

Case History

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ABOUT SWANCOR

Swancor is a professional resin manufacturer for FRP Applications since 1992. With continuous improvement and innovation, Swancor provide quality resins, customized products, as well as sustainable solutions to customers. We also keep on developing new products to meet customer's requirements, particularly in the fields of energy saving and environmental protection.

Being recognized as a symbol of quality, innovation and integrity, we provide quality products and in-time service, drive innovation, and act with integrity. Swancor products can be reached in more than thirty countries, and our solutions can be found in a variety of applications, including power plant, mining industry, semiconductor industry construction, water and exhaust gas treatment, flooring and lining, etc.

This case history collects a wide variety of applications that Swancor's products have been applied to. It provides a general understanding of where and how our products can be used.

FGD(Flue Gas Desulfurization) System

Flake Lining for FGD system



Service Condition/ Specification	Exhaust and fume containing SO ₂ and SO ₃ at 75-105°C (low temperature part) or 80-140°C(high temperature part).
Resin used	SWANCOR 984-M SWANCOR 905-FLT SWANCOR 907-FLT
Fabrication Method	Trowel coating
End User	1. Formosa Plastics Co. - Jen-Wu public plant (Taiwan) 2. Formosa Plastics Co. – Chung-Hua plant (Taiwan)

Flake Lining for FGD system



Service Condition/ Specification	Flues of FDG system in power plant, treat fumes including SO ₂ and SO ₃ at 60-100°C(low temperature part) or 100-150°C(high temperature part).
Resin used	SWANCOR 901-FLT SWANCOR 907-FLT
End User	China HUANENG power plant, Luohuang

Flake Lining for FGD system



Service Condition/ Specification	Flake lining for FGD system
Resin used	SWANCOR 984-M 、SWANCOR 901-FLTP-6X/7X 、 SWANCOR 901-TPW-7X 、SWANCOR 917-P 、 SWANCOR 907-FLTP-6X/7X 、SWANCOR 907-TPW-7X
Fabrication Method	Trowel coating
End User	Xinjiang Shihezi Tianye Group Thermal Power Plant

Ammonia Base FGD Tower



Service Condition/ Specification	2 units of 350MW and 2 ammonia based FGD towers: diameter of 13.5m, height of 25m and volume of 3500m ³ . 2 oxidation columns have diameter of 13.5m and height of 9m.
Resin used	SWANCOR 907 for high temperature part SWANCOR 901 for middle temperature part.
Fabrication Method	Filament winding
End User	New Hope Group Aluminum Corporation, Baotou

Flake Lining for FGD



Service Condition/ Specification	FGD liner of 8 sets 600MW power generating units
Resin used	Primer: SWANCOR 984-M 、 SWANCOR 917-P Flake: SWANCOR 907-FL 、 SWANCOR901-FL Top-coat: SWANCOR 901-PW 、 SWANCOR 907-PW
Fabrication Method	Trowel coating
End User	DTP, Togtoh power plant

FGD Tower for Power Plant



Service Condition/ Specification	Exhaust with 80°C, diameter is 7.2m and height is 25m
Resin used	Structural resins: SWANCOR 963 Corrosion barrier: SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Zhecheng power plant, Shandong Province

Desulfurization System and Stacks



Service Condition/ Specification	Power plant desulfurization tower and stack for three-stage spray system under ammonia desulphurization process. Exhaust quantity is 112600m ³ /h. Tower size : 32m height and 5m diameter ; Stack size : 30m height and 1.2m diameter
Resin used	High temperature part using SWANCOR 907 and SWANCOR 901 is used in the area under 100°C. Structural layer : SWANCOR 963
End User	Huba Group, Zhejiang

Desulfurization System and Stacks




Service Condition/ Specification	FRP stacks of 2 units of 300MW and related FGD systems and flue gas pipe of 5.4m diameter and total 300 meters length
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Liangcun Power plant, Shijiazhuang

Stack & Flue Gas Duct

FRP Stacks for Coal Power Plant in China using SWANCOR 905-2

	Service Condition/ Specification	Wet flue gas, service temperature 50-90°C FRP stack size :5~8m diameter and height of 185m-240m
	Resin used	SWANCOR 905-2
	Fabrication Method	Filament winding
	End User	Xinjiang, Hutubi Power Plant (2012)
		Chongqing, Shizhu Power Plant (2013)
		Heilongjiang, Yichun Power Plant (2013)
		Xinjiang, Bayingol Power Plant (2014)
		Shangxi, Taiyuan 2 nd Power Plant (2014)
		Jiangxi, Fuzhou Power Plant (2014)
		Hunan, Youxian Power Plant (2015)
		Chongqing, Fengjie Power Plant (2015)
		Gansu, 803 Power Plant (2015)
		Shangxi, Guangyu Power Plant (2015)
		Shangdong, Linqing Power Plant (2016)
		Hebei, Yuxiang Power Plant (2016)
Jilin, Jiangnan Power Plant (2016)		
Hebei, Handan Power Plant (2016)		
		
		

Old Stack Renovation in Power Plant

	Service Condition/ Specification	Exhaust stack renovation with anti-corrosion lining in power plant. Major corrosion media is acidic exhaust gas
	Resin used	SWANCOR 905-2 SWANCOR 905-N SWANCOR CP95
	Fabrication Method	Hand lay-up
	End User	China GUODIAN Group, Datong Second power plant, Datong

FRP Stack for Nuclear Power Plant



Service Condition/ Specification	Stacks for generator sets No.1 and No.2 with height of 60m and diameter of 3m
Resin used	SWANCOR 905-2
Fabrication Method	Filament winding
End User	Hongyanhe nuclear power plant, Dalian

FRP Stack for Power Plant



Service Condition/ Specification	Coal power plant, exhaust gas temperature from 80°C -150°C Stack has height of 60m and diameter of 3m.
Resin used	Corrosion Barrier: SWANCOR 907 Structural: SWANCOR 963
Fabrication Method	Filament winding
End User	Sinopec, Karamay

FRP Stack for Power Plant



Service Condition/ Specification	FRP stacks of 2 equipment units of 210t/h for furnace exhaust treatment. Diameter is 5m and height is 51m, systems are located over desulfurization tower. Corrosion media is fume after desulfurization and temperature is below 80°C
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	CNPC, power plant for Petrochemical industry, Urumqi

FRP Stack for Power Plant



Service Condition/ Specification	Diameter is 4m and height is 120m, service temperature is 100°C and design temperature is 120°C
Resin used	SWANCOR CHEMPULSE 901 as structural layers and SWANCOR CHEMPULSE 907 as corrosion barrier
Fabrication Method	Filament winding
End User	Fuchunjiang Environmental protection company, Zhejiang Province

Waste Water Treatment

Lining for Waste Water Tank



Service Condition/ Specification	Waste water, room temperature
Resin used	Primer: SWANCOR CP95 Corrosion Barrier: SWANCOR 901
Fabrication Method	Hand lay-up
End User	EGAT Southern Bangkok

FRP Scrubber



Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Hand lay-up
End User	Guiyang coal - fired power plant, Guiyang

WESP (Wet Electrostatic Precipitator)

WESP System



Service Condition/ Specification	Size: 6500mm*5500mm*13700mm, corrosion media is NH ₃ : 40mg/m ³ , NO _x : 160 mg/m ³ , HCl: 400 mg/m ³ , fluoride: 100 mg/m ³ , Cl ₂ : 75mg/m ³ , SiO ₂ : 100 mg/m ³ , service temperature is 22-40°C.
Resin used	SWANCOR 915
Fabrication Method	Hand lay-up
End User	BOE, Chongqing

WESP System



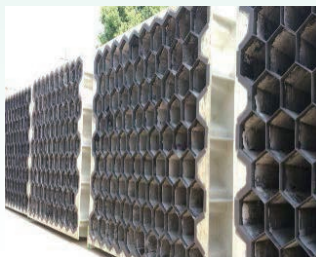
Service Condition/ Specification	10m*10m*11m, corrosion media is SO ₂ : 75mg/m ³ , SO ₃ : 65mg/m ³ , Dust: 46 mg/m ³ , service temperature is 55°C
Resin used	SWANCOR 915
Fabrication Method	Hand lay-up
End User	Sanmuche, power plant, Jiangsu

WESP System



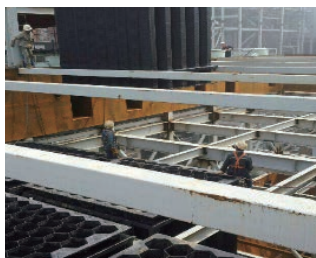
Service Condition/ Specification	Length of 10m, width of 4.2m and height of 6m. Corrosion media is dust, SO ₂ and HCl
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Hand lay-up
End User	Lucheng nanxing Cleaning Company, Wenzhou

WESP System



Service Condition/ Specification	Exhaust gas after desulfurization
Resin used	SWANCOR 915
Fabrication Method	Filament winding and Hand lay-up
End User	Power plant, Hebi City

WESP System



Service Condition/ Specification	Exhaust gas after desulfurization 2 equipment with 350MW, 48 modules with 3824 units
Resin used	SWANCOR 915
Fabrication Method	Filament winding and Hand lay-up
End User	Hepo power plant, Shanxi Province

WESP System



Service Condition/ Specification	Exhaust gas after desulfurization
Resin used	SWANCOR 915
Fabrication Method	Filament winding and Hand lay-up
End User	China Guodian Corporation, Huai'an power plant

WESP System



Service Condition/ Specification	$\text{pH} \leq 2$ and temperature is $50-60^{\circ}\text{C}$
Resin used	SWANCOR 915 SWANCOR 1305
Fabrication Method	Filament winding and Hand lay-up
End User	Guotou jinneng power ltd. North Sinkiang power plant

WESP System



Service Condition/ Specification	Exhaust gas after desulfurization, temperature is 80°C
Resin used	SWANCOR 915 SWANCOR 1305
Fabrication Method	Hand lay-up
End User	Chengde power plant, Hebei Province

WESP System



Service Condition/ Specification	Exhaust gas after desulfurization
Resin used	SWANCOR 901-FLT SWANCOR 984 SWANCOR 915
Fabrication Method	Flake trowel, Hand lay-up
End User	Guotou jinneng power ltd. North Sinkiang power plant

Lining Application for Pickling Bath



Service Condition/ Specification	18 pickling baths, with 4000m ² totally. Corrosion media includes sulfuric acid, hydrochloric acid and nitric acid.
Resin used	Primer: SWANCOR CP-95 Corrosion Barrier: SWANCOR 901P Top-coating: SWANCOR 901 with wax
Fabrication Method	SWANCOR CP-95 coated as primer after surface treatment for concrete and make laminating with SWANCOR 901P and chopped strand mat for 9 layers. SWANCOR 901 with wax is used as top-coating.
End User	Froch Enterprise

Tank Lining



Service Condition/ Specification	6 pH controlling facilities, service temperature is 50°C. 2 pickling baths, service temperature is 85°C, pH value is 0.98-1.59 and corrosion media is hydrochloric acid. 5 degreasing baths, 2 chemical storage tanks contain 48% sodium hydrate and 37% hydrochloric acid.
Resin used	SWANCOR 901 for controlling facility and degreasing bath SWANCOR 907 for pickling bath and degreasing bath
Fabrication Method	Hand lay-up, filament winding
End User	Ornasteel, Malaysia

Scrubber



Service Condition/ Specification	Hydrochloric acid exhaust gas from galvanize production line with 80°C as maximum.
Resin used	SWANCOR 907
Fabrication Method	Filament winding for FRP towers' structure layers Linings use C-veil for corrosion resistance
End User	China steel, Kaohsiung

FGD for Sintering Equipment



Service Condition/ Specification	FGD for 2*360m ² sintering equipment, corrosion media is SO ₃ , SO ₂ , NO _x , HF and HCl, treatment ability is 400000Nm ³ /h, pH is 11-12 and temperature is below 105°C
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding and hand lay up
End User	Rizhao Steel, Shandong Province

FGD for Sintering Equipment



Service Condition/ Specification	Treatment ability is 400000Nm ³ /h, bottom diameter is 9.5m and height is 29.5m, top diameter is 4.4m and height is 70m
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Wuhan Iron and Steel (Group) Company, Kunming

FGD for Sintering Equipment



Service Condition/ Specification	5% HF, 10% HCl, 40% H ₂ SO ₄ , temperature is 70°C
Resin used	SWANCOR 901-FLTCP SWANCOR 907-FLTCP
Fabrication Method	Filament winding and Hand lay-up
End User	Bao Steel

Anti-corrosion Coating



Service Condition/ Specification	Fumes containing hydrogen chloride, nitric acid and sodium hydroxide
Resin used	Primer: SWANCOR 984-M Coating: SWANCOR 901-FLS
Fabrication Method	The metal surface was sand blasted to Sa 2.5, and SWANCOR 984-M was applied as primer. Two layers of SWANCOR 901-FLS were sprayed.
End User	Chiang Shin

FGD System



Service Condition/ Specification	Flue pipe entrance temperature is 150-160°C and exhaust after treated is 70-80°C, FGD diameter is 8.4m, height is 26.5m and stack diameter is 4.3m and height is 50m
Resin used	FGD entrance pipe used SWANCOR CHEMPULSE 907 Corrosion barrier used SWANCOR CHEMPULSE 907 Laminating layers used SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Shenyin Special steel, Ningxia Province

Hydrochloric Acid Storage Tank



Service Condition/ Specification	37% hydrochloric acid FRP tank, each have height of 8m and 6m as diameter. Total capacity is 100MT
Resin used	SWANCOR 901-TP
Fabrication Method	Winding for structure layers and surface veils are used for resin-rich corrosion barrier. Surface contains UV-protection additives.
End User	Kobe Steel

High Temperature Stack



Service Condition/ Specification	Sulfur dioxide and sulfur trioxide gas, temperature is 125-200°C. Diameter is 2.8m and height is 60m.
Resin used	SWANCOR 907
Fabrication Method	Winding for structure layers and surface veils are used for resin-rich corrosion barrier. Surface contains UV-protection additives.
End User	China Steel, Kaohsiung

Electrolytic Cell

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/ Specification	40% H ₂ SO ₄ at 80°C, (typical solution is H ₂ SO ₄ 180-200g/L, Cu ²⁺ : 45-50g/L, temperature is 60-70°C)
Resin used	SWANCOR CP95 SWANCOR 901
Fabrication Method	Hand lay-up
End User	Zijin Mining, cuproauride site

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/ Specification	Corrosion media is H ₂ SO ₄ 180-200g/L, Cu ²⁺ : 45-50g/L, Cl ⁻ : 0.15g/L, temperature is 63-65°C
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Hand lay-up
End User	XGC Xiangguang Copper, Shandong

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/ Specification	35% H ₂ SO ₄ , temperature is 65°C
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Hand lay-up
End User	Dachang Copper, Shanghai

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/ Specification	FRP extraction tank lining in electrode position workshop in copper hydrometallurgy facility
Resin used	SWANCOR CP95 for concrete substrate SWANCOR CHEMPULSE 901
Fabrication Method	Primer coat first, Structural with chopped mat and SWANCOR CHEMPULSE 901-P. Surface veil is used on top for resin-rich layer.
End User	Zijin Mining, cuproauride site

Lining of Concrete Electrolytic Cell (Copper Extraction)



Resin used

Lining: SWANCOR 901
Structural: SWANCOR 915
SWANCOR 961

End User

Jinchuan copper smelting plant, Congo

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/
Specification

2 units of circulating tank with electrolyte, with size of 12*6*2.8m, 1 unit of elevated tank, with size of 6*4*3m, reinforced by FRP square steel

Resin used

SWANCOR CHEMPULSE 901

Fabrication Method

Hand lay-up

End User

Jiangxi Copper Corp. Guixi site

Polymer Concrete Electrolytic Cell (Copper Extraction)



Service Condition/
Specification

Sulfuric acid and electrolyte

Resin used

SWANCOR 901

Fabrication Method

Mortar casting

End User

Jinchuan copper smelting plant, Fangchenggang

Lining of Concrete Electrolytic Cell (Copper Extraction)



Service Condition/
Specification

Sizes have 12*8*2.8m, 8*6*2.8m and 6*4*2.5m, temperature is 70°C under normal pressure. Corrosion media is H₂SO₄ of 200g/L and Cu²⁺ of 55g/L, media density is 1.25t/m³.

Resin used

SWANCOR CHEMPULSE 901

Fabrication Method

Hand lay-up

End User

Jinchuan copper smelting plant

Lining of Concrete Electrolytic Cell (Zinc Extraction)



Service Condition/ Specification	Corrosion media is zinc sulfate with 180-200 mol/L, Temperature is 40-60°C, Size is 3.775×1.050×1.603m
Resin used	SWANCOR 961 SWANCOR 963
Fabrication Method	Hand lay-up
End User	KHAM-THAV, Vietnam

Lining of Concrete Electrolytic Cell (Zinc Extraction)



Service Condition/ Specification	25% zinc sulfate, temperature is 80°C.
Resin used	SWANCOR 961
Fabrication Method	Hand lay-up
End User	Zinc electrolysis facility, Shangluo

Polymer Concrete Electrolytic Cell (Zinc Extraction)



Service Condition/ Specification	Zinc electrolytic cell casted by resin concrete
Resin used	SWANCOR 901
Fabrication Method	Hand lay-up
End User	Jiangxi Copper Corp. Yunnan Chihong Zinc-Germanium Corp.

Electrolyte Transport Pipes and Storage Tanks

FRP Pipes



Service Condition/ Specification	Transport for sulfuric acid and electrolyte
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Jiangxi Copper Corp. 4 th phase

FRP Tank



Service Condition/ Specification	Storage for sulfuric acid and electrolyte
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Jiangxi Copper Corp. 4 th phase

Storage Tanks for Chemical Treatment



Service Condition/ Specification	Mineral chemical treatment, flame-resistance requirement
Resin used	SWANCOR 905
Fabrication Method	Filament winding for structure and hand lay-up for lining with glass-fiber mat or carbon-fiber mat
End User	Nonferrous mine, Memphis

Storage Tanks for Nickel-Cobalt Extraction



Service Condition/ Specification	Extraction to produce nickel and cobalt has 36 different FRP tanks. Service temperature is 55°C
Resin used	SWANCOR 905-2 as corrosion barrier and ISO-UPR as structure
Fabrication Method	Filament winding for structure and hand lay-up for lining
End User	Facilities in Argentina, New Zealand and Canada

Other FRP Facilities

FRP Stack for Exhaust Gas (Copper Extraction)



Service Condition/
Specification

Stack has diameter of 5m and height of 126m. Corrosion media is sulfuric acid fume, service temperature is 120°C and design temperature is 160°C

Resin used

SWANCOR CHEMPULSE 907

Fabrication Method

Filament winding

End User

Tongling Nonferrous Metal Group

FRP Tank for Alkali Solution Storage for Scrubber



Service Condition/
Specification

Sodium citrate buffer solution with pH 3.0-6.5, NaHSO₃ and Na₂SO₃ mixed solution with pH 5-6, temperature is below 75°C, size is diameter of 9m and height of 9m

Resin used

SWANCOR CHEMPULSE 901

Fabrication Method

Filament winding

End User

Jinchuan copper smelting plant

FRP Scrubber



Service Condition/
Specification

15% NaOH, 900mg/m³ H₂SO₄ fog, maximum temperature is 100°C and 60°C

Resin used

SWANCOR CHEMPULSE 901

Fabrication Method

Filament winding and hand lay-up

End User

Jinchuan copper smelting plant

Exhaust Pipe System for Electroplating Plant



Service Condition/
Specification

Exhaust pipe system for aerospace industry, length from 9.1m to 42.7m, diameter from 0.4m to 1.5m

Resin used

SWANCOR 905-2

Fabrication Method

Filament winding and hand lay-up

End User

B.F. Goodrich, San Diego, CA

Exhaust Gas Pipe for Aluminum Extraction



Service Condition/ Specification	Norsk Hydro facility in qatar for electrolytic aluminum has HF gas. Temperature is 220°C, length is 1700m and diameter is 0.39m for double pipe
Resin used	SWANCOR 977-S
Fabrication Method	Filament winding
End User	Norsk Hydro, Qatar

Exhaust Gas System with Pipeline and Scrubber



Service Condition/ Specification	Exhaust of 200°C with fluoride and HNO ₃ in pipeline and 70-80°C in Scrubber with NaOH
Resin used	SWANCOR 900
Fabrication Method	Filament winding and Hand lay-up
End User	JUI TA HUNG BUSINESS CO., LTD.

Stack for Exhaust Gas



Service Condition/ Specification	Service temperature is 80-100°C and design temperature is 150°C, diameter is 3.5m, height is 80m and thickness is 22mm
Resin used	Structural layer: SWANCOR CHEMPULSE 901 Corrosion barrier: SWANCOR CHEMPULSE 907
Fabrication Method	Filament winding
End User	Guanhua Gold metallurgical plant, Chizhou

Electrolyte Transport Pipeline



Service Condition/ Specification	FRP pipeline with diameter from 32mm to 350mm to deliver KOH electrolyte for cathode, temperature is 90-110°C
Resin used	SWANCOR 901
Fabrication Method	Filament winding and Hand lay-up
End User	OXYChem

Stack for Exhaust Gas



Service Condition/ Specification	Service temperature is below 90°C and design temperature is 105°C, diameter is 5m and height is 160m. Major corrosion media is SO ₂
Resin used	SWANCOR 905-2
Fabrication Method	Filament winding
End User	Zhongyuan Gold metallurgical plant, Henan Province

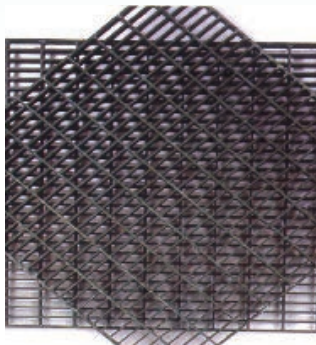
FRP Lining for Waste Water Pool



Service Condition/ Specification	Electroplate waste water, normal pressure and temperature
Resin used	SWANCOR CP95 as primer and SWANCOR 901 as structural layer
Fabrication Method	Hand lay-up
End User	Guohe Electroplate, Jinhua, Zhejiang Province

Flooring, Water Resistance Level and Grating

Grating



Service Condition/ Specification	Strong acid, salts
Resin used	SWANCOR 901 series (General) SWANCOR 905 series (Flame retarding) SWANCOR 907 series (Thermal resistance)
Fabrication Method	Pultrusion or RTM
End User	Jinchuan copper smelting plant, Congo

37% Hydrochloric Acid FRP Storage Tank



Service Condition/ Specification	37% hydrochloric acid
Resin used	SWANCOR 907
Fabrication Method	Filament winding
End User	Formosa Plastics Co Taiwan

35% Hydrochloric Acid Storage Tank



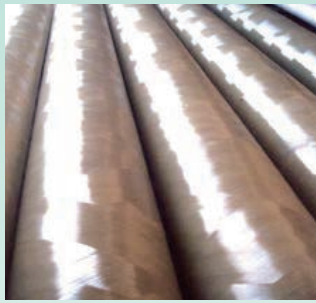
Service Condition/ Specification	Diameter 1.6m, height 4.7m, depth of the liquid acid 3.2m
Resin used	SWANCOR 901
Fabrication Method	Filament winding, corrosion barrier was constructed by resin-rich layer.
End User	Nat Danai Transport (Thailand)

Anti Corrosion (Chloride, Alkaline) FRP Tank



Service Condition/ Specification	Apply to dichloroethylene, sodium hydroxide liquid, 37% hydrochloric acid and other acid. Lining of spent acid groove, contains organic solvent, acids and organic solvent.
Resin used	SWANCOR 977 SWANCOR 901 SWANCOR 907
Fabrication Method	Filament winding
End User	Formosa Plastics

37% Hydrochloric Acid Pipes



Service Condition/ Specification	Diameter up to 16 inches, length 8m, thickness up to 12mm
Resin used	SWANCOR 907
Fabrication Method	Helical filament winding technique with 54.75°angle.
End User	1. Formosa Plastics (Taiwan) 2. Fiber Co., Ltd.

33% Hydrochloric Acid Tanks



Service Condition/ Specification	33% hydrochloric acid, 500ppm chlorobenzene Volume: 350m ³ Diameter: 6.8m Height: 8.7m
Resin used	SWANCOR 977-S
Fabrication Method	Filament winding
End User	SP Chemicals

36% Hydrochloric Acid Tank



Service Condition/ Specification	36% hydrochloric acid, Volume: 200m ³ and 300m ³
Resin used	SWANCOR 901
Fabrication Method	Helical filament winding
End User	China National Blue Star (Group) Co., Ltd.

37% Hydrochloric Acid Tank in Steel Plant



Service Condition/ Specification	37% hydrochloric acid, Volume: 100m ³ Diameter: 6m Height: 8m
Resin used	SWANCOR 901-TP
Fabrication Method	Helical filament winding
End User	Kobe Steel Group

31% Hydrochloric Acid Tank



Service Condition/ Specification	31% hydrochloric acid storage tank, Service Temperature: 60°C Diameter: 4m ; Volume: 100m ³
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Wynca Group

31% Hydrochloric Acid Tank



Service Condition/ Specification	Medium 31% hydrochloric acid under ambient temperature, volume: 1000m ³ , diameter: 11m, height:12m
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Spray Up
End User	Baotou Haipingmian Industry

37% Hydrochloric Acid Tank in Pulp Plant



Service Condition/ Specification	Storage tank for 37% hydrochloric acid
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Asia Pulp & Paper Co., Ltd. (APP)

Storage Tank for High Purity Hydrochloric Acid



Service Condition/ Specification	The concentration of hydrochloric acid is more than 31%. Service temperature is less than 60°C. Diameter: 15m Volume: 2300m ³
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Zhong Tai Hua Xue

36% Hydrochloric Acid Tank



Service Condition/ Specification	Diameter: 11.5m, Volume: 1000m ³
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	New Hope Group

FRP Tank for Refined Saline



Service Condition/ Specification	Medium: refined saline Volume: 1500m ³ Temperature: room temperature
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Kingboard Holding Limited

Storage Tank for Hydrochloric Acid



Service Condition/ Specification	Medium: 30% hydrochloric acid Room temperature, volume: 100m ³
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	China Minmetals Rare Earth Co., Ltd.

31% Hydrochloric Acid in Fertilizer Plant



Service Condition/ Specification	Concentration of hydrochloric acid is 31%. Volume: 5000m ³ Diameter: 20m, Height: 15.8m
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Sanning Corporation

Sulfuric Acid Storage Tank



Service Condition/ Specification	H ₂ SO ₄ -SO ₂ storage tank
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Asia Pulp Company

Hydrochloric Acid Storage Tank



Service Condition/ Specification	37% HCl storage tank
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Asia Pulp Company

ClO₂ Pipeline



Service Condition/ Specification	Pipeline for ClO ₂ solution, use the CPVC as FRP pipe lining, Service temperature is 90°C /110°C Diameter of pipes is 32mm~350 mm
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Hunan Juntai Pulp and Paper Co.,Ltd.

Power Generator Flue Gas Pipe



Service Condition/ Specification	Flue gas 145°C Diameter 1.2m , Length 320m
Resin used	SWANCOR 900
Fabrication Method	Filament winding
End User	Asia Pulp Company

Tanks for Ultrapure Water



Service Condition/ Specification	Ultrapure water for Pentium CPU, hard disk and semiconductor.
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	<ol style="list-style-type: none"> 1. Intel Technology (M) SDN. BHD. 2. Komag USD (M) SDN. BHD. 3. Akashic Kubota Technology SDN. BHD. 4. Seagate Prai Storage SDN. BHD. 5. Hitachi Semiconductor Co., Ltd. 6. Fuji Electric Co., Ltd.

Tanks for Waste Water



Service Condition/ Specification	Waste water containing hydrofluoric acid and sulfuric acid.
Resin used	SWANCOR CP95 SWANCOR 984M SWANCOR 901
Fabrication Method	Hand lay-up
End User	MOS Electronics Inc.

Waste Water Tank Lining



Service Condition/ Specification	Waste water treatment containing NaOH and HCl etc.
Resin used	SWANCOR 901
Fabrication Method	Hand lay-up
End User	Philip Semiconductor Co., Ltd.

Waste Water Storage Tank



Service Condition/ Specification	37 waste water storage tanks, five of them are used to store copper-containing waste water. Several of them are used to store ultrapure water. The volume of the tanks varies from 40m ³ to 85m ³ .
Resin used	<ol style="list-style-type: none"> 1. Lining: SWANCOR 901 2. Structural Layer: Polyester resin
Fabrication Method	Filament winding
End User	Intel Corporation, Dalian, China.

98% Sulfuric Acid Storage Tanks



Service Condition/ Specification	98% sulfuric acid at room temperature, 3.4m (diameter)X4m (height); capacity of 36m ³
Resin used	SWANCOR 901
Fabrication Method	Filament winding with PVDF inner liner
End User	Inter Corporation

Corrosion Resistant Flooring



Service Condition/ Specification	Flooring where oil and corrosive chemicals may drip on in the process of CD manufacturing.
Resin used	SWANCOR 901-P
Fabrication Method	Hand lay-up
End User	Daxon Technology Inc. (BENQ Guru Software Co., Ltd.)

Fume Exhaust System



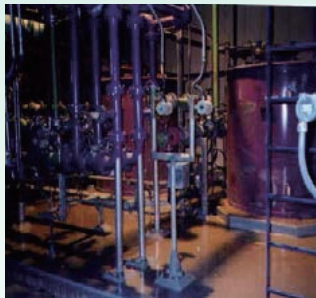
Service Condition/ Specification	Fume of hydrofluoric acid, sulfuric acid, hydrogen peroxide, trihydroxy dioxide phosphorus, phosphoric acid and organic solvents.
Resin used	SWANCOR 905
Fabrication Method	Filament winding
End User	<ol style="list-style-type: none"> 1. United Microelectronics Co. (UMC) 2. General Electric Co. 3. OPTO Technology Co. 4. Photo-Electronic Research Institute

Lining for Acid Tank



Service Condition/ Specification	25% Chromic acid, temperature up to 70°C
Resin used	SWANCOR 900
Fabrication Method	The structure part of lining laminates were built up with SWANCOR 900 and chopped strand mats, resin rich surface was built up with two layers C-veil
End User	Ghi Jung Chrome-plating Enterprise, Taipei

Concrete Flooring Lining for Power Plant



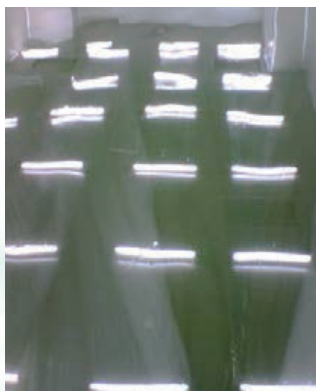
Service Condition/ Specification	Secondary contamination of 85%-90% sulfuric acid at 30-40°C
Resin used	1. Laminates: SWANCOR 901 2. Concrete primer: SWANCOR CP95
Fabrication Method	Hand lay-up
End User	EGAT Rtchaburi

Exhaust Gas Duct System for Electroplating in Aerospace



Service Condition/ Specification	Exhaust gas duct, diameter 0.4m-1.5m, length: 9.1m-42.7m
Resin used	SWANCOR 905-2
Fabrication Method	Hand lay-up and Filament winding
End User	B.F. Goodrich

Flooring in Electronics Plant



Service Condition/ Specification	Corrosion resistance flooring for acid treatment work
Resin used	SWANCOR CP95-P as Primer SWANCOR 901-P as Laminate SWANCOR 901-W as top coat
Fabrication Method	Hand lay-up
End User	Epson Suzhou Jinxiang Electronics Co., Ltd

Flue Gas Absorption Tower System



Service Condition/ Specification	Industrial flue gas treatment, Service temperature up to 60°C
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Taiwan Chunghwa Costal Industrial Zone

Flue Gas Pipe



Service Condition/ Specification	Flue gas contains phenol, MIBK, methanol, methane acid. Service temperature up to 75-90°C.
Resin used	SWANCOR 905
Fabrication Method	Filament winding
End User	NYP

Lining Under High Temperature



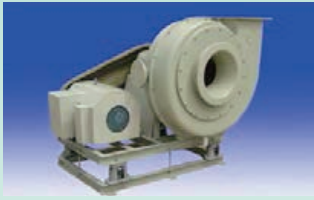
Service Condition/ Specification	It contains SO ₂ , SO ₃ , H ₂ O ₂ . Service temperature up to 160~200°C
Resin used	SWANCOR 900 SWANCOR 917
Fabrication Method	Hand lay-up
End User	Panasonic

Flue Gas Scrubber



Service Condition/ Specification	Ducting : Fluoride, HNO ₃ , temperature up to 200°C Scrubber : NaOH, temperature up to 70~80°C.
Resin used	SWANCOR 900
Fabrication Method	Hand lay-up
End User	JUI TA HUNG BUSINESS CO., LTD

FRP Fan



Service Condition/
Specification

Factory exhaust gas treatment

Resin used

SWANCOR 901

Fabrication Method

Hand lay-up and Filament winding

End User

China 's largest chemical fiber exhaust treatment projects

Largest FRP Tanks of Phosphoric Acid in the World



Service Condition/ Specification	2 FRP tanks of H_3PO_4 with 5000m ³ Diameter 20m and height 15.8m
Resin used	SWANCOR CHEMPULSE 901
Fabrication Method	Filament winding
End User	Pt Sentana Adidaya Pratama

Exhaust Gas Pipes



Service Condition/ Specification	Exhaust gas with HNO_3 , H_2SO_4 etc. Service temperature 60-80°C, diameter of pipe 1.6m and height 60m.
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Taiwan Fertilizer Co., Ltd

FRP Scrubbers



Service Condition/ Specification	Vapor temperature 75°C, diameter of pipe 5.2m, height 24m.
Resin used	SWANCOR 901
Fabrication Method	Hand-lay up for corrosion barriers, Filament for structural layers.
End User	Petro Kimia Gresik East Java, Indonesia

Desalination Pipelines and Tanks



Service Condition/ Specification	Tank volume: 70-80m ³ Pipe diameter: 0.25-1.6m
Resin used	SWANCOR 901-3
Fabrication Method	Filament winding
End User	Jizhou Zhongyi FRP

Desalination Pipelines



Service Condition/ Specification	Diameter: 0.6-2m, length: 10km
Resin used	SWANCOR 963 (Structural layer) SWANCOR 901 (Corrosion Barrier)
Fabrication Method	Filament winding
End User	Jizhou Zhongyi FRP

Desalination Pipelines



Service Condition/ Specification	Water supply for TOBRUK with diameter: 0.25-1.6m, pressure: 7bar-10bar, service temperature: 60°C, length of pipes: 5000m with 1000 flanges.
Resin used	SWANCOR 901

Cooling System of Desalination



Service Condition/ Specification	Cooling pipes in Ras Laffan Industrial City, Qatar. 177 pipes with diameter: 0.7-4m, length: 80km
Resin used	SWANCOR 901
Fabrication Method	Filament for pipes, up for structural layers, SWANCOR 901 for corrosion barrier.
End User	Qatar Petroleum (Qatar)

SWANCOR 901, SWANCOR 907, SWANCOR 963, SWANCOR 961, all passed SGS test and fulfill requirements of U.S. Food Drug and Cosmetic Act (21CFR177.2420).

The following procedure can help to achieve FDA compliance:

1. Use a formulation that low styrene residual is produced, for example, CoOct/MEKP or CoOct/CHP curing system
2. Thoroughly clean the final part to remove any dust or dirt prior to post-cure.
3. Post-cure with dry heat for 2 hours at 90°C/194°F or 4 hours at 80°C/176°F
4. Treat the part with steam or allow it to immerse in hot water bath for 8-16 hours at 70°C/158°F or higher temperature.
5. Wash the part with detergent and rinse it thoroughly placing in service.

Storage Tanks for Lactic Acid



Service Condition/ Specification	Storage tanks for edible lactic acid and 37% high-purity hydrochloric acid tank at ambient temperature
Resin used	SWANCOR 901 SWANCOR 963
Fabrication Method	SWANCOR 901 for inner lining and SWANCOR 963 for structural layers.
End User	HYFLUX, Singapore

Storage Tanks for Food



Service Condition/ Specification	6 FRP fermentation tanks with diameter 3m, height 7.2m and volume of 50MT. And 6 FRP tanks for amino acids with length 2m, width 2m and depth 3m.
Resin used	SWANCOR 901
Fabrication Method	Filament process
End User	KAOCHING CHIUAN Co., Ltd, Nantou, Taiwan

Lining for Dehydrate Fruit Immersion Tank



Service Condition/ Specification	Linings for concrete tank of fruit dehydrate production
Resin used	SWANCOR CP99 as Primer ; SWANCOR Chempulse 901 for Lining
Fabrication Method	Hand lay-up
End User	CHINWONG FOOD Co., Ltd, Thailand

Water Treatment Equipment



Service Condition/ Specification	Water treatment equipment
Resin used	SWANCOR 901-200TP
Fabrication Method	Horizontal filament winding
End User	Japanese Chemical Plant

Storage Tanks for Hydrochloric Acid



Service Condition/ Specification	Storage tank
Resin used	SWANCOR 901
Fabrication Method	Filament winding
End User	Hangzhou Zhonghuan Chemical Plant

Petroleum Underground Storage Tank (F/F)



Service Condition/ Specification	Underground double layer petroleum storage tank (F/F) Capacity : 30-50 m ³
Resin used	SWANCOR 9601
Fabrication Method	Filament winding and spray up
End User	Sinopec Gasoline Station

Petroleum Underground Storage Tank(S/F)



Service Condition/ Specification	Underground double layer petroleum storage tank (S/F) Capacity : 30-50 m ³
Resin used	SWANCOR 9601
Fabrication Method	Filament winding and spray up
End User	Sinopec, Gasoline Station

SLIPSTREAM– Super 5-stars Luxury Yacht



Service Condition/
Specification

Length 43.4m, width 8.54m, tonnage 195t, filling capacity 40,606l, 2 engines with 1350hp, facility: 12 guests, 9 attendants. Construction period lasts 3 years with cost around 10 million.

Resin used

SWANCOR 901-TP

Fabrication Method

Infusion

Luxury Yacht



Specification

M/Y Calixas , 105ft

Resin used

SWANCOR 901-VP

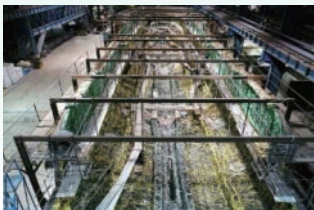
Fabrication Method

Infusion

End User

Horizon Yacht , Taiwan

Luxury Yacht



Specification

140ft

Resin used

SWANCOR 901-V

Fabrication Method

World record to produce the whole yacht body by one time 3D infusion

End User

Horizon Yacht , Taiwan (2018)

The World's First Solar Assisted Catamaran Yacht



Specification

HELIOTROPE 65 (18.3m length)

Resin used

SWANCOR 901-200

Fabrication Method

Infusion

End User

Bakri Cono Shipyard, Thailand

Hua Ying 36feet-Catamaran Yacht



Specification	Catamaran yacht with 36feet
Resin used	SWANCOR 901-VP
Fabrication Method	Infusion
End User	Western Yacht Club

Kayak



Specification	Hesper lite Length: 14 Ft/ 4.27m , Weight: 40 Lb/ 18Kg
Resin used	SWANCOR 901-3
Fabrication Method	Infusion
End User	Mid Canada Fiberglass, Ontario, Canada

Carbon Fiber Racing Kayak



Specification	Length: 4.88m , Weight: 14.6Kg
Resin used	SWANCOR 2711-1A/BS
Fabrication Method	Infusion
End User	Stealth Performance Products

Waste Water Tank Lining



Service Condition/ Specification	Waste water contains petroleum chemicals. 6 sets of lining tank, length up to 47m, width up to 17m, height up to 12.5m, total lining area up to 12,000m ² .
Resin used	SWANCOR 901 and SWANCOR CP95 as concrete primer.
Fabrication Method	Hand lay-up
End User	Chinese Petroleum Corporation, in Kaohsiung Taiwan

Waste Water Tank Lining



Service Condition/ Specification	Waste water at ambient temperature
Resin used	SWANCOR 901 SWANCOR CP95
Fabrication Method	Hand lay-up
End User	ETAG Southern Bangkok

Waste Water Tank Lining



Service Condition/ Specification	Waster water contains a lot of corrosive chemicals.
Resin used	1. Primer SWANCOR CP95 2. Laminates SWANCOR 901-P 3. Top coat SWANCOR 901+White colorant
Fabrication Method	Hand lay-up
End User	Changchun Petrochemical Industry, Mell Lee Plant

Waste Water Tank Lining



Service Condition/ Specification	Waste water tanks for neutralization reaction
Resin used	1. Primer SWANCOR CP95 2. Laminates SWANCOR 901-P 3. Top Coat SWANCOR 901-PW
Fabrication Method	Hand lay-up
End User	AUO

Waste Water Tank Lining for Fiber Plant



Service Condition/ Specification	Polyester textile waste water treatment 11 sets of lining tanks, lining area up to 24000m ²
Resin used	1. Primer SWANCOR CP95 2. Laminate SWANCOR 901
Fabrication Method	Hand lay-up
End User	Hualon Corporation(M) Sdn. Bhd. In Nilai, Malaysia

Waste Water Pipe for Organic Solvent



Service Condition/ Specification	Diameter: 1050mm , Length: 1200m
Resin used	SWANCOR 977
Fabrication Method	Filament winding for structural part
End User	Sinopec Kaohsiung Plant

Waste Acid Treatment Pool Lining in Titanium Dioxide Plant



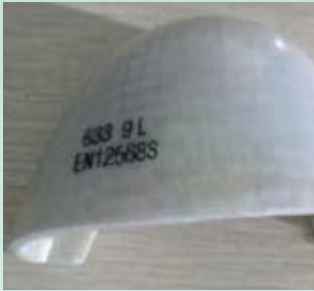
Service Condition/ Specification	Waste acid contains 10%-20% sulfuric acid Service temperature is 50-60°C.
Resin used	1. Primer SWANCOR CP95 2. Laminate SWANCOR 901 3. Top Coat SWANCOR 901-FLS
Fabrication Method	Spray-up for top coat, hand lay-up for primer and laminate.
End User	Panzhuhua Steel Corporation

Waste Water Pool Lining in Chemical Fiber Plant



Service Condition/ Specification	Polyester textile waste water
Resin used	1. Primer SWANCOR CP95 2. Laminate SWANCOR 901
Fabrication Method	Hand lay-up
End User	Nila Hualon Pvt. Ltd.

Safety Shoe Toe Cap



Application	Safety shoe toe
Resin used	SWANCOR 975 SWANCOR 978 SWANCOR 7413 SWANCOR 7416
Fabrication Method	SMC

Safety Shoe Toe Cap



Application	Safety armor
Resin used	SWANCOR 978 SWANCOR 7416
Fabrication Method	SMC

Bicycle



Application	Bicycle
Resin used	SWANCOR 975
Fabrication Method	SMC

LED Heat Radiator



Application	LED heat radiator
Resin used	SWANCOR 978
Fabrication Method	BMC
End User	OPPLE

Head Lamp Reflector



Service Condition / Specification	Car head lamp reflector
Resin used	SWANCOR 7420
Fabrication Method	BMC
Fabricator	Danyang Feile Vehicle Parts Factory

Door / Window Frame



Application	Door frame / Window frame
Resin used	SWANCOR 7410
Fabrication Method	Pultrusion
Fabricator	Shandong Saidide New Building Materials Co., Ltd

Electric Insulation Bar



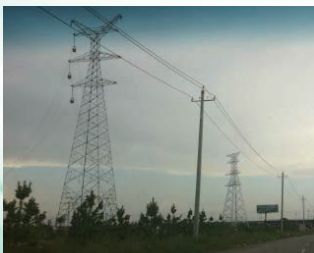
Application	Used for high-voltage electric wires to be connected to the tower for hanging connection Diameter 14mm/22mm/24mm/28mm, etc
Resin used	SWANCOR 2208-A/B
Fabrication Method	Pultrusion
Fabricator	Tongxiang Hengli Power Equipment Factory

Reinforce Carbon Plate for Building



Application	Reinforcement of building structure and bridge Thickness 1.4mm-3mm , Width : 5cm-10cm
Resin used	SWANCOR 2208-A/B
Fabrication Method	Pultrusion
Fabricator	Nanjing Haituo Composites

Aluminum Conductor Composite Core (ACCC)



Application	Composite supporting core for aluminum power cable Glass / carbon fiber round bar
Resin used	SWANCOR 2210-A/B
Fabrication Method	Pultrusion
Fabricator	Inner Mongolia Power Grid

Pipe Rehabilitation



Service Condition/ Specification	Waste water effluent at RT
Resin used	SWANCOR 901-2T
Fabrication Method	Inversion liner technology and cured-in-place pipe rehabilitation (a trenchless rehabilitation method) were used. <ol style="list-style-type: none"> 1. Non-woven fabric pipes were fully rinsed with resin before proceeding. 2. Insert pipes into the old concrete pipes with Inversion Liner technology. 3. Pump hot water into the fabric pipes, and let the resin be cured at 80°C.
End User	Seashore industrial area (Taiwan)

Preventive Repair for Underground Water Pipeline



Service Condition/ Specification	Water pipeline
Resin used	SWANCOR 961-T3
Fabrication Method	Inversion liner technology and cured-in-place pipe rehabilitation (a trenchless rehabilitation method) were used. Pipe diameter is 450-1000mm. <ol style="list-style-type: none"> 1. Non-woven fabric pipes were fully rinsed with resin before proceeding. 2. Insert pipes into the old pipes with Inversion Liner technology. 3. Pump hot water into the fabric pipes, and let the resin be cured at 85°C.
End User	Shanghai Water

Pipe Rehabilitation



Service Condition/ Specification	Waste water effluent at RT
Resin used	SWANCOR 901-T3
Fabrication Method	Inversion liner technology and cured-in-place pipe rehabilitation (a trenchless rehabilitation method) were used. Pipe diameter is 450-1000mm. <ol style="list-style-type: none"> 1. Non-woven fabric pipes were fully rinsed with resin before proceeding. 2. Insert pipes into the old pipes with Inversion Liner technology. 3. Pump hot water into the fabric pipes, and let the resin be cured at 100°C
End User	Sinopec Jiujiang branch



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