

Tialoc Composite – Large Tanks & Vessels



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Focusing on Recent Examples

Background:

The tialoc Group was founded in 2000 in Germany and 2001 in Singapore, with the focus on supplying high quality engineered environmental solutions, offered at competitive prices, to meet the needs of the Europe, China and SE Asia markets.

From conception, the team achieved rapid success and grew from a simple idea, to the multi-million dollar company it is today. Tialoc's presence now covers five continents with over 470 staff in four divisions. tialoc now claims expertise in process and design engineering, EPC "lump-sum-turn-key" supply and in-house manufacturing.

Originally tialoc specialized in the chemical and semiconductor industries, but now also has a strong presence in the automotive, pharmaceutical, industrial, petrochemical, oil & gas, and mineral processing sectors.

Our manufacturing division, named – tialoc Composite – has its major locations in Shanghai (China) and Penang (Malaysia), as well as smaller facilities in Vietnam, Thailand, Germany and Kuantan (Malaysia).

The Composite division specializes in the materials selection, engineering calculation, design and ultimately manufacture of world class fabricated plastic, FRP and dual laminate products, most commonly pipes, storage tanks and reaction vessels at elevated pressures.

All our products are manufactured to strict international engineering codes, with 25 year design life, so you can be assured of the quality and have confidence your products will still be in use, many years after installation. In recent times we have earned the enviable reputation as being the premier supplier of large tanks in hazardous chemical applications in the Asia region.



Two examples of our recently produced large tanks for use in hazardous chemical storage applications

Westlake - Geismar - 2012 - Louisiana, USA



Client	Westlake
Project	Geismar CA Plant
Location	Louisiana, USA
Year	2011 – 2012
Description	Hypochlorite Tank

In 2011, the Chengda design company approached the tialoc Group to engineer and design several tanks to store the process chemicals for Westlake’s upcoming chlor-alkali plant to be built in Louisiana USA. Two tanks were required to hold up to 230m³ of sodium hypochlorite solution and design life was to be 25 years. The plastic liner

material selected was UPVC, and the body made from high quality FRP. In 2012, these tanks were completed and shipped to the US.

Diameter	m	6.5
Height	m	8.0
Volume	m³	230
Media	Name	NaOCl
Liner	Name/mm	UPVC/4
Structure	Name/mm	FRP/21

Quantity	Supplied	2
Des Temp	Degrees C	80
Des Press	kPa (G)	5

Lynas - LAMP - 2012 - Kuantan, Malaysia



Client	Lynas Rare Earths
Project	LAMP
Location	Kuantan, Malaysia
Year	2011 – 2012
Description	Na ₂ CO ₃ Solution

In 2011, Toyothai, acting on behalf of Lynas Corporation, contracted tialoc Composite to fabricate 52 FRP tanks to be installed in the solvent extraction circuit of their Lynas Advanced Materials Plant (LAMP) in Kuantan, Malaysia. 12 were rectangular and the rest cylindrical.

In 2012, all tanks were delivered including the two largest (shown above).

Diameter	m	6.5
Height	m	6.0
Volume	m³	200
Media	Name	Na ₂ CO ₃
Liner	Name/mm	FRP/3
Structure	Name/mm	FRP/15

Quantity	Supplied	2
Des Temp	Degrees C	60
Des Press	kPa (G)	atm

LDK - Polysilicon - 2010 - Xinyu, Jiangxi, China



Client	LDK
Project	15ktpa Polysilicon
Location	Xinyu, China
Years	2008 – 2010
Description	Waste Water

In 2008, LDK contracted tialoc to supply several engineered systems for their 15,000 tpa polysilicon production facility in Xinyu, Jiangxi, China. Included in our scope was a waste water treatment plant with four large (~11m D x 10m H) storage tanks. The materials of construction were FRP lined steel, and they required walkways and other

structures as per the photo. The design and manufacture of large tanks with difficult engineering requirements is one of tialoc's specialties.

Diameter	m	10·8
Height	m	10·0
Volume	m³	920
Media	Name	Waste
Liner	Name/mm	FRP/3
Structure	Name/mm	CS/8

Quantity	Supplied	4
Des Temp	Degrees C	65
Des Press	kPa (G)	25

Case Study

BP - Petrochemical Park - 2013 - Zhuhai, China



Client	BPZ
Project	PTA #3
Location	Zhuhai, China
Year	2013
Description	Scrubber

In 2012, BPZ (BP Zhuhai), a subsidiary of BP (British Petroleum), engaged tialoc to design, fabricate and supply a large scrubber column for their PTA petrochemical project in Zhuhai, Southern China (next to Macau).

In mid 2013 we completed the item.

Height	m	23.3
Diameter	m	6.0
Volume	m³	554
Media	Name	NaOH
Liner	Name/mm	FRP/4
Structure	Name/mm	FRP/36

Quantity	Supplied	1
Des Temp	Degrees C	81
Des Press	kPa (G)	15

Case Study

Dow Corning - FSU Phase 2 - 2009 - ZJG, China



Client	Dow Corning
Project	FSU Phase 2
Location	ZJG, China
Year	2009
Description	Separator

In 2009, Dow Corning approached tialoc for the urgent supply of six large oil-water separators. They were designed and constructed using 16mm thick FRP plates, supported by steel C-channel beams. We promptly designed, and

supplied the units within 3 months of receipt of order.

Length	m	6.0
Height	m	4.5
Volume	m ³	60
Media	Name	Oil/water
Liner	Name/mm	FRP/16
Structure	Name/mm	CS/80x80

Quantity	Supplied	6
Des Temp	Degrees C	45

Case Study

Tialoc's large tanks and vessels are:

- Factory manufactured typically from 0.5m diameter up to 6.5m, with larger sizes also possible upon request.
- Normal temperatures up to 120°C, special design products up to 180°C.
- ialoc's in-house engineering capabilities include design calculations up to 15 bar.
- Design standards according to DIN EN13121, BS4994, ASME RTP-1, AD-Merkblatt-N1, DIBt-40-B1(2).

Other References:

Tialoc's dual laminate systems have been supplied to a variety of corrosive industrial environments such as pharmaceutical, chemical, microelectronic and mineral processing plants. Applications include scrubbers, pipes, tank farms, chemical utilities, reaction vessels and separators.



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