throughout the whole sealing surface.

Additionally pneumatic shell bubble tests were performed initially and after 25/50/75/100 SIP (Sterilization In Place) cycle milestones. A failure of the connection during the bubble test was addressed via retightening.



Retightening events by clamp type - 100 SIP performance test

The diagram shows that with the Garlock PRO-CLAMP no retightening of the clamps was necessary, even after 100 SIP cycles. The other clamp designs failed the tests multiple times.

GYLON BIO-PRO®

Seals for Tri-Clamp connections
Material: GYLON® Blue Style 3504

Gasket dimensions, item numbers and packaging units 1)

DIN 11850 (DIN 32676: Row A) (DIN 11866 Row A)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-10144	6_{T1}	6,2	21,8
FAB08-11044	8_{T1}	8,2	21,8
FAB08-11016	10	10,2	34
FAB08-11024	15	16,2	34
FAB08-11029	20	20,2	34
FAB08-11033	25	26,2	50,5
FAB08-11037	32	32,2	50,5
FAB08-11038	40	38,2	50,5
FAB08-11041	50	50,2	64
FAB08-11043	65	66,2	91
FAB08-11045	80	81,2	106
FAB08-11019	100	100,2	119
FAB08-11023	125	125,2	155
FAB08-11026	150	150,2	183
FAB08-11032	200	200,2	233,5
FAB08-11015**	300	300,0	319,0

ISO 1127 (DIN 32676: Row B) (DIN 11866 Row B)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12011	$10,2_{T1}$	7,2	21,8
FAB08-11063	$13,5_{T1}$	10,5	21,8
FAB08-11050	$17,2_{T1}$	14,2	21,8
FAB08-11072	21,3	18,3	50,5
FAB08-11054	26,9	23,9	50,5
FAB08-11056	33,7	29,9	50,5
FAB08-11057	42,4	38,6	64
FAB08-11058	48,3	44,5	64
FAB08-11059	60,3	56,5	77,5
FAB08-11060	76,1	72,3	91
FAB08-11062	88,9	84,5	106
FAB08-11022	114,3	109,9	130
FAB08-11206	139,7	134,7	155
FAB08-11156	168,3	163,3	183
FAB08-11055	219,1	214,1	233,5

ASME BPE - 2014 (DIN 32676: Row C) (DIN 11866 Row C)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-11154	$1/4"_{T1}$	4,8	21,8
FAB08-11146	$3/8"_{T1}$	8	21,8
FAB08-11001*	$1/2"_{T1}$	9,6	21,8
FAB08-11002*	$3/4"_{T1}$	16	21,8
FAB08-11003*	1"	22,3	50,5
FAB08-11006*	1-1/2"	35	50,5
FAB08-11008*	2"	47,7	64
FAB08-11010*	2-1/2"	60,4	77,5
FAB08-11011*	3"	73,1	91
FAB08-11012*	4"	97,6	119
FAB08-11099*	6"	147,1	167
FAB08-12009**	8"	197,6	217,7
FAB08-11015**	12"	300	319

* Equal to BS 4825-3 (British Standard)

** not included within corresponding standard

ISO 2852			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-11061	12	10,2	34
FAB08-11071	12,7	10,9	34
FAB08-11028	17,2	15,4	34
FAB08-11202	21,3	19,5	34
FAB08-11064	25	22,8	50,5
FAB08-11204	33,7	31,5	50,5
FAB08-11149	38	35,8	50,5
FAB08-11074	40	37,8	64
FAB08-11150	51	48,8	64
FAB08-11067	63,5	60,5	77,5
FAB08-11094	70	67	91
FAB08-11068	76,1	73,1	91
FAB08-11203	88,9	85,1	106
FAB08-11069	101,6	97,8	119
FAB08-11049	114,3	110,5	130
FAB08-11051	139,7	135,9	155
FAB08-10134	168,3	163,3	183
FAB08-11073	219,1	214,1	233,5

SMS 3019			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-11147	12	10	34
FAB08-11148	18	16,2	34
FAB08-11084	25	22,8	50,5
FAB08-11199	33,7	31,5	50,5
FAB0811087	38	35,8	50,5
FAB08-11131	42	39,2	50,5
FAB08-11132	48,3	45,1	64
FAB08-11090	51	48,8	64
FAB08-11093	63,5	60,5	77,5
FAB08-11151	76,1	73,1	91
FAB08-11200	88,9	85,1	106
FAB08-11077	101,6	97,8	119
FAB08-11013	114,3	110,5	130
FAB08-11152	139,7	135,9	155
FAB08-11157	168,3	163,3	183
FAB08-11153	219,1	214,1	233,5

Packaging Unit (PU)	
DN	**Pieces per PU**
$1/4"_{T1}$ bis $3/4"_{T1}$	50
6_{T1} bis 8_{T1}	50
$13,5_{T1}$	50
1" bis 2-1/2"	25
10 bis 63,5	25
3" bis 4"	10
65 bis 101,6	10
114,3 bis 139,7	5
6"	1
150 bis 219,1	1

T1 = Mini-Clamp

T2 = Standard-Clamp

1) For further information on gasket dimensions without a listed item number please contact Garlock.

Please note: The dimensions shown in the table are according to norm sizes. Due to the sealing characteristics of GYLON® gasketing material, the exact dimension of the gasket are amended to get an optimized sealing performance.

GYLON BIO-PRO® PLUS

Seals for Tri-Clamp connections
Material: GYLON® Style 3522

Gasket dimensions, item numbers and packaging units [1)]

DIN 11850 (DIN 32676: Row A) (DIN 11866 Row A)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12033	6_{T1}	6,2	21,8
FAB08-12029	8_{T1}	8,2	21,8
FAB08-12034	10	10,2	34
FAB08-12035	15	16,2	34
FAB08-12036	20	20,2	34
FAB08-12037	25	26,2	50,5
FAB08-12038	32	32,2	50,5
FAB08-12039	40	38,2	50,5
FAB08-12040	50	50,2	64
FAB08-12041	65	66,2	91
FAB08-12042	80	81,2	106
FAB08-12043	100	100,2	119
FAB08-12044	125	125,2	155
FAB08-12045	150	150,2	183
FAB08-12046	200	200,2	233,5

ISO 1127 (DIN 32676: Row B) (DIN 11866 Row B)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12047	$10,2_{T1}$	7,2	21,8
FAB08-12012	$13,5_{T1}$	10,5	21,8
FAB08-12013	$17,2_{T1}$	14,2	21,8
FAB08-12014	21,3	18,3	50,5
FAB08-12015	26,9	23,9	50,5
FAB08-12016	33,7	29,9	50,5
FAB08-12017	42,4	38,6	64
FAB08-12018	48,3	44,5	64
FAB08-12019	60,3	56,5	77,5
FAB08-12020	76,1	72,3	91
FAB08-12021	88,9	84,5	106
FAB08-12048	114,3	109,9	130
FAB08-12049	139,7	134,7	155
FAB08-12050	168,3	163,3	183
FAB08-12051	219,1	214,1	233,5

ASME BPE - 2014 (DIN 32676: Row C) (DIN 11866 Row C)			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12022	$1/4"_{T1}$	4,8	21,8
FAB08-12024	$3/8"_{T1}$	8	21,8
FAB08-12001*	$1/2"_{T1}$	9,6	21,8
FAB08-12002*	$3/4"_{T1}$	16	21,8
FAB08-12003*	1"	22,3	50,5
FAB08-12004*	1-1/2"	35	50,5
FAB08-12005*	2"	47,7	64
FAB08-12006*	2-1/2"	60,4	77,5
FAB08-12007*	3"	73,1	91
FAB08-12008*	4"	97,6	119
FAB08-12023	6"	147,1	167
-	8"	197,6	217,7

*Equal to BS 4825-3 (British Standard)

ISO 2852			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12055	12	10,2	34
FAB08-12072	12,7	10,9	34
FAB08-12073	17,2	15,4	34
FAB08-12054	21,3	19,5	34
FAB08-12030	25	22,8	50,5
-	33,7	31,5	50,5
-	38	35,8	50,5
FAB08-12075	40	37,8	64
-	51	48,8	64
FAB08-12031	63,5	60,5	77,5
-	70	67	91
FAB08-12032	76,1	73,1	91
-	88,9	85,1	106
FAB08-12061	101,6	97,8	119
FAB08-12063	114,3	110,5	130
-	139,7	135,9	155
FAB08-12065	168,3	163,3	183
FAB08-12067	219,1	214,1	233,5

SMS 3019			
Item no.	**DN**	**ID [mm]**	**OD [mm]**
FAB08-12056	12	10	34
FAB08-12057	18	16,2	34
FAB08-12058	25	22,8	50,5
-	33,7	31,5	50,5
-	38	35,8	50,5
-	51	48,8	64
FAB08-12059	63,5	60,5	77,5
FAB08-12060	76,1	73,1	91
-	88,9	85,1	106
FAB08-12062	101,6	97,8	119
FAB08-12064	114,3	110,5	130
-	139,7	135,9	155
FAB08-12066	168,3	163,3	183
FAB08-12068	219,1	214,1	233,5

Packaging Unit (PU)	
DN	**Pieces per PU**
$1/4"_{T1}$ to $3/4"_{T1}$	50
6_{T1} to 8_{T1}	50
$13,5_{T1}$	50
1" to 2-1/2"	25
10 to 60,3	25
3" to 4"	10
65 to 101,6	10
114,3 to 139,7	5
6"	1
150 to 219,1	1

1) For further information on gasket dimensions without a listed item number please contact Garlock.

Please note: The dimensions shown in the table are according to norm sizes. Due to the sealing characteristics of GYLON® gasketing material, the exact dimension of the gasket are amended to get an optimized sealing performance.

GYLON BIO-ASEPT®

For aseptic flange connections in accordance with DIN 11853 and DIN 11864 (Form A) Material: GYLON® Blue Style 3504

Gasket dimensions and item numbers [1)]

DIN 11864 and DIN 11853 , Row A, Form A DIN 11866 Row A			
Item no.	**DN**	**ID [mm]**	**T [mm]**
FAB09-10010	10	12	3,5
FAB09-10011	15	18	3,5
FAB09-10012	20	22	3,5
FAB09-10013	25	28	3,5
FAB09-10014	32	34	5
FAB09-10015	40	40	5
FAB09-10016	50	52	5
FAB09-10017	65	68	5
FAB09-10018	80	83	5
FAB09-10019	100	102	5
FAB09-10176	125	127	5
FAB09-10179	150	152	5

DIN 11864 and DIN 11853, Row B, Form A DIN 11866 Row B			
Item no.	**DN**	**ID [mm]**	**T [mm]**
FAB09-10119	13,5	12	3,5
FAB09-10158	17,2	16	3,5
FAB09-10020	21,3	20	3,5
FAB09-10021	26,9	26	3,5
FAB09-10022	33,7	32	5
FAB09-10023	42,4	40,5	5
FAB09-10024	48,3	46,5	5
FAB09-10025	60,3	58,5	5
FAB09-10026	76,1	73,5	5
FAB09-10027	88,9	86,5	5
FAB09-10190	114,3	111,0	5

DIN 11864 and DIN 11853, Row C, Form A DIN 11866 Row C			
Item no.	**DN**	**ID [mm]**	**T [mm]**
FAB09-10169	1/2"	12	3,5
FAB09-10170	3/4"	18	3,5
FAB09-10162	1"	24	3,5
FAB09-10171	1,5"	37	5
FAB09-10172	2"	50	5
FAB09-10173	2,5"	62	5
FAB09-10174	3"	75	5
FAB09-10175	4"	100	5

1) For further information on gasket dimensions without a listed item number please contact Garlock.

Please note: The dimensions shown in the table are according to norm sizes. Due to the sealing characteristics of GYLON® gasketing material, the exact dimension of the gasket are amended to get an optimized sealing performance.

GYLON BIO-ASEPT® PLUS

For aseptic flange connections in accordance with DIN 11853 and DIN 11864 (Form A) Material: GYLON® Style 3522

Gasket dimensions and item numbers [1)]

DIN 11864 and DIN 11853 , Row A, Form A DIN 11866 Row A			
Item no.	**DN**	**ID [mm]**	**T [mm]**
FAB09-12032	10	12	3,5
FAB09-12033	15	18	3,5
FAB09-12034	20	22	3,5
FAB09-12035	25	28	3,5
FAB09-12036	32	34	5
FAB09-12037	40	40	5
FAB09-12038	50	52	5
FAB09-12039	65	68	5
FAB09-12040	80	83	5
FAB09-12041	100	102	5

Further sizes on request

1) For further information on gasket dimensions without a listed item number please contact Garlock.

Please note: The dimensions shown in the table are according to norm sizes. Due to the sealing characteristics of GYLON® gasketing material, the exact dimension of the gasket are amended to get an optimized sealing performance.

GYLON BIO-ECO®

Dimensions for diary screw coupling in accordance with DIN 11851 and SMS 1149
Material: GYLON® Blue Style 3504

Gasket dimensions and item numbers [1)]

(DIN 11851, Model M1)				
Item no.	**DN**	**Ø d [mm]**	**Ø D [mm]**	**T [mm]**
FAB09-10028	10	12	20	3,8
FAB09-10029	15	18	26	3,8
FAB09-10030	20	23	33	3,8
FAB09-10031	25	30	40	4,8
FAB09-10032	32	36	46	4,8
FAB09-10033	40	42	52	4,8
FAB09-10034	50	54	64	4,8
FAB09-10035	65	71	81	4,8
FAB09-10036	80	85	95	4,8
FAB09-10038	100	104	114	6,4
FAB09-10039	125	130	142	6,4
FAB09-10040	150	155	167	6,4

(DIN 11851, Model M2)					
Item no.	**DN**	**Ø d [mm]**	**Ø $d_{1\ [mm]}$**	**Ø D [mm]**	**T [mm]**
FAB09-10041	10	10,5	12	20	3,8
FAB09-10042	15	16,5	18	26	3,8
FAB09-10043	20	20,5	23	33	3,8
FAB09-10044	25	26,5	30	40	4,8
FAB09-10045	32	32,5	36	46	4,8
FAB09-10046	40	38,5	42	52	4,8
FAB09-10047	50	50,5	54	64	4,8
FAB09-10048	65	66,5	71	81	4,8
FAB09-10049	80	81,5	85	95	4,8
FAB09-10121	100	100,5	104	114	6,4
FAB09-10125	125	125	130	142	6,4
FAB09-10126	150	150	155	167	6,4

SMS 1149, Model M1				
Item no.	**DN**	**Ø d [mm]**	**Ø D [mm]**	**T [mm]**
FAB09-10090	25	25	32	4,8
FAB09-10128	32	32	40	4,8
FAB09-10091	38	38	48	4,8
FAB09-10092	51	51	61	4,8
FAB09-10093	63,5	63,5	73,5	4,8
FAB09-10094	76	76	86	4,8
FAB09-10129	89	89	101	4,8
FAB09-10130	108	108	120	4,8
FAB09-10095	104 (s)	104	116	4,8
FAB09-10040	150	155	167	167

SMS 1149, Model M2					
Item no.	**DN**	**Ø d [mm]**	**Ø $d_{1\ [mm]}$**	**Ø D [mm]**	**T [mm]**
FAB09-10054	25	22,5	25	32	4,8
FAB09-10055	38	35,5	38	48	4,8
FAB09-10056	51	48,5	51	61	4,8
FAB09-10057	63,5	60,5	63,5	73,5	4,8
FAB09-10058	76	72,9	76	86	4,8
FAB09-10127	101 (s)	98	104	116	4,8
FAB09-10059	104 (s)	101	104	116	4,8

s (Spezial size)

1) For further information on gasket dimensions without a listed item number please contact Garlock.

GYLON BIO-ECO® PLUS

Dimensions for diary screw coupling in accordance with DIN 11851 and SMS 1149
Material: GYLON® Style 3522

Gasket dimensions and item numbers 1)

(DIN 11851, Model M2)					
Item no.	**DN**	**Ø d [mm]**	**Ø $d_{1\ [mm]}$**	**Ø D [mm]**	**T [mm]**
FAB09-12021	10	10,5	13	20	3,8
FAB09-12022	15	16,5	19	26	3,8
FAB09-12023	20	20,5	24	33	3,8
Ask Garlock	25	26,5	31	40	4,8
FAB09-12024	32	32,5	37	46	4,8
FAB09-12025	40	39,5	43	52	4,8
FAB09-12026	50	50,5	55	64	4,8
FAB09-12027	65	66,5	72	81	4,8
FAB09-12028	80	81,5	86	95	4,8
FAB09-12029	100	100,5	105	114	6,4
FAB09-12030	125	125	131	142	6,4
FAB09-12031	150	150	156	167	6,4

Further sizes on request

1) For further information on gasket dimensions without a listed item number please contact Garlock.

GYLON BIO-LOK®

Gaskets for Camlock couplings
Material: GYLON® Blue Style 3504

Gasket dimensions and item numbers [1)]

DIN 11864 and DIN 11853 , Row A, Form A DIN 11866 Row A					
Item no.	**DN**	**Inch**	**Ø $d_{1\ [mm]}$**	**Ø D [mm]**	**T [mm]**
FAB09-10142	20	¾″	25	35	5,5
FAB09-10143	25	1″	27	40	6,4
FAB09-10144	32	1¼″	35	50	
FAB09-10145	40	1½″	41	56	
FAB09-10146	50	2″	51	67	
FAB09-10147	65	2½″	60	80	
FAB09-10148	80	3″	76	95	
FAB09-10149	100	4″	102	124	

1) For further information on gasket dimensions without a listed item number please contact Garlock.

Please note: The dimensions shown in the table are according to norm sizes. Due to the sealing characteristics of GYLON® gasketing material, the exact dimension of the gasket are amended to get an optimized sealing performance.

Garlock PRO-CLAMP

Sanitary High-Pressure Clamps for hygienic connections Material: 1.4301 (AISI 304) / Brass nut

Gasket dimensions and item numbers 1)

Item number 2)	Flange outside diameter [mm]	Screw stainless steel A2-70	Allowable torque 3) [Nm]
FAB19-10001	25,4	M6	4-6
FAB19-10002	34	M8	5-15
FAB19-10003	50,5	M10	8-30
FAB19-10004	64	M10	8-30
FAB19-10005	77,5	M10	8-30
FAB19-10006	91	M10	8-30
FAB19-10007	106	M10	8-30
FAB19-10008	119	M10	8-30
FAB19-10009	130	M10	8-30
FAB19-10010	155	M10	8-30
FAB19-10011	167	M10	8-30
FAB19-10012	183	M10	12-30
FAB19-10013	217,5	M10	12-30
FAB19-10014	233,5	M10	12-30

1) For further information on dimensions without a listed item number please contact Garlock.
2) Ordering example for clamp connection DN 25 according to DIN 32676: FAB19-10003 Flange outer diameter 50,5 mm
3) Depending on gasketing material and application parameters

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