SUPER FLON

SAMIL FLONTECH *www.**superflon**.com*

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World Best Fluorine Technology

SAMIL FLONTECH

We will always do our best with creativity, passion, and challenging spirit to repay our customers' trust and love with the best quality.

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GREETING

Hello,

We sincerely thank you for your interest in SAMIL FLONTECH
SAMIL FLONTECH is a specialized manufacturer of high-performance products in South Korea, leveraging advanced technology in the areas of coating, lining, and a wide variety of surface treatment processes.

We are dedicated to enhancing customer satisfaction by continuously innovating and delivering optimal solutions tailored to meet diverse client needs. Our company prioritizes sustainable management practices to create a future of shared growth with our customers.

Our products include high-quality coatings, linings, and piping solutions, as well as advancements in surface treatment technologies to offer durable and reliable solutions.

Your continued trust and interest inspire us to grow and innovate further. We look forward to becoming a company that earns your support and creates a promising future together.

Thank you.
Sincerely,

SAMIL FLONTECH

SAMIL FLONTECH

We will always do our best with creativity, passion, and challenging spirit to repay our customers' trust and love with the best quality.

COMPANY OVERVIEW

Company Name	SAMIL FLONTECH
CEO	Lee Sung-Jung
Established	April 2012
Address	[Anseung Factory] 142-31, Wonam-ro, Wongok-myeon, Anseong-si, Gyeonggi-do, Korea [Yongin Factory] 46, Deokseongsandan 2-ro, Idong-eup, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea
Main Business Areas	• Chemical Tank (Storage, Supply, etc.) • Customer Special Option(s) Business • Chemical Coating / Piping & Fitting • PPF / Flock Exhaust Duct & Pipe Lining
Main Clients	• Samsung Electronics • Sk Hynix • Wonik IPS • Hanwha solutions • Kukdo
Contact Information	[Ansung Factory] Phone: 031-658-7474 / Fax: 070-7550-2809 [Yongin Factory] Tel: 031-256-7479 / Fax: 070-4032-7479
Website	http://www.superflon.com/

COMPANY HISTORY

SAMIL FLONTECH is constantly striving to establish a consistent process and satisfy customer needs by vertically sequencing basic materials R&D and production to processing using fluoride resin to meet customer needs and overcome technological limitations.

World Best
Fluorine Technology

2012

- Established the Korean office of DAIKIN Industries.
- The Completion of the Anseong Factory (Fluoropolymer Coating Line Setup)
- Introduction of fluoropolymer resin from Daikin Industries, Ltd. in Japan

2013

- Setup of the Fluoropolymer Lining Facility
- Registered as a supplier of STI Chemical's equipment units
- Introduction of fluoropolymer resin from Asahi Glass Co., Ltd. (AGC) in Japan

2014

- Quality Certification: ISO 9001/14001 Certified
- Expansion of the Anseong Factory: Setup of the largest domestic lining facility
- Began supplying hook-up pipes for the SK Hynix Icheon, Cheongju and Wuxi China plants

2015

- Supplied lining products to Samsung Display
- Registered the first specialized fluoropolymer brand in Korea: Super FLON
- Certified by the U.S. FDA for ETFE-coated equipment
- Manufactured and supplied CSP tank lorries
- FM Approvals Class: 4922 certification obtained for SUPERFLON ducts

2016

- Registered as a supplier of fluoropolymer lining products for POSCO.
- Registered as a supplier for KOLON Engineering
- Registered as a supplier of lining products for Hanwha Chemical
- Obtained OHSAS 18001 certification
- Acquired a patent for lining pipe adapter devices
- Delivered related products for the SK Hynix M14 Hook-up Pipe

2017

- Acquired a patent for lining flanges and lining flange assemblies
- Registered the trademark "SUPERFLON"
- Initially supplied and installed 150A and 200A lining ducts for SK Hynix

2018

- Changed the company name to SAMIL FLONTECH Co., Ltd.
- Supplied customized products to major clients (Samsung Xi'an, Hyosung Materials)
- Obtained FM Approvals Class: 4922 certification for SUPERFLON DUCT ALPHA
- Registered as a supplier for Hyosung Chemical

2019

- Registered the trademark "PUREFLON"
- Registered and patented bellows protective film formation method and bellows protective film molding system
- Supplied PFC-coated duct products for the Samsung Electronics K-2 project

2020

- Obtained ISO 45001 certification
- Appointed Lee Sung-Jung as CEO
- Supplied lower and upper segments of P2 ducts for Samsung Electronics
- Registered a patent for the fluoropolymer lining method inside gas bomb cylinders

2021

- Registered a patent for flange structural components
- Supplied S3-V coated ducts for Samsung Electronics
- Responded to retrofit projects for Samsung Electronics' Giheung and Hwaseong facilities
- Certified as a venture company and an innovative small and medium-sized enterprise (SME)
- Completed the Yongin Factory

2022

- Certified as an innovative SME and performance-sharing enterprise
- Established a corporate-affiliated research institute at the Anseong Factory
- Supplied for Samsung Electronics' high-tech P3 PH2 project
- Supplied for Samsung Electronics' high-tech P3 PH3 project
- Designated as a military service support company for the Anseong Factory
- Responded to retrofit projects for Samsung Electronics' Giheung and Hwaseong facilities

2023

- Supplied for Samsung Electronics' high-tech P3 PH4 project
- Supplied for Samsung Electronics' high-tech P4 PH1 project
- Supplied for Samsung Electronics' high-tech P4 PH2 project
- Completed M&A between Samil CNF Co., Ltd. and Samil Flontec Co., Ltd.
- Responded to retrofit projects for Samsung Electronics' Giheung and Hwaseong facilities
- Obtained FM Approvals Class: 4922 certification for SUPERFLON DUCT ALPHA PLUS

2024

- Supplied ultra-pure water tanks to Samsung Engineering
- Supplied for Samsung Electronics' high-tech P4 PH3 project
- Responded to retrofit projects for Samsung Electronics' Giheung and Hwaseong facilities
- Obtained FM Approvals Class: 4922 certification for SP-7215XGN raw materials

MANAGEMENT VISION

Stability

- Over 30 years of expertise in fluororesin-related fields, providing the industry's most stable and price-competitive solutions.
- 100% imported fluororesin ensures a stable supply.

Ability

- First in the country to enable simultaneous coating and lining production.
- Possess the largest-scale of axis rotational lining facilities in the country.
- The only company in the country with raw material blending facilities and a research center.

Providing ONE PASS solutions to customers

Necessity

- Customization available to meet customer needs and add functionality to raw materials
  (chemical resistance, adhesion, durability, thermal stability, and other enhanced features)

Entirely

- From the development and supply of raw materials requested by customers to mass production of final products using customized materials, a complete total solution is provided in one process

CUSTOMER

• Domestic Customers

SAMSUNG · SK 하이닉스 · LG디스플레이 · posco · posco 포스코이앤씨 · HYOSUNG · Hanwha · HANON SYSTEMS · 동부하이텍 · KOLON · STi · KCTECH · WONIK IPS · HANYANG ENG · KUKDO · OCI

• Global Customers

01 FM Certification (Coating, Lining)

The world's first simultaneous FM certification for both coating and lining

\ Certification for Fume and Smoke Exhaust Ducts System for Use in Cleanrooms

FMRC-certified products are essential for duct systems in cleanrooms to prevent fire hazards and ensure safety during exhaust gas removal. SAMIL FLONTECH products meet the performance and structural standards required by FMRC, providing outstanding fire resistance and safety. These products are widely used in semiconductor and display industries.

\ Test Types : Horizontal & Combination (2 types)

\ FM Certifications Owned by SAMIL FLONTECH

01. FM4922 SUPERFLON Duct (SS304+Coating) – Widely owned in Korea
02. FM4922 SUPERFLON Duct Alpha (SS304+Lining) – First certified in Korea (Coating thickness Avg.: 1.2mm)
03. FM4922 SUPERFLON Duct Alpha Plus (SS304+Lining) – Coating thickness Avg.: 2mm
04. FM4922 ETFE SP-7215 XGN Certification – Only one in Korea

FM Approved Class : 4922 (SUPERFLON Duct)

FM Approved Class : 4922 (SUPERFLON Duct Alpha)

FM Approved Class : 4922 (SUPERFLON Duct Alpha Plus)

FM APPROVED Class : 4922 SP-7215 XGN Coating Certification

02 ISO 9001 / 14001 / 45001 Certification

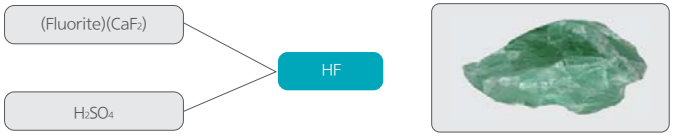
We are managing certifications in compliance with global standard

03 Characteristics of Fluororesin

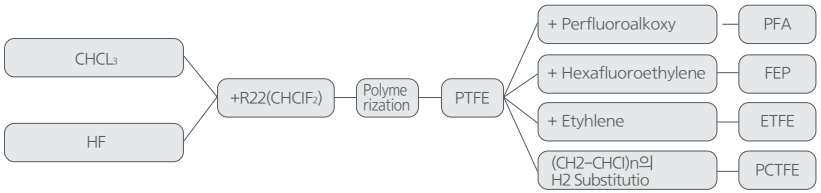
\ What is Fluororesin?

Fluororesin is a polymer material in which fluorine atoms replace hydrogen atoms in a silicon or carbon chain. PTFE (polytetrafluoroethylene), also known as Teflon®, is one of the most well-known fluororesins. It was developed in 1938 by DuPont and is widely used today. Fluororesin offers exceptional chemical resistance and is used in various applications including industrial pipes and coatings.

\ Manufacturing Process of Fluororesin



\ Monomer Synthesis



\ Chemical Structure and Features of Representative Fluororesins

Type	Chemical Structure	Features
ETFE	$-(CF_2-CF_4)n-(CH_2-CH_2)-$	Excellent chemical resistance and electrical properties; widely used for high-temperature and structural applications.
PTFE	$-(CF_2-CF_2)n-$	Non-stick, chemically inert, and thermally stable; suitable for coatings and industrial applications.
FEP	$-(CF_2-CF_2)-(CF_2-CF_4)n-$	Combines flexibility with chemical resistance; used in wire coatings and films.
PFA	$-(CF_2-CF_2)-(CF_2-CF_4)n-$	Similar to PTFE but more flexible; ideal for precision applications in the chemical and pharmaceutical industries.
PVDF	$-(CF_2-CH_2)n-$	Mechanically strong and chemically resistant; often used in filtration and piping systems.

\ Characteristics of Fluororesin

Fluororesin features excellent physical properties, mechanical strength, and durability. Its outstanding chemical resistance and thermal characteristics enable its use in various environments.

Outstanding Chemical Resistance

- Demonstrates superior chemical resistance against strong acids, alkalis, and various chemicals.

Diverse Formability

- Excellent for molding, manufacturing, and various shaping processes. Enables diverse structures and shapes. (e.g., Tank, Elbow, Tee, and customized structures)

Heat Resistance and Cold Resistance

- Outstanding performance across a wide temperature range (-200℃ to +180℃) Allows continuous use at
- temperatures up to 150℃

Weather Resistance

- Excellent performance in outdoor and sunlight (UV) exposure without deformation or degradation over time.

Non-Adhesiveness

- Low surface adhesion prevents sticking and enables smooth performance. (Non-adhesive properties)

Flame retardant

- It is a flame retardant material, and even in the event of a fire, Since it does not spread, secondary fire prevention is possible.

04 Fluoropolymer Properties Sheet

\ Fluoropolymer Properties Sheet

ITEM		Test method ASTM	Unit	PTFE	PFA	FEP	ETFE	PCTFE	PVDF
Physical	Specific gravity	D792	g/㎤	2.14~2.20	2.12~2.17	2.12~2.17	1.73	2.03~2.20	1.75~1.78
	Melting point	-	℃	327	310	275	270	220	151~178
Mechanical	Tensile Strength (23℃)	D638	Mpa	20~35	25~35	20~30	38~42	31~41	30~70
	Tensile elongation percentage	D638	%	200~400	250~330	250~330	100~400	80~250	80~300
	Compressio strength (23℃ maximum)	D695	Mpa	10~15	15~20	14~19	40~50	31~51	67~96
	Hardness (Durometer D)	D1706	Durometer	50~55	60~64	55~65	75	75~80	65~70
	Kinetic friction cofficient	0.69MPa, 3m/3min		0.1	0.2	0.3	0.4	0.4	0.4
Thermal	High temperature for continuous use	-	℃	260	260	200	150	150	150
	Heat distortion temperature	D648	℃	55	47	50	74	90	149
	Linear expansion coefficient Temperature range	D696	10/℃	10	12	8.3~11	9	6	7~14
Electrical	Volume resistivity (23℃, 50% RH)	D257	-cm	>10"	>10"	>10"	>10"	>10"	>10"
	Breakdown voltage (3.2mm)	D149	Mv/mm	19	20	22	16	22	10
	Dieletric constant (10'Hz)	D150	10'Hz	<2.1	<2.1	2.1	2.3	2.3~2.7	6.43
	Dieletric loss tangent (10Hz)	D150	10'Hz	<0.0002	<0.0002	<0.0005	<0.0005	<0.020	<0.015

Note: This data is only for reference and should be used as a guide. (Reference Source: Japan Fluororesin Industry Association) Conversion for Tensile Strength: 1 MPa ≒ 10.1972 kgf/㎠

\ Fluororesin Selection Criteria

Property \ Material		PTFE	PFA	FEP	ETFE	ECTFE	PCTFE	PVDF
Highest Use Temperature(℃)		260	260	260	260	260	260	260
Electrical Properties		◎	◎	◎	◎	◎	○	○
Non-adhesiveness (LOI %)		95<	95<	95<	30	60	95	43
Mechanical Properties		△	△	△	○	○	○	○
Machinability		◎	○	◎	△	△	△	△
Chemical Resistance	Acid	◎	◎	◎	◎	◎	◎	○
	Alkali	◎	◎	◎	◎	◎	◎	○
	Solvent	◎	◎	◎	◎	◎	○	△
Non-Adhesiveness		◎	◎	◎	○	○	○	○
Weather Resistance		◎	◎	◎	◎	◎	◎	◎
Transparency		△	○	○	△	△	○	△
Formability		△	○	○	◎	◎	○	◎
Specific Gravity		2.17	2.15	2.15	1.73	1.70	2.13	1.76

Legend : ◎ Excellent / ○ Good / △ Usable / X Not Usable
LOI %: Limiting Oxygen Index. Higher values indicate better flame resistance.

05 Product Introduction

\ FM Certified Products

SAMIL FlONTECH SUPERFLON Ducts are FM-approved for resistance to fire and hazardous environments based on international safety standards. FM-certified products are designed to be highly durable and can be safely applied in extreme environments such as exhaust systems, ventilation systems, and chemical tanks.

\ Characteristics of FM-Certified Products (Coating, Lining)

01 By utilizing fluororesin with outstanding chemical resistance, problems such as corrosion and peeling on duct parts and surfaces can be fundamentally prevented.

02 With exceptional durability and resistance to temperature ranges from -50℃ to +220℃, the product ensures excellent performance even under extreme temperatures, making it usable in various environments.

03 High mechanical strength and chemical resistance allow the product to endure strong external shocks, ensuring long-term durability and reliability in harsh environments.

04 Coating & Lining are FM4922-certified, providing proven reliability for fire resistance and safety performance.

05 Duct coating and lining offer long-lasting durability, ensuring optimal safety and performance in harsh environments

06 Product Components

Equipment Components
• Chemical Tanks (Storage, Supply, etc.)

Duct Components
• Semiconductor clean room ducts
• Acid and alkali-resistant PVC ducts

Pipe Components
• POU and cleanroom hook-up pipes and ducts
• PT/Coax Exhaust Duct & ETFE Pipes

Other Components
• Scrubbers (Incineration, Burn/heat-type components)
• Custom unit and pipe coatings

\ Coating

Powder coating is a method where fluororesin is applied to surfaces using an electrostatic spray to achieve uniform thickness and optimal adhesion. It delivers exceptional performance in extreme environments, preventing corrosion and chemical damage. Its outstanding durability and resistance make it suitable for long-term industrial use.

\ Lining

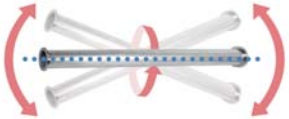
When fluorine resin powder is placed inside the device that constructs the lining and heated while rotating in the two-axis + α direction, the fluorine resin melts and forms a lining layer along the inner surface of the device.
When this construction method is applied, a very stable, high-quality lining of 1bake, 1ply can be obtained regardless of the shape of the device and the thickness of the lining layer.

07 Features of Rotational Lining

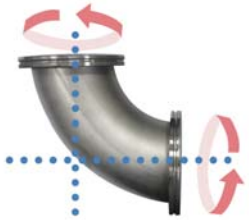
\ SUPERFLON Lining

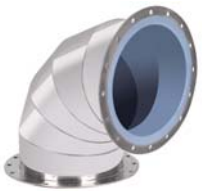
The Lining process involves evenly coating the interior of equipment with fluororesin. The process uses a rotational molding method to ensure fluororesin is applied to the interior of ducts and pipes uniformly. Unlike conventional lining methods, rotational lining improves efficiency, reduces manufacturing points, and ensures high durability and chemical resistance. This process enhances cost-effectiveness while meeting high standards in various industrial applications.

01. Long-Axis Shape: Rotational Applicability



02. . Complex Shapes: 2-Directional Rotational Lining





\ Rotational Lining Features

01. Seamless Lining Without Joints

SUPERFLON products use rotational fluororesin lining to achieve joint-free internal lining, ensuring excellent chemical resistance and safety.
Applicable to Vacuum Lines, Drainpipes, and Tank Lorries for fluid transfer systems.

02. Thick Lining is Possible

The electrostatic powder coating processing method has a coating thickness limit of about 500㎛, but rotational molding lining can form a lining film that is thicker than 1,000㎛.
(A coating thickness of up to 10,000㎛ is possible.)

03. Possible to manufacture regardless of shape

(efficient construction method improvement and innovative cost reduction possible)
Lining is possible even for complex pipe shapes, and the number of flange fastening points is minimized → effect of reducing risk points and maintenance points
Reduced construction costs: Reduced production costs, installation costs, and maintenance costs due to reduced flange installation points

- Optimized space efficiency and efficient system setting response possible with compact design and design
- Stabilized risk management due to reduced risk points
- Reduced maintenance costs due to reduced maintenance points due to reduced flange points

04. Crack-Free and Strong Adhesion

The method eliminates cracks and provides robust adhesion to ensure long-term durability.

05. Systematic Production for Rapid Response

A systematic process allows for mass production with shorter lead times.

Sheet Lining

SUPERFLON Lining

14 connection points
(more welds, less efficient).

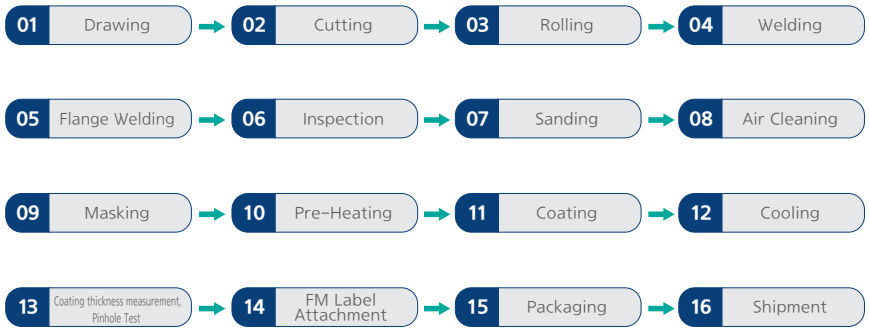
SUPERFLON Lining: Reduced to 3 points,
ensuring higher durability and efficiency.

08 Comparison by Type of Construction

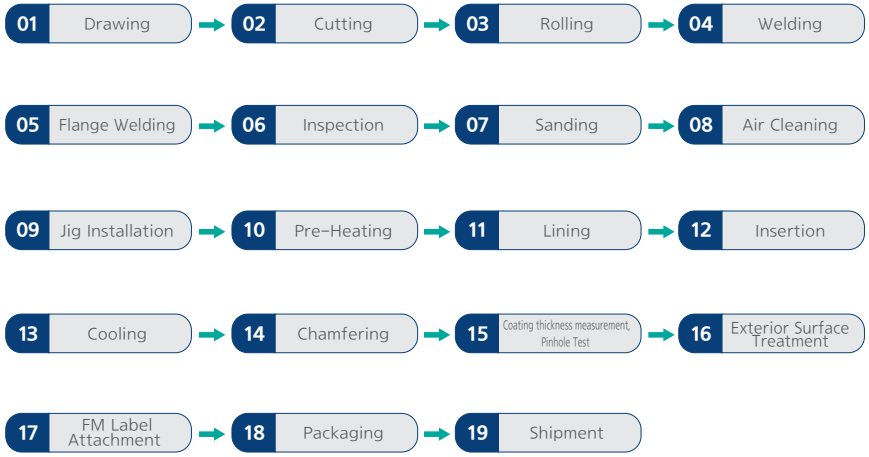
\ Comparison Table: Lining vs Coating

Category	Lining Process	Coating Process
Manufacturing Method	Inserts lining material inside the components (pipe, ducts etc.), rotates on three axes, and forms an integrated lining layer.	Flows current into the components, sprays powder coating on the surface to form a coating layer.
Application Method	Automated mechanical operation.	Manual work by skilled personnel
Applicable Materials	Applicable to all powder and liquid materials	Applicable to all powder and liquid materials
Coating Thickness	500 ~ 10,000 ㎛ (adjustable).	500 ㎛ or less
Adhesion/ Peeling	Sintering Load Capacity: 17.5 kgf/㎠	Sintering Load Capacity: 6.7 kgf/㎠
Adhesion Property	Strengthened by adhering through a uniform layer.	Limited adhesion through a thin layer.
Joint Point	No joint: Forms an integrated lining layer.	No joint: Forms an integrated film
Shape Compatibility	Possible to manufacture in various complex shapes.	Limited to structural shapes of the component.
Manufacturing Time	Within one week (based on 100M).	Within one week (based on 100M).
Resistance Properties	Strong against thermal and physical impacts.	Potential causes of interlayer delamination
Quality Assurance	Semi-permanant (more than 10 years).	Within 2 years/Based on chemical concentration standards.
Usage Environment	Suitable for exhaust/Vaccume applications.	Suitable for exhaust/Vaccume applications.

\ Coating Production Process



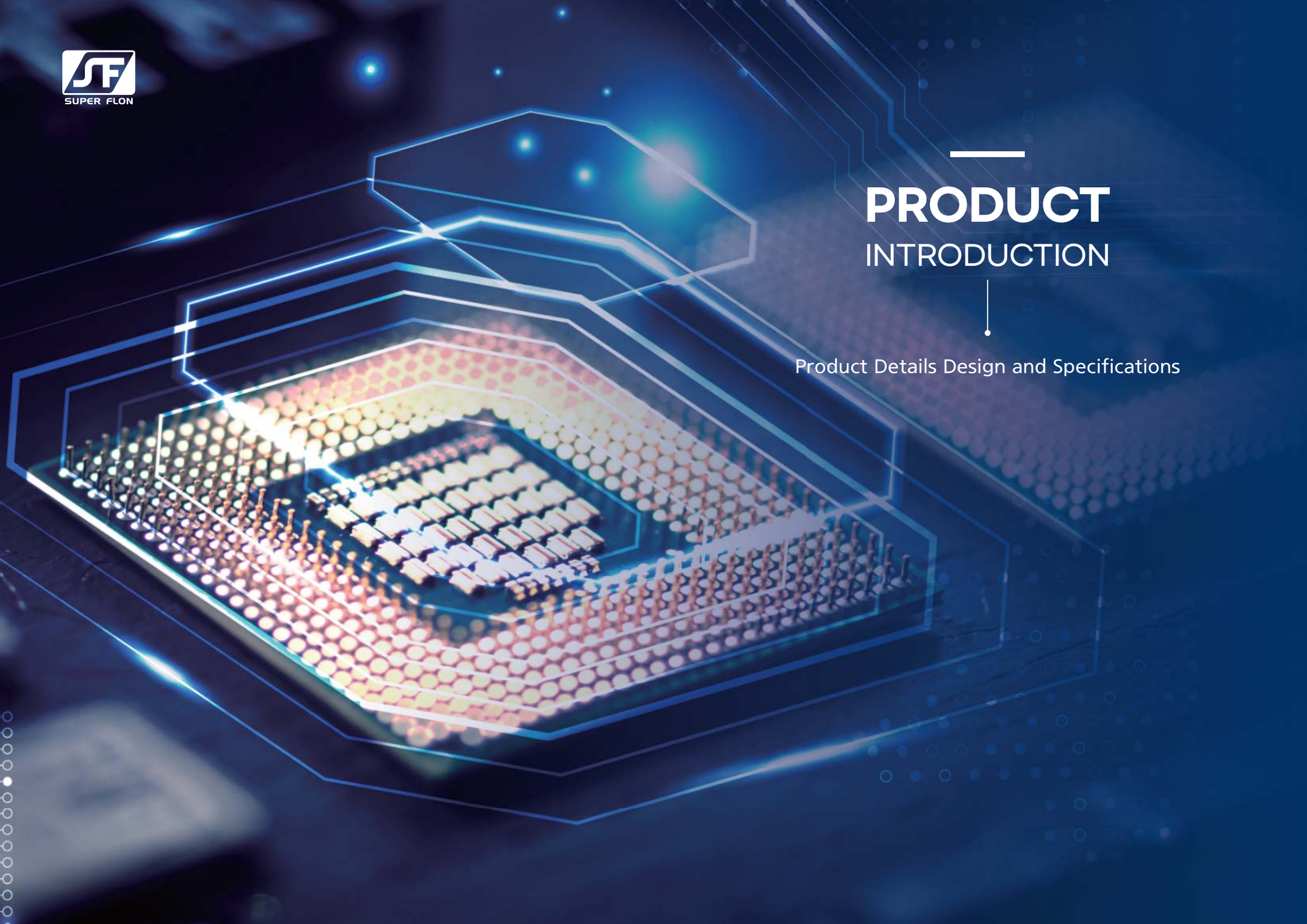
\ Lining Production Process



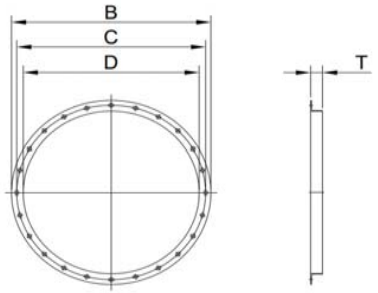
SUPER FLON

PRODUCT
INTRODUCTION

Product Details Design and Specifications



01 Loose Flange

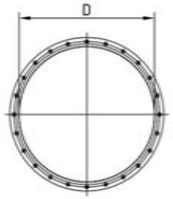


Standard

MAT'L : STS304 /Unit : mm

Flange Size(Ø)	B	C	D	Angle Flange Size	Number of Hole (ea)	Bolt Size	Bolt Hole Size
	Outside Dia (Ø)	Hole Center Dia (Ø)	Inside Dia (Ø)				
300	382	342	302	40x40x3T	12	10mm	12x17
400	482	442	402	40x40x3T	16	10mm	12x17
500	582	546	502	40x40x3T	20	10mm	12x17
600	682	646	602	40x40x3T	24	10mm	12x17
700	802	752	702	50X50X4T	28	10mm	12x17
800	902	852	802	50X50X4T	32	10mm	12x17
900	1002	952	902	50X50X4T	36	10mm	12x17
1,000	1102	1052	1002	50X50X4T	40	10mm	12x17
1,100	1202	1152	1102	50X50X4T	44	10mm	12x17
1,200	1302	1252	1202	50X50X4T	48	10mm	12x17
1,300	1402	1352	1302	50X50X4T	52	10mm	12x17

02 Round Duct



Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating		Avg 200 ~ 300㎛	ETFE, PFA
Lining		1mm ~ 4mm	

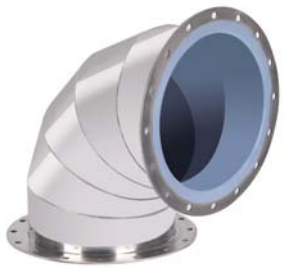
Standard

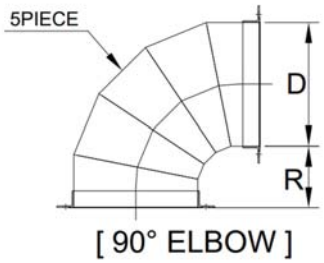
MAT'L : STS304 /Unit : mm

Duct Size(D)	L	BODY THK'
	Min. / Max.	
Ø300~1300	200 / 1505	1.2

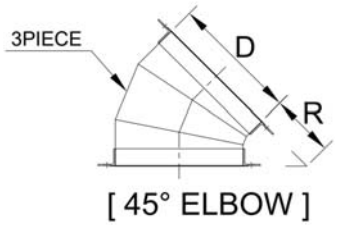
Note: Square ducts can be manufactured after size consultation.

03 Round Elbow





[90° ELBOW]



[45° ELBOW]

Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

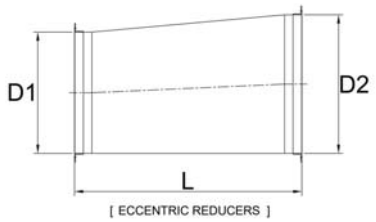
Standard

MAT'L : STS304 /Unit : mm

Duct Size(D)	R		BODY THK'
	STD.	Min. / Max.	
Ø300~1300	Ø x 1/2	Order	1.2

Note: Square ducts can be manufactured after size consultation.

04 Round Reducer



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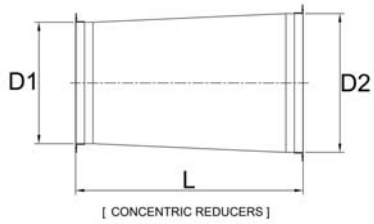


[CONCENTRIC REDUCERS]

Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

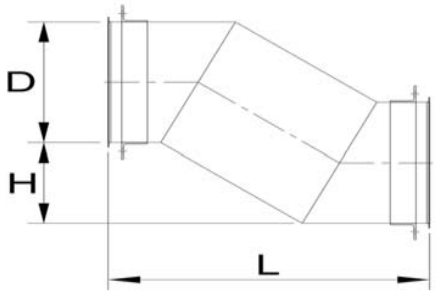
Standard

MAT'L : STS304 /Unit : mm

Duct Size(D1)	Duct Size(D2)	L	BODY THK'
		Min. / Max.	
Ø300~1300	Ø300~1300	300 / 1505	1.2

Note: Square ducts can be manufactured after size consultation.

05 S-shaped Duct



Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

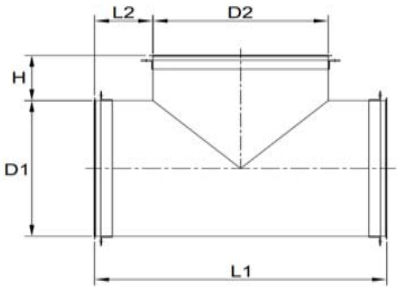
Standard

MAT'L : STS304 /Unit : mm

Duct Size(D)	L	H	BODY THK'
	Min. / Max.	Min. / Max.	
Ø300~1300	300 / 1505	Order	1.2

Note: Square ducts can be manufactured after size consultation.

06 Tee Branch



Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

Standard

MAT'L : STS304 /Unit : mm

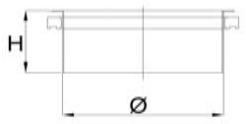
Duct Size(D1)	Duct Size(D2)	L1	L2	H	BODY THK'
		Min. / Max.	Min. / Max.	Min. / Max.	
Ø300~1300	Ø300~1300	Order / 1505	150 / Order	150 / Order	1.2

Note: Square ducts can be manufactured after size consultation.

07 CLEAN PORT NOZZLE / HOOK UP NOZZLE / TEST HOLE

\ CLEAN PORT NOZZLE





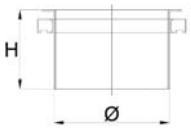
Standard

MAT'L : STS304 /Unit : mm

PORT Size(Ø)	PORT 높이 (H)	LF FLANGE	MF FLANGE	BODY THK'
		THK'	THK'	
152.4	Order	12	12	1.2

\ HOOK UP NOZZLE





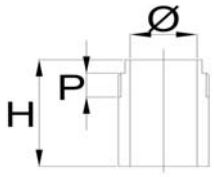
Standard

MAT'L : STS304 /Unit : mm

PORT Size(Ø)	PORT HEIGHT (H)	LF FLANGE	MF FLANGE	BODY THK'
		THK'	THK'	
101.6~267.4	Order	12	12	1.2

\ TEST HOLE





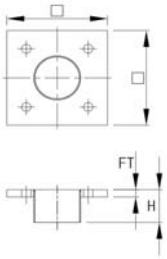
Standard

MAT'L : STS304 /Unit : mm

PORT Size(Ø)	PORT HEIGHT (H)	피치 (P)	BODY THK'
20A	40	1.5	3.5

08 MOUNT BLOCK / DRAIN PORT

\ MOUNT BLOCK

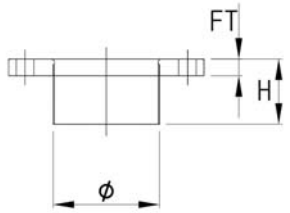



Standard

MAT'L : STS304 /Unit : mm

PORT Size(Ø)	FLAGNE Size(□)	PORT HEIGHT (H)	FLANGE	BODY THK'
			THK'	
50A	130X130	45	10	2.8

\ DRAIN PORT

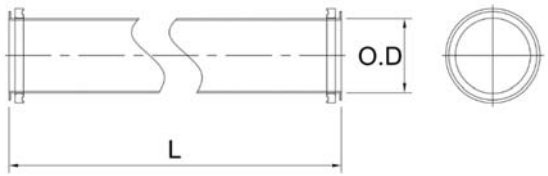



Standard

MAT'L : STS304 /Unit : mm

PORT Size (Ø)	PORT HEIGHT (H)	FLANGE	BODY THK'
		THK'	
100	Order	18	1.2
50	Order	16	1.2

09 HOOK UP PIPE



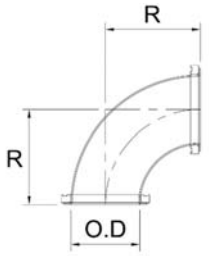
Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

Standard

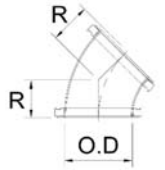
MAT'L : STS304 /Unit : mm

Size (inch)	O.D (Ø)	L	BODY THK'
		Min. / Max.	
4	101.6	130 / 1,500	2T
5	127	130 / 1,500	2T
6	152.4	130 / 1,500	2T
8	216.3	130 / 1,500	2T

10 HOOK UP ELBOW



[90°ELBOW]



[45°ELBOW]

Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

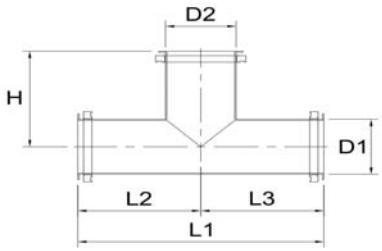
Standard

MAT'L : STS304 /Unit : mm

Size (inch)	O.D (Ø)	R	BODY THK'
		90° / 45°	
4	101.6	140 / 56	2T
5	127	172 / 72	2T
6	152.4	190 / 80	2T
8	216.3	210 / 88	2T

"If pipe extension is required, the length can be adjusted upon consultation."

11 HOOK UP TEE



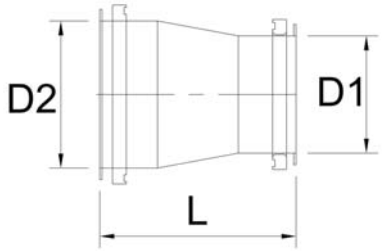
Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

Standard

MAT'L : STS304 /Unit : mm

Size (inch)	D1 (Ø)	D2 (Ø)	L1	L2	L3	H	BODY THK'
4	101.6	Order	Order	Order	Order	Order	2T
5	127	Order	Order	Order	Order	Order	2T
6	152.4	Order	Order	Order	Order	Order	2T
8	216.3	Order	Order	Order	Order	Order	2T

12 HOOK UP REDUCER



Type	Color	Coating Thickness	Applicable fluororesin
FM Approvals Coating	● ●	Avg 200 ~ 300㎛	ETFE, PFA
Lining	● ● ●	1mm ~ 4mm	

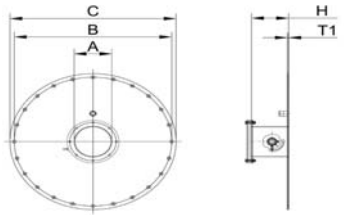
Standard

MAT'L : STS304 /Unit : mm

D1 (Ø)	D2 (Ø)	L	BODY THK'
		Min. / Max.	
101.6	Order	130 / 1,500	2T
127	Order	130 / 1,500	2T
152.4	Order	130 / 1,500	2T
216.3	Order	130 / 1,500	2T

13 Check Window / END CAP

\ Check Window



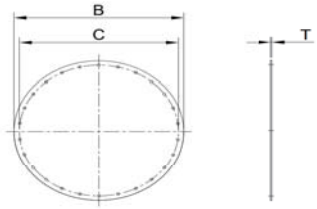
Type	Color	Coating Thickness	Applicable fluororesin
Coating	● ●	Avg 200 ~ 300㎛	ETFE

Standard

MAT'L : STS304 /Unit : mm

CHECK WINDOW Size(Ø)	A	B	C	TEST HOLE Size	H	BODY THK'
	Damper Dia (Ø)	Outside Dia (Ø)	Hole Center Dia(Ø)			
300~1300	150	Order	Order	20A	150.5	5

\ END CAP



Standard

MAT'L : STS304 /Unit : mm

END CAP Size(Ø)	B	C	BODY THK'
	Outside Dia (Ø)	Hole Center Dia (Ø)	
300~1300	Order	Order	5T

14 Clean Port / DC CAP

\ Clean Port

Type	Color	Coating Thickness	Applicable fluororesin
Coating	● ●	Avg 200 ~ 300㎛	ETFE

MAT'L : STS304, VITON /Unit : mm

Clean Port Size (Ø)	REMARK
152.4	1. CLEAN PORT CAP + TEST HOLE 2. VITON GASKET 3. CLAMP

\ DC CAP

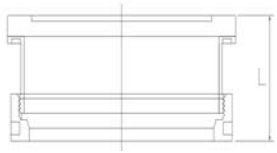
Type	Color	Coating Thickness	Applicable fluororesin
Coating	● ●	Avg 200 ~ 300㎛	ETFE

Standard

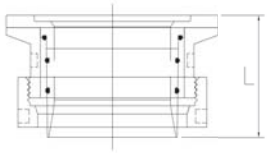
MAT'L : STS304 /Unit : mm

Size (Ø)	O.D (Ø)	THK'
100	130	12T
125	155	12T
150	180	12T
200	240	12T
250	290	12T

15 Adapter & Adapter jig



ADAPTER 100~200A



ADAPTER 50,65A

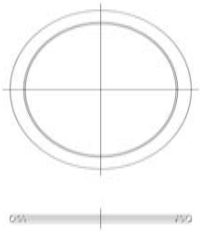
- For Integrated Use 50~150A ADAPTER JIG
- For Individual Use 200A ADAPTER JIG

Standard

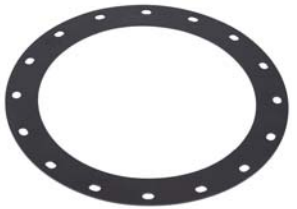
MAT'L : STS304 /Unit : mm

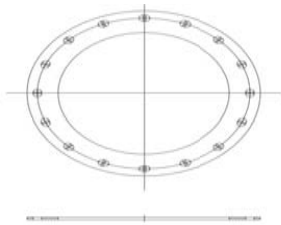
Size (Ø)	L	Size (inch)
50	49	1. PTFE form adherend 2. VITON GASKET 3. VITON O' RING 4. Material STS304
65	49	
100	54	
125	54	
150	54	
200	54	

16 Gasket

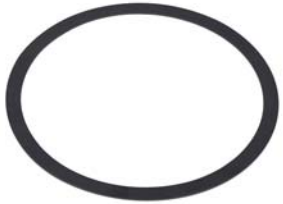


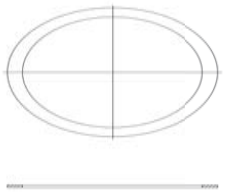
Type	LOOSE Flange Gasket
Ø Size	100~1300A





Type	Flat Flange Gasket
Ø Size	250~1300A



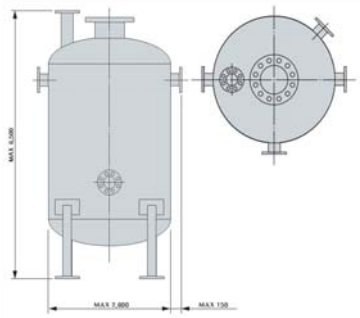


Type	LINING Duct Gasket
Ø Size	100~1300A

17 SUPERFLON Lining Tank

\ SUPERFLON Lining Tank

The SUPERFLON Lining Tank, manufactured with non-stick properties, is chemically resistant, has a low temperature coefficient, is superior in surface smoothness, and is highly insulating. By integrating with various industrial products, this tank ensures excellent performance in highly corrosive applications. It can be utilized for filter housing, vessel tanks, and process systems in the semiconductor, chemical, pharmaceutical, and food industries.



Max Diameter	Max Height	Max Support Thickness	Applicable Fluid
2,600mm	6,500mm	150mm	ETFE, PFA

※ For details regarding the tank shape, length, and manufacturing method, please contact us for further consultation.
※ We also manufacture and provide lining for tank floors, filter housings, and vessels.

18 UPW Piping System

\ UPW Piping System

The UPW (Ultra-Pure Water) Piping System is designed for the safe and reliable transfer of ultra-pure water. This system includes pipes, elbows, tees, stubs, flanges, and reducers with a seamless design to minimize contamination and ensure high purity. The UPW Piping System is ideal for use in the semiconductor, pharmaceutical, and food processing industries, and it supports a variety of pure water and chemical transfer applications.
Note: For specifications outside the table above, please consult with us for custom manufacturing.

Unit : mm

Type	Image	Size(Ø)		Length (L)		THK		Applicable Fluid
		Min	Max	Min	Max	Min	Max	
Pipe		16	225	50	5,000	1.9	6.9	ETFE, PVDF, PE, PP
90D ELBOW		20	225	38	220	1.9	6.9	
TEE		20	225	76	440	1.9	6.9	
UNION SET		20	110	106	130	1.9	5.3	
STUB FLANGE		20	225	54	102	1.9	6.9	
REDUCER		20~25	160~225	50	160	1.9	6.9	

※ For specifications outside the table above, please consult with us for custom manufacturing.

CERTIFICATE
PATENT
TEST REPORT

01 Certification Details

FM APPROVED Class : 4922 (SUPERFLON DUCT)

FM APPROVED Class : 4922 (SUPERFLON DUCT ALPHA)

FM APPROVED Class : 4922 (SUPERFLON DUCT ALPHA+)

FM APPROVED Class : 4922 SP-7215 XGN Coating Certification

ISO 9001: 2015

ISO 14001: 2015

ISO 45001: 2018

01 Certification Details


제 2022111288 호

기업부설연구소 인정서

1. 연 구 소 명: (주)삼일씨앤에프 기업부설연구소
[소속기업명: (주)삼일씨앤에프]
2. 소 재 지: 경기도 안성시 원곡면 원암로 142-31 2층
3. 신고 연월일: 2023년 12월 26일
(최초인정일 : 2022년 3월 11일)
■ 변경내역: 법정기간 변경

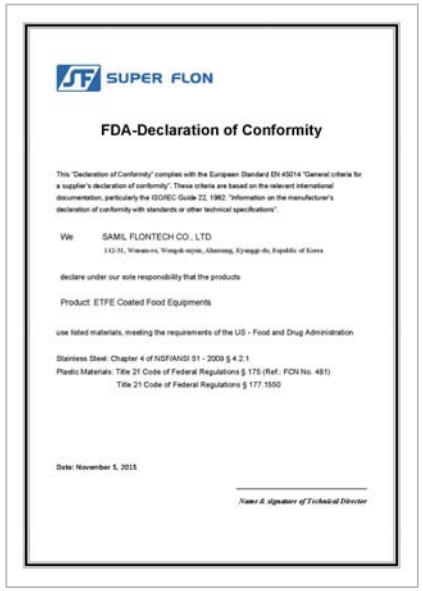
과학기술정보통신부

「기초연구진흥 및 기술개발지원에 관한 법률」 제14조의 2제1항 및 같은 법 시행령 제27조제1항에 따라 위와 같이 기업부설연구소로 인정합니다.

2024년 1월 19일

한국산업기술진흥협회장

"Certificate of Recognition for Company-Affiliated Research Institute"


SUPER FLON

FDA-Declaration of Conformity

This "Declaration of Conformity" complies with the European Standard EN 45014 "General criteria for a supplier's declaration of conformity". These criteria are based on the relevant international documentation, particularly the ISO/IEC Guide 22, 1982: "Information on the manufacturer's declaration of conformity with standards or other technical specifications".

We SAMIL FLONTECH CO., LTD.
143-31, Wonnam-ro, Wongok-myon, Anseong, Kyunggi-do, Republic of Korea

declare under our sole responsibility that the products

Product: ETFE Coated Food Equipments

use listed materials, meeting the requirements of the US - Food and Drug Administration

Stainless Steel: Chapter 4 of NSF/ANSI 51 - 2009 § 4.2.1
Plastic Materials: Title 21 Code of Federal Regulations § 175 (Ref.: FCN No. 481)
Title 21 Code of Federal Regulations § 177.1550

Date: November 5, 2015

Name & signature of Technical Director

FDA Certification


벤처기업확인서

CERTIFICATE OF VENTURE ENTERPRISE

- 기업명 (주)삼일씨앤에프
- 사업자등록번호 205-81-38599
- 대표자 이성종, 이성룡
- 주소 경기도 용인시 처인구 이동읍 덕성산단2로50번길 8
- 확인유형 혁신성장유형
- 유효기간 2022년 12월 06일 ~ 2025년 12월 05일

위 기업은 「벤처기업육성에 관한 특별법」 제25조의 규정에 의거 벤처기업임을 확인합니다.

2024년 08월 06일

벤처기업확인기관장

Venture Business Certificate


제 220601 - 00141 호

기술혁신형 중소기업(Inno-Biz) 확인서

업 체 명 : (주)삼일프론테크
대 표 자 : 이성종
주 소 : 경기 안성시 원곡면 원암로 142-31
등 급 : A
유효기간 : 2022. 1. 27 ~ 2025. 1. 26

위 업체는 기술혁신형 중소기업 육성사업에 의해 선정된 기술혁신형 중소기업(Inno-Biz)임을 확인합니다.

2022년 1월 27일

중소벤처기업부장관

Certificate of Technology-Innovative Small and Medium Enterprise

02 Patent Details


특허증

CERTIFICATE OF PATENT

특허 제 10-1975834 호

출원번호 제 10-2017-0035554 호
출원일 2017년 03월 21일
등록일 2019년 04월 30일

발명의명칭 벨로우즈 보호막 형성방법 및 벨로우즈 보호막 형성시스템

특허권자 (주)삼일씨앤에프(110111-*******)
경기도 용인시 처인구 이동읍 덕성산단2로 50번길 8

발명자 이성종(830419-*******)
경기도 안성시 원곡면 원암로 142-31

위의 발명은 「특허법」에 따라 특허원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.

2024년 03월 19일

특허청장
COMMISSIONER,
KOREAN INTELLECTUAL PROPERTY OFFICE

특허청
Korean Intellectual Property Office

Method for Forming Bellows Protective Coating and Bellows Protective Coating Formation System


특허증

CERTIFICATE OF PATENT

특허 제 10-1674949 호

출원번호 제 10-2015-0092259 호
출원일 2015년 06월 29일
등록일 2016년 11월 04일

발명의명칭 라이닝배관어댑터장치

특허권자 (주)삼일씨앤에프(110111-*******)
경기도 용인시 처인구 이동읍 덕성산단2로 50번길 8

발명자 등록사항란에 기재

위의 발명은 「특허법」에 따라 특허원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.

2024년 03월 19일

특허청장
COMMISSIONER,
KOREAN INTELLECTUAL PROPERTY OFFICE

특허청
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Lining Pipe Adapter Device


특허증

CERTIFICATE OF PATENT

특허 제 10-2237842 호

출원번호 제 10-2020-0047123 호
출원일 2020년 04월 20일
등록일 2021년 04월 02일

발명의명칭 플랜지관 구조물

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위의 발명은 「특허법」에 따라 특허원부에 등록되었음을 증명합니다.
This is to certify that, in accordance with the Patent Act, a patent for the invention has been registered at the Korean Intellectual Property Office.

2024년 03월 19일

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Flanged Pipe Structure


특허증

CERTIFICATE OF PATENT

특허 제 10-1695199 호

출원번호 제 10-2015-0103808 호
출원일 2015년 07월 22일
등록일 2017년 01월 05일

발명의명칭 라이닝플랜지 및 라이닝플랜지접합체

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발명자 등록사항란에 기재

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Lining Flange and Lining Flange Assembly

03 Patent Details

Method for Forming a Fluorine–Based Water–Repellent Coating Inside a Gas Cylinder

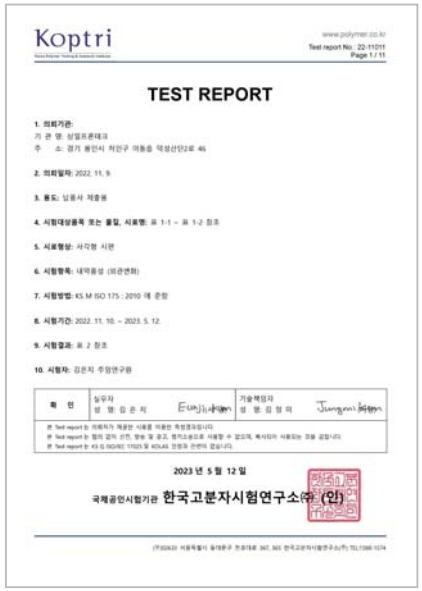
Pipe Gasket

Trademark Registration Certificate (SUPER FLON)

Design Registration Certificate (Flange for Pipe Connection)

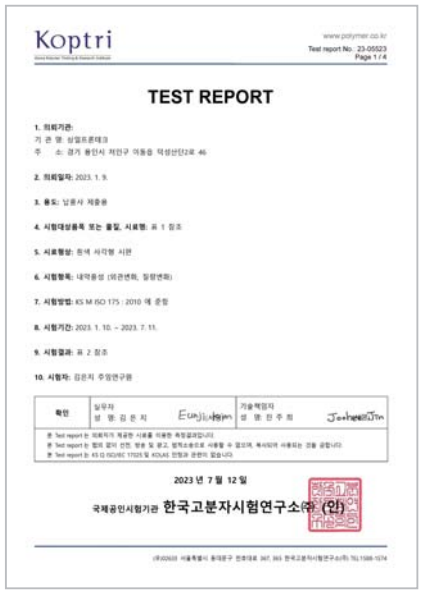
04 Test Report (Raw Material / Chemical Resistance Test)

※When requested by clients, tests are conducted through accredited institutions. In addition to the requested tests, we have conducted various other tests and hold the corresponding reports.



Test Report for Coating Material: 6–Month Hydrofluoric Acid Immersion Test

Test Report for Coating Materials: Chemical Immersion Test for 5 Types

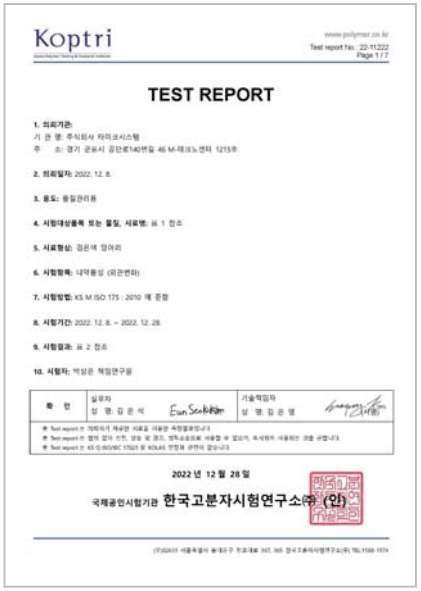


Test Report for Lining Material: 6–Month Hydrofluoric Acid Immersion Test

Test Report for Lining Materials: Chemical Immersion Test for 5 Types

05 Test Report (Gasket Properties and Immersion Test)

※ When requested by clients, tests are conducted through accredited institutions. In addition to the requested tests, we have conducted various other tests and hold the corresponding reports.



Test Report for Gasket:
Hydrofluoric Acid Immersion Test

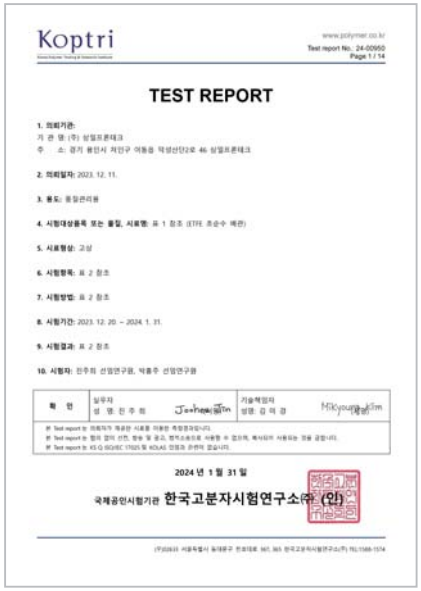
Test Report for Gasket:
Chemical Immersion Test for 5 Types

Test Report for Adapter:
Pressure and Depressurization Test (50A,65A)

Test Report for Adapter:
Pressure and Depressurization Test (100A,125A,150A)

06 Test Report (UPW Piping System)

※ When requested by clients, tests are conducted through accredited institutions. In addition to the requested tests, we have conducted various other tests and hold the corresponding reports.



Test Report for UPW Piping System: Metal and Ion Extraction Test

Radiographic Testing (RT)

Maximum Tensile Load Test