

# 台湾玻璃工業公司

TAIWAN GLASS IND. CORP.

2020 ANNUAL BRIEF

## 目錄 Table of Contents

01	生產基地 Production Facilities
05	集團一覽 Company List
06	2019年度營運報告 2019 Operation Report
08	合併財務一覽 Consolidated Financial Scan
09	合併資產負債表 Consolidated Balance Sheet
10	歷年財務簡表 Financial Charts by Year
11	2020年展望 2020 Operation Perspectives
13	台灣玻璃工業有限公司第 19 屆董事 / 第 2 屆審計委員 (2018-2021) TGI 19th Directors / 2nd Audit Committee
15	台灣經營團隊 Taiwan Management Team
16	大陸經營團隊 China Management Team
18	集團產能 Production Capacity
19	產品介紹 Products
31	節能實例 Energy Saving Project Case Study
32	股務紀錄 Stock
33	集團沿革 Taiwan Glass Group History

生產基地 Production Facilities

台灣玻璃工業股份有限公司 TGI 1964年成立 Establishment  
TAIWAN GLASS IND. CORP.

平板玻璃 Flat Glass

台灣台中廠 TF  
TAIWAN TAICHUNG FACTORY  
1983年投產  
浮板玻璃 / 加工玻璃 / Float Glass / Processed Glass  
微薄玻璃 / Ultra-Thin Glass

台灣鹿港平板廠 TF-4  
TAIWAN LUKANG FLAT GLASS FACTORY  
2006年投產  
浮板玻璃 / Float Glass

台灣彰濱廠 TC  
TAIWAN CHANGPIN FACTORY  
2011年投產  
低輻射玻璃 / 加工玻璃  
Low-E Glass / Processed Glass

台玻青島玻璃有限公司 QFG  
TG QINGDAO GLASS CO., LTD.  
1993年成立  
浮板玻璃 / 加工玻璃  
Float Glass / Processed Glass

台玻長江玻璃有限公司 CFG  
TG CHANGJIANG GLASS CO., LTD.  
1994年成立  
浮板玻璃 / 加工玻璃 / 低輻射玻璃  
Float Glass / Processed Glass / Low-E Glass

台玻咸陽玻璃有限公司 TXY  
TG XIANYANG GLASS CO., LTD.  
2010年成立  
浮板玻璃 / 加工玻璃 / 低輻射玻璃  
Float Glass / Processed Glass / Low-E Glass

生產基地 Production Facilities

台玻成都玻璃有限公司 CDG  
TG CHENGDU GLASS CO., LTD.  
2002年成立  
浮板玻璃 / 加工玻璃 / 低輻射玻璃  
Float Glass / Processed Glass / Low-E Glass

台玻華南玻璃有限公司 HNG  
TG HUANAN GLASS CO., LTD.  
2003年成立  
浮板玻璃 / 加工玻璃 / 低輻射玻璃  
Float Glass / Processed Glass / Low-E Glass

台玻東海玻璃有限公司 DHG  
TG DONGHAI GLASS CO., LTD.  
2003年成立  
浮板玻璃 / 平板玻璃  
Float Glass / Flat Glass

台玻天津玻璃有限公司 TJG  
TG TIANJIN GLASS CO., LTD.  
2004年成立  
浮板玻璃 / 加工玻璃 / 低輻射玻璃  
Float Glass / Processed Glass / Low-E Glass

台玻安徽玻璃有限公司 TAH  
TG ANHUI GLASS CO., LTD.  
2010年成立  
浮板玻璃 / Float Glass

台玻太倉工程玻璃有限公司 TTAR  
TG TAICANG ARCHITECTURAL GLASS CO., LTD.  
2010年成立  
低輻射玻璃 / Low-E Glass

台玻武漢工程玻璃有限公司 TWAR  
TG WUHAN ARCHITECTURAL GLASS CO., LTD.  
2010年成立  
低輻射玻璃 / Low-E Glass



TF, 250,068 M<sup>2</sup> (375 畝)



TF-4, 260,343 M<sup>2</sup> (395 畝)



TC, 272,480 M<sup>2</sup> (408 畝)



QFG, 429,126 M<sup>2</sup> (643 畝)



CFG, 404,770 M<sup>2</sup> (607 畝)



TXY, 452,703 M<sup>2</sup> (679 畝)



CDG, 452,027 M<sup>2</sup> (678 畝)



HNG, 364,907 M<sup>2</sup> (547 畝)



DHG, 398,096 M<sup>2</sup> (597 畝)



TJG, 300,448 M<sup>2</sup> (450 畝)



TAH, 572,643 M<sup>2</sup> (858 畝)



TTAR, 199,525 M<sup>2</sup> (300 畝)



TWAR, 222,000 M<sup>2</sup> (333 畝)

生產基地 Production Facilities

玻璃纖維增強絲 / 玻璃纖維布  
Fiberglass Reinforced / Fiberglass Fabric

台灣桃園廠 TT  
TAIWAN TAOYUAN FACTORY  
1990年投產  
玻璃纖維增強絲 / 玻璃纖維布  
Fiberglass Reinforced / Fiberglass Fabric

台灣鹿港廠 TL  
TAIWAN LUKANG FACTORY  
1998年投產  
玻璃纖維布 / Fiberglass Fabric

台嘉蚌埠玻璃纖維有限公司 TBF  
TAICHIA BENGBU GLASS FIBER CO., LTD.  
2012年成立  
玻璃纖維布 / Fiberglass Fabric

台嘉玻璃纖維有限公司 TGF  
TAICHIA GLASS FIBER CO., LTD.  
2001年成立  
玻璃纖維布 / Fiberglass Fabric

台嘉成都玻纖有限公司 TCD  
TAICHIA CHENGDU GLASS FIBER CO., LTD.  
2011年成立  
玻璃纖維布 / Fiberglass Fabric

生產基地 Production Facilities

容食廚玻璃  
Glass Container / Glass Tableware &  
Glass Kitchenware

台灣新竹廠 TS  
TAIWAN HSINCHU FACTORY  
1967年投產  
容器玻璃 / 食器玻璃 / 廚器玻璃  
Glass Container / Glass Tableware / Glass Kitchenware

汽車玻璃  
Automotive Glass

台灣汽車玻璃有限公司 TAGC  
TAIWAN AUTOGLASS IND. CORP.  
1988年成立  
汽車玻璃 / Automotive Glass

台玻悅達汽車玻璃有限公司 TYAU  
TG YUEDA AUTOGLASS CO., LTD.  
2010年成立  
汽車玻璃 / Automotive Glass

鹽化工  
Salt Chemical

實聯化工江蘇有限公司 SCJ  
SHIH LIEN CHEMICAL INDUSTRIAL  
JIANGSU CO., LTD.  
2009年成立  
純鹼 / 氯化銨 / 生技鹽  
Soda Ash / Ammonium Chloride / Biotech Salt



TT, 181,181 M<sup>2</sup> (271 畝)



TL, 260,343 M<sup>2</sup> (395 畝)



TGF, 323,539 M<sup>2</sup> (485 畝)



TCD, 362,668 M<sup>2</sup> (544 畝)



TBF, 370,668m<sup>2</sup>(557畝)



TS, 129,090 M<sup>2</sup> (173 畝)



TYAU, 132,755 M<sup>2</sup> (199 畝)



SCJ, 2,000,010 M<sup>2</sup> (3,000 畝)



集團一覽 Company List

截至2020-04-15

項目 Item	創立 Est.	資本額 Capital		營業項目 Business Scope	主要股東 Major Shareholder	持股率 Holding %
		千元	US\$000			
台灣玻璃工業股份有限公司 Taiwan Glass Ind. Corp.	TGI 1964	29,080,608	—	玻璃製造 Glass Mfg.	THG	63
台灣玻璃美國銷售有限公司 Taiwan Glass USA Sales Corp.	TGUS 1973	—	461	玻璃銷售 Glass Sales	TGI	100
台灣汽車玻璃股份有限公司 Taiwan Autoglass Ind. Corp.	TAGC 1988	300,000	—	汽車玻璃製造 Automotive Glass Mfg.	TGI	87
台灣玻璃中國控股有限公司 Taiwan Glass China Holding Ltd.	TGCH 1993	—	1,360,758	大陸投資控股公司 China Investment	TGI	94
台玻青島玻璃有限公司 TG Qingdao Glass Co., Ltd.	QFG 1993	—	87,800	平板玻璃製造 Flat Glass Mfg.	TGCH	100
青島壓花玻璃有限公司 Qingdao Rolled Glass Co., Ltd.	QRG 1993	—	29,293	壓花玻璃製造 Rolled Glass Mfg.	TG-G	100
台玻長江玻璃有限公司 TG Changjiang Glass Co., Ltd.	CFG 1994	—	94,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台嘉玻璃纖維有限公司 Taichia Glass Fiber Co., Ltd.	TGF 2001	—	110,000	玻璃纖維布製造 Fiberglass Fabric Mfg.	TGCH	100
台玻成都玻璃有限公司 TG Chengdu Glass Co., Ltd.	CDG 2002	—	70,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻華南玻璃有限公司 TG Huanan Glass Co., Ltd.	HNG 2003	—	106,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻東海玻璃有限公司 TG Donghai Glass Co., Ltd.	DHG 2003	—	80,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻天津玻璃有限公司 TG Tianjin Glass Co., Ltd.	TJG 2004	—	96,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻咸陽玻璃有限公司 TG Xianyang Glass Co., Ltd.	TXY 2010	—	100,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻太倉工程玻璃有限公司 TG Taicang Architectural Glass Co., Ltd.	TTAR 2010	—	35,000	Low-E 玻璃製造 Low-E Glass Mfg.	TGCH	100
台玻悅達汽車玻璃有限公司 TG Yueda Autoglass Co., Ltd.	TYAU 2010	—	68,000	汽車玻璃製造 Automotive Glass Mfg.	TG-G	60
台玻安徽玻璃有限公司 TG Anhui Glass Co., Ltd.	TAH 2010	—	85,000	平板玻璃製造 Flat Glass Mfg.	TGCH	100
台玻武漢工程玻璃有限公司 TG Wuhan Architectural Glass Co., Ltd.	TWAR 2010	—	35,000	Low-E 玻璃製造 Low-E Glass Mfg.	TGCH	100
台嘉成都玻纖有限公司 Taichia Chengdu Glass Fiber Co., Ltd.	TCD 2011	—	98,000	玻璃纖維布製造 Fiberglass Fabric Mfg.	TGCH	100
台嘉蚌埠玻璃纖維有限公司 Taichia Bengbu Glass Fiber Co., Ltd.	TBF 2012	—	60,000	玻璃纖維布製造 Fiberglass Fabric Mfg.	TGCH	100
台玻文教基金會 TG Cultural & Educational Foundation	TG-F 1989	170,000	—	文教事業 Cultural & Educational Fdn.	TGI	100
總資本額 Total		29,550,608	2,515,312			

2019 年度營運報告 2019 Operation Report

2019年度 營運合併報表	銷售量	3,461千公噸		
	營業收入	41,776百萬元	=US\$	1,351 mil
	營業損失	(1,169)百萬元	=US\$	(38) mil
	營業外收支	(131)百萬元	=US\$	(4) mil
	稅前淨損	(1,300)百萬元	=US\$	(42) mil
	稅後淨損	(1,607)百萬元	=US\$	(52) mil
	稅後淨損歸屬於母公司業主	(1,448)百萬元	=US\$	(47) mil
	母公司業主權益	40,164百萬元	=US\$	1,340 mil
	股票市值	33,152百萬元	=US\$	1,106 mil

每股純益 (0.50)元，股東權益每股13.81元=US\$0.46，因2019年度當期虧損，並考量次年度資本預算規劃及新冠肺炎疫情對營運之影響，2019年度擬不分配股東股息及紅利。

2019 年生產

平板玻璃	台灣	大陸	台中廠平板玻璃1座、鹿港廠平板玻璃1座、台中廠微薄玻璃1座，計3座生產線，年產 275千公噸 (-1.5%) 昆山、成都、天津、東莞、青島、東海、咸陽及安徽廠平板玻璃，計11座生產線，年產 2,570千公噸 (-11.9%)
玻布 / 玻纖	台灣	大陸	桃園廠玻纖2座及鹿港廠玻布2座，計4座生產線，年產 58千公噸 (-27.9%) 昆山廠玻布4座、成都廠玻布1座、蚌埠廠玻布1座，計6座生產線，年產 59千公噸 (+9.1%)
容食廚玻璃	台灣		新竹廠容食廚器玻璃7座生產線，年產 148千公噸 (+4.3%)
汽車玻璃	台灣	大陸	台中廠汽車玻璃生產線，年產 6千公噸 (-25.6%) 鹽城廠汽車玻璃生產線，年產 9千公噸 (-18.0%)
合計			3,125千公噸 (-10.5%)

2019 年銷售

平板玻璃	台灣	大陸 計	銷售量 259千公噸 (-5.1%)，銷售額 3,884百萬元 (-3.8%) 銷售量 2,881千公噸 (-7.3%)，銷售額 26,128百萬元 (-10.1%) 計3,140千公噸，新台幣30,012百萬元 = US\$ 971mil (-9.4%)，佔集團營業額 67.7%
玻布 / 玻纖	台灣	大陸 計	銷售量 59千公噸 (-14.3%)，銷售額 4,214百萬元 (-13.8%) 銷售量 102千公噸 (+46.6%)，銷售額 5,840百萬元 (-7.1%) 計 161千公噸，新台幣 10,054百萬元 = US\$325mil (-10.0%)，佔集團營業額 22.7%
容食廚玻璃	台灣		銷售量 145千公噸(+0.0%)，銷售額 3,453百萬元 = US\$112mil (-0.4%)，佔集團營業額 7.8%
汽車玻璃	台灣	大陸 計	銷售量 6千公噸(-27.8%)，銷售額488百萬元 (-14.1%) 銷售量 9千公噸(-18.4%)，銷售額332百萬元 (-31.7%) 計 15千公噸，新台幣 820百萬元 = US\$ 26mil (-22.2%)，佔集團營業額 1.8%

合計 銷售量3,461千公噸，銷售額新台幣 44,339百萬元 = US\$ 1,434mil (-9.2%)，減合併沖銷後，銷售額新台幣41,776百萬元 = US\$ 1,351mil (-9.4%)，內銷佔83 %，外銷佔 17%

2019 Operation Report

2019 Consolidated Performance	Sales Volume	3,460,533 MT
	Operating Revenue	U\$ 1,351mil
	Operating Loss	U\$ (38)mil
	Non-operating Income and Expenses	U\$ (4)mil
	Loss Before Tax	U\$ (42)mil
	Net Loss After Tax	U\$ (52)mil
	Loss After Tax Attributable to Stockholders of the Parent	U\$ (47)mil
	Total Equity Attributable to Stockholders of the Parent	U\$ 1,340mil
	Stock Market Value	U\$ 1,106mil
Earnings per share：U\$(0.02), Equity per share: U\$0.46		
Considering the loss in 2019 and the impact of Coronavirus pandemic on the next year's capital budgeting and operation, TGI has resolved not to distribute dividends and bonus to shareholders		

2019 Production

Flat Glass	Taiwan	3 float plants, annual production 274,941MT (- 1.5%)
	China	11 float plants, annual production 2,569,665MT (- 11.9%)
Fiberglass / Fiberglass Fabric	Taiwan	2 glass fiber plants, & 2 glass fabric plants, annual production 58,506MT (-27.9%)
	China	6 glass fabric plants, annual production 58,756MT (+9.1%)
Glass Container & Glassware	Taiwan	7 plants, annual production 147,605MT (+4.3%)
Automotive Glass	Taiwan	TAGC plant, annual production 5,769MT (-25.6%)
	China	TYAU plant, annual production 9,369MT (-18.0%)
Group Total		3,124,611MT (-10.5%)

2019 Sales

Flat Glass	Taiwan	Volume 258,836MT (-5.1%), sales revenue U\$126mil (-3.8%)
	China	Volume 2,880,650MT (-7.3%), sales revenue U\$845mil (-10.1%)
	Total	3,139,486MT, U\$971 mil (-9.4%), 67.7% of group sales
Fiberglass / Fiberglass Fabric	Taiwan	Volume 59,288 MT (-14.3%), sales revenue U\$136mil (-13.8%)
	China	Volume 101,937 MT (+46.6%), sales revenue U\$189mil (-7.1%)
	Total	161,225MT, U\$325 mil (-10.0%), 22.7% of group sales
Glass Container & Glassware	Taiwan	Volume 144,787MT(+0.0%), sales revenue U\$112mil (-0.4%), 7.8% of group sales
Automotive Glass	Taiwan	Volume 5,793MT(-27.8%), sales revenue U\$15mil (-14.1%)
	China	Volume 9,242MT(-18.4%), sales revenue U\$11mil (-31.7%)
	Total	15,035MT, U\$26 mil (-22.2%), 1.8% of group sales
Group Total		3,460,533MT, revenue U\$1,434mil (-9.2%)： Net Sales revenue U\$1,351mil (-9.4%) domestic market 83% and export 17%

合併財務一覽 Consolidated Financial Scan

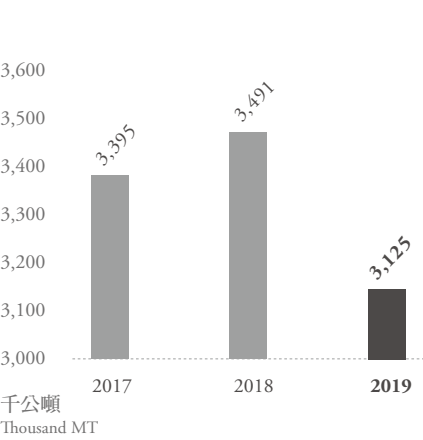
項目 Item	單位 Unit	2018	2019	+	—
銷售量 Sales Volume	公噸 MT	3,684,629	3,460,533		6.1
營業收入 Operating Revenue	千元 U\$000	46,091,494 1,528,790	41,775,507 1,351,433		9.4
營業(損失)利益 Operating (Loss) Income	千元 U\$000	2,323,574 77,070	(1,169,121) (37,821)		150.3
營業外收入及支出 Non-operating Income and Expenses	千元 U\$000	(768,909) (25,504)	(131,302) (4,248)	82.9	
稅前淨(損)利 (Loss) Income Before Tax	千元 U\$000	1,554,665 51,566	(1,300,423) (42,069)		183.6
稅後淨(損)利 Net (Loss) Income After Tax	千元 U\$000	1,031,980 34,229	(1,606,778) (51,979)		255.7
稅後淨(損)利歸屬於母公司業主 (Loss) Income After Tax Attributable to Stockholders of the Parent	千元 U\$000	1,066,286 35,367	(1,448,450) (46,857)		235.8
每股純益 Earnings Per Share	元 U\$	0.37 0.01	(0.50) (0.02)		235.1
純益率 Earning Ratio	%	2.31	3.47		250.2
每股股利 (現金+股票) Dividend Per Share (Cash+Stock)	元 U\$	0.3(0.3+0.0) 0.0100(0.0100+0)	0 0.0000		
資產總額 Total Assets	千元 U\$000	85,068,395 2,769,604	87,324,447 2,912,757	2.7	
實收資本 Capital	千元 U\$000	29,080,608 946,788	29,080,608 970,000		
母公司業主權益 Total Equity Attributable to Stockholders of the Parent	千元 U\$000	44,245,480 1,440,517	40,164,081 1,339,696		9.2
每股淨值 Equity Per Share	元 U\$	15.21 0.50	13.81 0.46		9.2
自有資本率 Shareholders' Equity to Total Assets Ratio	%	52.0	46.0		11.5
合併權益報酬率 Return on Total Equity	%	2.1	(3.5)		266.7
股票市值 Stock Market Value	千元 U\$000	37,513,984 1,221,357	33,151,893 1,105,800		11.6
新投資金額 New Capital Expenditure	千元 U\$000	6,337,796 210,216	3,755,492 121,490		40.7

合併資產負債表 Consolidated Balance Sheet

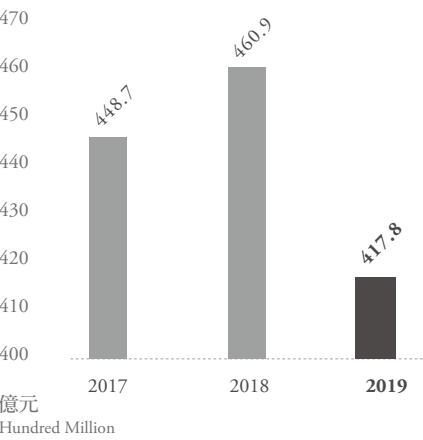
		2018			2019		
		千元	U\$000	%	千元	U\$000	%
資產 Assets	流動資產 Current Assets	26,225,853	853,845	30.8	31,320,135	1,044,701	35.9
	採用權益法之投資 Investments Accounted for Using the Equity Method	4,136,312	134,667	4.9	4,231,551	141,146	4.8
	不動產、廠房及設備 Property, Plant and Equipment	50,832,520	1,654,974	59.8	47,732,878	1,592,157	54.7
	其他非流動資產 Other Noncurrent Assets	3,873,710	126,118	4.5	4,039,883	134,753	4.6
	資產合計 Total Assets	85,068,395	2,769,604	100.0	87,324,447	2,912,757	100.0
負債 Liabilities	流動負債 Current Liabilities	23,251,960	757,023	27.3	29,945,131	998,837	34.3
	長期負債 Long-term Loan	11,547,246	375,948	13.6	11,418,334	380,865	13.0
	其他非流動負債 Other Noncurrent Liabilities	2,536,824	82,592	3.0	2,599,771	86,717	3.0
	負債合計 Total Liabilities	37,336,030	1,215,563	43.9	43,963,236	1,466,419	50.3
權益 Equity	母公司業主權益計 Total Equity Attributable to Stockholders of the Parent	44,245,480	1,440,517	52.0	40,164,081	1,339,696	46.0
	實收資本 Capital	29,080,608	946,788		29,080,608	970,000	
	非控制權益 Non-controlling Interests	3,486,885	113,524	4.1	3,197,130	106,642	3.7
	權益合計 Total Equity	47,732,365	1,554,041	56.1	43,361,211	1,446,338	49.7
負債及權益 Liabilities & Equity		85,068,395	2,769,604	100.0	87,324,447	2,912,757	100.0

歷年財務簡表 Financial Charts by Year

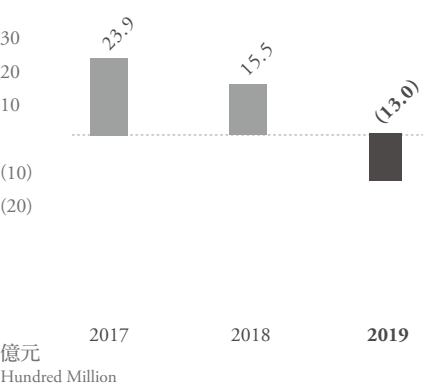
生產量 Capacity



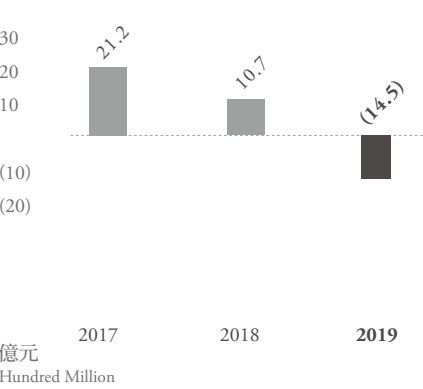
營業收入 Operating Revenue



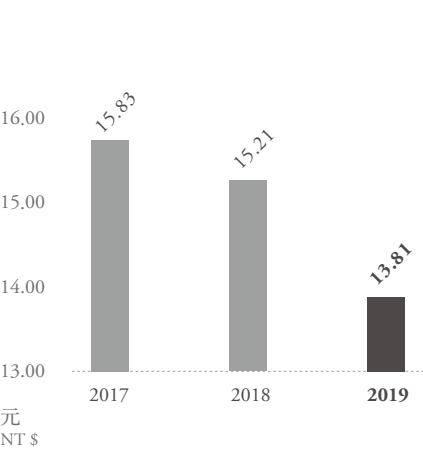
稅前淨(損)利  
(Loss)Income Before Tax



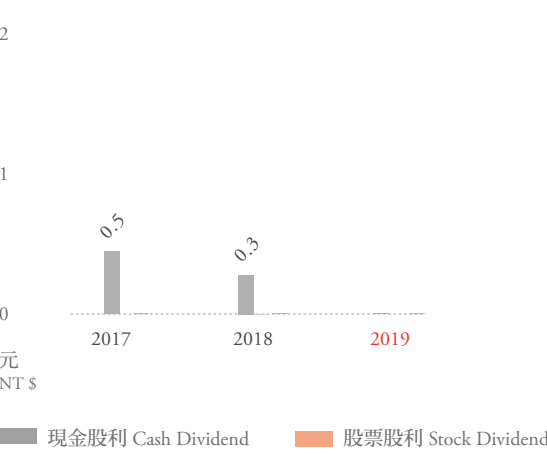
稅後淨(損)利歸屬於母公司業主 (Loss)Income After Tax  
Attributable to Stockholders of the Parent



每股淨值 Equity Per Share



每股股利 Dividend Per Share





## 董事長致詞

2020 年  
展望



各位董事、股東好

2019年全球政治與經濟情勢動盪劇烈、中美與日韓貿易紛爭，全球經濟成長顯著遲緩。2020年初新冠肺炎(COVID-19)疫情蔓延全球，從人民健康到經濟活動與國家安全各個層面，帶來嚴重衝擊，造成投資停滯、消費市場需求疲軟，全球經貿不確定性大增，也牽動產業供應鏈調整移轉。世界銀行指出，包含貿易、投資及消費等關鍵經濟指標都是處於金融海嘯以來的最低點，整體而論2020年經濟考驗嚴峻，須審慎以對。

綜觀台玻2019年表現，因下游市場需求萎縮供需失衡、導致價格下滑，未能達到預期獲利：

在平板玻璃方面，中國大陸玻璃企業在東南亞國家建廠，挾當地低廉的勞動及燃料成本，低價出口到台灣，造成市場價格下滑。台玻持續加強管理、品質及售後服務，並建立玻璃行業內的資源整合，維持市場秩序。

中國大陸平板玻璃市場，因中美貿易戰動能趨緩，經濟成長率下修，短期內供大於求的局面仍難以改變，台玻大陸各廠持續落實管理、工安與COVID-19疫情控管，並對產線優化升級，爭取維持獲利。

在纖維事業方面，台玻玻璃纖維產品的技術與品質，向來為公司的核心競爭力。對於FRP，今年與美國歐文斯科寧公司合作之新窯投產，取得最先進玻璃纖維的配方與生產技術，並致力於降低生產成本，供應客戶更高性能及更環保的產品。

2019年電子級玻璃布市場需求略升及安徽蚌埠玻布廠投產下，整體銷量較2018年增加16%。面對未來市場的轉變，研發成功並開始供應超薄布#1017布種也向更薄的規格挑戰。同時，面對蓬勃發展的5G運用，也成功開發低介電(Low DK)玻璃纖維布，且已取得國際終端大廠認證並持續採用，2020年目標市佔率全球20%。

在容食廚器方面，產能增加4.6%，並投入生產 $\alpha$ 33高品質耐熱奶瓶。食廚器產品持續增加銷售通路及多元化，並努力建立TG自有品牌，跳脫低利競爭。

台玻轉投資實聯化工江蘇公司44%，至2019年已連續3年獲利，持續進行製程優化及產能改善，落實安全衛生管理，保持穩定連續生產出貨，預計2020年仍有獲利的表現。

展望未來，由於新冠肺炎疫情及貿易戰延燒的影響，對全球經濟造成重大衰退。台玻因應未來變局，研發高性能FRP S2 glass及低介電Low DK玻璃纖維布等新產品，提高產品附加價值。對於平板玻璃，重新檢討產品結構，降低成本，以提升營運績效追求公司獲利成長為首要目標。

在公司治理方面，落實企業社會責任、培育優秀人才、安全健康職場及創新優化服務等，並調整部份資產，以提升整體獲利，期能持續為股東及員工創造價值，成為永續標竿企業。

林伯豐  
2020.06.05

## Chairman's Message

2020  
Operation Perspectives

Directors and stockholders, thank you and look forward to having your opinions on 2020 operation perspective.

In 2019, the global political and economic situation is turbulent; U.S.-China Trade War and Japan-South Korea trade dispute have slowed down economic growth significantly. In early 2020, Coronavirus (COVID-19) pandemic spread across the world, causing serious impacts on people's health, economic activities and national security. The pandemic also results in stagnation of investment, weak consumer market demand as well as increased uncertainty about global economy and trade, which leads to adjustment and transfer of supply chain in industries. The World Bank pointed out that key economic indicators, such as trade, investment, and consumption, are at their lowest since the Financial Crisis. Overall, 2020 will be a year full of economic challenges, and thus we must stay prudent.

In 2019, Taiwan Glass in 2019 fell short of expected profit due to the shrinking demand in the downstream market, which led to supply-demand imbalance and a fall in price.

In terms of flat glass, glass companies in China have established factories in Southeast Asian countries, where low costs of local labor and fuel are available. Products made there can be exported into Taiwan at relatively low prices, causing market prices to fall. Taiwan Glass, in response to this situation, has continued to strengthen management, quality assurance and after-sales service, while focusing on resource integration in the glass industry to maintain an orderly market.

The flat glass market in China has been slowed down due to U.S.-China Trade War. The economic growth rate has been revised downwards, and the oversupply would remain the same in the short term. Taiwan Glass' subsidiaries in China will continue to implement management, industrial safety and close control on COVID-19 pandemic while optimizing and upgrading production lines to maintain profitability.

As for fiber business, the technology and quality of Taiwan Glass's fiberglass products have always been the Company's core competency. For FRP, the new kiln, in cooperation with Owens Corning of the United States, started production this year, along with the most advanced fiberglass formulation and production technology. We are committed to reducing production costs and supplying customers with high performance and environmentally-friendly products.

In 2019, increased overall sales by 16% compared with 2018 can be attributed to the slightly increased demand for electronic-grade fiberglass fabric and the production of fiberglass fabric in Anhui Bengbu factory. In response to the market trends in the future, other than the ultra-thin fiberglass fabric #1017 which we have successfully developed and supplied, we have put continuous efforts into developing thinner fiberglass fabric. At the same time, with the vigorous development of 5G applications, we have also successfully developed low-dielectric (Low DK) fiberglass fabric, which has been certified and continuously adopted by international terminal manufacturers. The global target market share of 2020 is expected to be 20%.

As for container, tableware and kitchenware glass, the production capacity increased by 4.6%, and  $\alpha$ 33 high-quality heat-resistant feeding bottles have started production. Tableware and kitchenware glass continue to increase sales channels and diversify its products while working hard to establish our private brand, TG, to beat low price competition.

Shihlien Chemical Industrial Jiangsu Co., Ltd., reinvested by Taiwan Glass, has been profitable for three consecutive years as of 2019. The company has continued to optimize manufacturing process, improve production capacity, implement safety & hygiene management to maintain stable and continuous production as well as shipping. Shihlien Chemical Industrial Jiangsu Co., Ltd. is expected to generate profit in 2020.

Looking ahead, the global economy is faced with a major recession as the COVID-19 pandemic develops and the trade war continues. In response to changes in the future, Taiwan Glass develops new products such as high-performance FRP S2 glass and low-dielectric Low DK fiberglass fabric to add value to products. For flat glass, we will re-examine product structure and reduce cost to improve operating performance while pursuing our primary goal of achieving profitable growth.

In terms of corporate governance, we are dedicated to implementing corporate social responsibility, cultivating outstanding talents, providing safe & healthy workplaces and innovative & optimized services, etc. We also intend to make adjustments to partial assets to improve overall profitability. Taiwan Glass will strive to create value for stockholders and employees and become a role model for sustainability.

Lin, Por Fong  
2020.06.05



台灣玻璃工業有限公司第 19 屆董事 / 第 2 屆審計委員  
(2018-2021)

TGI 19th Directors / 2nd Audit Committee

董事長 Chairman	林伯豐 Lin, P F Since 1967		
總經理 總裁 President & CEO	林伯實 Lin, P S Since 1967		
駐會董事 Executive Director	林伯淳 Lin, P C Since 1976		
董事 Directors	林瀚東 Lim, H T Since 2009	彭誠浩 Peng, C H Since 2018	徐莉玲 Hsu, L L Since 2015
	林嘉宏 Lin, C H Since 2000	蘇育德 Su, Y T Since 1996	林嘉佑 Lin, C Y Since 2004
	林嘉明 Lin, C M Since 2006	陳正章 Chen, C C Since 2009	蔡增銘 Tsai, T M Since 2018
獨立董事/審計委員 Independent Directors/ Audit Committe	林豐正 Lin, F C Since 2012	陳清治 Chen, C C Since 2012	黃清苑 Hwang, T Y Since 2012

台灣玻璃工業有限公司第 19 屆董事 / 第 2 屆審計委員  
(2018-2021)

TGI 19th Directors / 2nd Audit Committee



( 數字由左至右Number from left side to right side )

林伯豐 Lin, P F 前排5 front row 5	林伯實 Lin, P S 前排6 front row 6	林伯淳 Lin, P C 前排7 front row 7	
林豐正 Lin, F C 前排4 front row 4	陳清治 Chen, C C 前排3 front row 3	黃清苑 Hwang, T Y 前排2 front row 2	彭誠浩 Peng, C H 前排9 front row 9
林瀚東 Lim, H T 前排1 front row 1	徐莉玲 Hsu, L L 前排8 front row 8	林嘉宏 Lin, C H 後排4 back row 4	蘇育德 Su, Y T 後排3 back row 3
林嘉佑 Lin, C Y 後排5 back row 5	林嘉明 Lin, C M 後排6 back row 6	陳正章 Chen, C C 後排2 back row 2	蔡增銘 Tsai, T M 後排1 back row 1

台灣經營團隊 Taiwan Management Team

董事長 Chairman	林伯豐 Lin, P F	平板事業部營運長 COO, Flat	林嘉宏 Lin, C H
總經理 總裁 President & CEO	林伯實 Lin, P S	台中廠/鹿港平板廠/平板研發部代理副總 Deputy VGM, TF/TF-4/ Flat Glass R&D	王澤南 Wang, C N
駐會董事 Executive Director	林伯淳 Lin, P C	彰濱廠副總 VGM,TC	周敬群 Chou, C C
纖維事業部營運長 COO, Fiber	蘇育德 Su, Y T	平板事業部營業協理 AGM, Flat Sales	陳紀澄 Chen, C Y
纖維事業部總經理 GM, Fiber	林嘉佑 Lin, C Y	台中廠協理 AGM, TF	王國方 Wang,K F
纖維事業部專案副總 VGM, Project Fiber	陳正章 Chen, C C	玻璃新材料部副總 VGM, New Glass Materials	趙宏榮 Chao, H J
纖維事業部副總 VGM, Fiber	蔡維新 Tsai, W S	容食事業部總經理 GM, Container & Glassware	謝進興 Hsieh, C H
鹿港廠副總 VGM, TL	劉敏雄 Liu, M H	新竹廠廠長 Plant Dir., TS	吳蔚騰 Wu, W T
鹿港廠廠長 Plant Dir., TL	紀錦水 Chi, C S	新竹廠生產協理 AGM, Prod., TS	沈賢輝 Shen, H H
桃園廠副總 VGM, TT	陳慶良 Chen, C L	新竹廠研發協理 AGM, R&D TS	鍾洞生 Chung, T S
桃園廠廠長 Plant Dir., TT	余哲超 Yu, C C	車板本部總經理 GM, Autoglass	陳冠宇 Chen, K Y
大陸事業部營運長 COO, China Prod.	林嘉宏 Lin, C H	車板本部副總 VGM, Autoglass	呂宗祥 Lu, T H
財務/管理本部總經理 GM, Finance/ Admin	林嘉明 Lin, C M		
管理本部副總 VGM, Admin.	洪有欽 Hung, Y C		
採購本部副總 VGM, Purchasing	蔡增銘 Tsai, T M		

大陸經營團隊 China Management Team

台灣玻璃中國控股有限公司 TGCH	董事長 Chairman 副董事長 Vice Chairman 董事 Directors	林伯豐 Lin, P F 林伯實 Lin, P S 林伯淳 Lin, P C 林嘉宏 Lin, C H	林嘉佑 Lin, C Y	林嘉明 Lin, C M
台玻長江玻璃有限公司 CFG	董事長 Chairman 總經理 GM	林嘉宏 Lin, C H 王鳳寶 Wang, F P 姬文剛 Chi, W G		
台玻成都玻璃有限公司 CDG	董事長 Chairman 總經理 GM	林嘉宏 Lin, C H 姬文剛 Chi, W G		
台玻咸陽玻璃有限公司 TXY	董事長 Chairman 總經理 GM	林嘉宏 Lin, C H 張政峰 Chang, C F		
台玻安徽玻璃有限公司 TAH	董事長 Chairman 代理總經理 Deputy GM	林嘉宏 Lin, C H 陳祺灝 Chen, C H		
台玻太倉工程玻璃有限公司 TTAR	董事長 Chairman 總經理 GM	林嘉宏 Lin, C H 姬文剛 Chi, W G		
台玻武漢工程玻璃有限公司 TWAR	董事長 Chairman 總經理 GM	林嘉宏 Lin, C H 姬文剛 Chi, W G		
台玻悅達汽車玻璃有限公司 TYAU	董事長 Chairman 副董事長 Vice Chairman 副總 VGM	林嘉宏 Lin, C H 成榮春 Cheng, J C 洪昌仁 Hung, C J	總經理 GM 生產部副總 VGM, Prod.	吳英華 Wu, Y H 李德貴 Li, T K

大陸經營團隊 China Management Team

台嘉玻璃纖維有限公司 TGF	董事長 Chairman 纖維事業部營運長 COO, Fiber 總經理 GM	林伯豐 Lin, P F 蘇育德 Su, Y T 蕭世欽 Hsiao, S C	纖維事業部總經理 G M, Fiber 營業部副總 VGM Sales	林嘉佑 Lin, C Y 蔡維新 Tsai, W S
台嘉成都玻纖有限公司 TCD	董事長 Chairman 纖維事業部營運長 COO, Fiber 副總 VGM	林伯豐 Lin, P F 蘇育德 Su, Y T 林雲炎 Lin, Y Y	纖維事業部總經理 GM, Fiber 營業部副總 VGM, Sales	林嘉佑 Lin, C Y 蔡維新 Tsai, W S
台嘉蚌埠玻璃纖維有限公司 TBF	董事長 Chairman 纖維事業部營運長 COO, Fiber 總經理 GM	林伯豐 Lin, P F 蘇育德 Su, Y T 陳正章 Chen, C C	纖維事業部總經理 GM, Fiber 營業部副總 VGM, Sales	林嘉佑 Lin, C Y 蔡維新 Tsai, W S
台玻青島玻璃有限公司 QFG	董事長 Chairman 總經理 GM	林伯實 Lin, P S 宋成紅 Sung, C H		
台玻東海玻璃有限公司 DHG	董事長 Chairman 總經理 GM	林伯實 Lin, P S 陳月進 Chen, Y C	副總 VGM	顏和平 Yan, H P
台玻華南玻璃有限公司 HNG	董事長 Chairman 總經理 GM 節能玻璃部鍍膜副總 VGM, LE coating	林伯淳 Lin, P C 李天明 Lee, T M 趙新臣 Chao, H C	鏡板部副總 VGM, Mirror glass	趙成家 Chao, C C
台玻天津玻璃有限公司 TJG	董事長 Chairman LE玻璃部副總 VGM, LE glass	林伯淳 Lin, P C 趙新臣 Chao, H C	管理部/浮法玻璃部副總 VGM, Admin/Flat	侯琨玉 Hou, K Y

集團產能 Production Capacity

項目 Item			
台玻集團各產品總產能 Total Production Capacity of Each Product			
產品 Products	地區 Area	窯爐座 Furnaces	現有產能 Existing Capacity(MT)
浮式平板玻璃 Float Glass	台灣 Taiwan	2	340,000
	大陸 China	11	2,754,800
	小計 Total	13	3,094,800
微薄玻璃 Ultra-Thin Glass	台灣 Taiwan	1	29,280
	大陸 China	—	—
	小計 Total	1	29,280
玻璃纖維布 Fiberglass Fabric	台灣 Taiwan	1	20,000
	大陸 China	5	95,000
	小計 Total	6	115,000
玻璃纖維增強絲 Fiberglass Reinforced	台灣 Taiwan	2	95,000
	大陸 China	—	—
	小計 Total	2	95,000
容器玻璃 Glass Container	台灣 Taiwan	6	169,000
	大陸 China	—	—
	小計 Total	6	169,000
食廚玻璃 Glassware	台灣 Taiwan	1	3,000
	大陸 China	—	—
	小計 Total	1	3,000
合計 Total		13	656,280
		16	2,849,800
		29	3,506,080

台玻集團Low-E線加工產能 Capacity of Low-E Processing Production Lines

產品 Products	地區 Area	生產線 Lines	千M <sup>2</sup> Thousand M <sup>2</sup>
低輻射Low-E玻璃 Low-E Glass	台灣 Taiwan	1	4,000
	大陸 China	8	34,000
合計 Total		9	38,000

台玻集團汽車玻璃加工線產能 Capacity of Automotive Glass Processing Production Lines

產品 Products	地區 Area	生產線 Lines	千台 Thousand Cars
汽車玻璃 Automotive Glass	台灣 Taiwan	1	250
	大陸 China	5	2,000
合計 Total		6	2,250



## 產品介紹 Products

### 平板玻璃

平板玻璃是台玻發展的核心產品，台灣及中國大陸是台玻生產製造的兩大區域。產品主要行銷台灣、中國、日本、韓國、東南亞、北美、中東、澳洲、歐洲、南非及俄羅斯等地區。

### 建築用

#### 浮式明板玻璃 / 浮式色板玻璃

浮式明板玻璃表面平滑，波紋少，透視性佳，透過調伴適量色料，成為色板玻璃，可減少輻射熱的穿透，節省能源，增加建築物外觀色彩變化，創造更高價值感。

### 壓花玻璃

具有透光不透視之功能，亦可創造各種不同的模糊光移及陰影。

### 低輻射玻璃

隔熱效果最佳，具高透光率，可達環保節能及綠建材、綠建築的要求。世界先進國家生產之低輻射玻璃皆以雙層玻璃(隔熱及隔音效果佳，中間層為乾燥氣層有防霧效果)成品銷售。台玻各種低輻射玻璃產品輻射率可達最高級的0.02-0.12。

### 反射玻璃

可防止陽光直射，隔熱性能高，提供室內居住者舒適感，亦能節省能源，並呈現多彩和諧的建築物外觀。

### 強化玻璃

強度約為普通玻璃的3-5倍，可增加玻璃使用的安全性，當玻璃遭受外力破壞時成為豆粒大的顆粒，減少對人體的傷害；可耐溫度之急速變化，因有瞬間破裂的風險，應再作熱浸處理Heat Soak test，確保使用上更安全。

### 熱處理增強玻璃

強度為普通玻璃的2倍，波紋較平整，且不易瞬間破裂。

### 膠合玻璃 / 高性能隔音膠合玻璃

具有安全性、防犯性、隔離紫外線、控制可視光線透過率、防止玻璃碎片飛散等特性，如使用有色膠合膜，亦可提昇建築物外觀的美感，且可減輕熱能進入室內，節省冷氣能源，增加生活環境舒適度。台玻開發製成之高性能隔音膠合玻璃，除上述特點，更具備了極佳的中高頻的隔音效果。

### 網印漆板玻璃

色澤多樣化，穩定不褪色，可減少太陽熱能進入室內，降低空調費用，且經強化處理，安全性高，可替代石材、磁磚，減輕建築物外牆結構負荷，亦可有效降低眩光作用。顏色及圖案也能提供客製化服務，創造設計獨特性及美感。

### 彎曲玻璃 / 彎曲強化玻璃

增添建築物景觀的雄偉性與優美性，使室內隔間更具多采多姿的變化；經過強化加工後，強度為一般彎曲玻璃的3-5倍，可因應對彎曲造型更大尺寸的要求，視覺品質佳。

### 銀鏡玻璃

反射影像清晰、精準，背漆可耐酸、耐濕，環保銀鏡運用無銅、鉛製程，避免重金屬污染，符合地球環保潮流。

### 光電用

#### 優白玻璃

具有比一般透明玻璃更優越的光學性能，更高的可見光及紅外線透過率，大量提升太陽熱能使用率，可使用在任何需要低鐵高透光及高透視場合或產品，例如太陽能電池BIPV及高級建材需求使用，以因應未來因石油資源枯竭，人類對節能環保及再生能源的需求。

### 超白光伏玻璃

主要用於晶體矽太陽電池板的蓋板玻璃，具有低含鐵量、高透光率、低光反射率、高平整度、高機械強度、低自爆率、抗風化、抗沖擊等優異特點。

### 微薄玻璃

台中廠TF5為全新微薄觸控玻璃生產線，全面導入電腦化自動生產管理系統、無塵室及機械手臂收片等設備。2014年11月正式投產,厚度1.1mm、0.7mm至0.55mm皆已量產，0.33mm也已產出，產品經過多重檢驗嚴格把關，媲美日系供應廠商,達到高品質的國際水準，可供應國內外電子大廠生產高品質之消費性電子產品。

## 產品介紹 Products

### 汽車玻璃

台灣汽車玻璃股份有限公司，生產製造各式汽車用前擋風膠合玻璃、天窗、車門窗及後擋風強化玻璃。為台灣主要汽車玻璃供應商，市場佔有率40%；產品通過世界各國汽車零件品質安全認證: 台灣車輛安全審驗中心、歐盟ECE、日本JIS、美國AS及中國CCC，並供應 TOYOTA、FORD、MAZDA、HONDA、NISSAN、HYUNDAI、SUZUKI等國內、外各大汽車製造廠生產線組裝及售後服務零件使用。

### 玻璃纖維增強絲

**玻璃纖維的製造係將熔融狀的玻璃絲急冷固化而得之纖維狀材料。**

用途: F.R.P(Fiber Reinforced Plastic)產業，利用玻璃纖維來強化塑膠材料，應用層面包括: 船體類、營建類、耐腐蝕工程類、工程塑膠類、運動器材類、電子電器類、運輸工具類、航太軍事類等。台玻目前玻璃纖維增強絲產品有切股氈(CSM)、併股紗束(CR)、直捲紗束(DR)、編紗束(WR)、切股(CS/O-CS)。玻璃纖維的優異性為耐衝擊強度高、電氣絕緣性佳，是FRP產業中最廣泛使用之材料。

### 玻璃纖維紗、布

#### 玻璃纖維紗

係由慎選合格的原料精密混合，嚴格的生產條件控管，經由高溫溶解抽取而成。生產單纖直徑G(9  $\mu$ m)、E(7  $\mu$ m)、D(5  $\mu$ m)及BC(4  $\mu$ m)全系列玻纖紗，品質精良。可用於織造電子級和低介電玻纖布作為印刷電路板(PCB)原材料外，亦被廣泛使用作為補強材及其他用途。

#### 玻璃纖維布

使用台玻自製的優質玻纖紗織造成不同厚度之電子級和Low Dk低介電玻纖布，主要供應國內外銅箔基板大廠生產黏結片及高壓成型板材用於印刷電路板，應用範圍包含精密的行動裝置及5G高頻高速資料傳輸，品質符合嚴格標準，並已取得國際終端大廠認證並持續採用。

### 玻璃器皿

#### 容器

玻璃容器具有絕佳之透明度，且易封蓋及長時間保存內容物風味等優點。此外，玻璃容器亦能漸進加熱至高溫而不變形。且可百分之百的回收再使用之特性，不會破壞地球環境生態，勢必是未來政府環保政策與社會環保意識最為支持的一種包裝材料。為因應市場需求與考量環保因素，台玻致力於輕量瓶(NNPB)吹製技術，製造厚度輕薄均勻、外型美觀的瓶形，年產量超過2億支以上，不僅可減輕客戶的採購成本，並可節省原料與能源，進而促進對環境的保護。容器種類可分為: 狹口瓶、廣口瓶、輕量瓶(NNPB)，色澤可分為透明、茶色、綠色(翡翠綠、古典綠、香檳綠)等色。為提供嬰兒奶瓶市場多樣性的選擇，台玻新開發生產耐熱玻璃奶瓶，瞬間耐熱溫差可達150℃，符合國家CNS標準，提供消費者更具安全保障的高品質奶瓶。

#### 食器

產品分為杯身較薄的吹製杯及杯身較厚、有手把的壓製杯，色澤及白度優並可提供客戶不同顏色的選擇(如: 黑色、鐵灰色、藍色、綠色、紫色等)，品質符合CNS、美國FDA、歐盟REACH及SVHC等多項國際標準。產品種類有水杯、啤酒杯、威士忌杯、馬克杯、密封罐、碗盤等，可搭配印刷、貼花、咬霧、噴砂、噴色等加工處理，讓產品更豐富。

#### 廚器

為膨脹係數 $\alpha$ -33之硼矽酸耐熱玻璃，瞬間溫差可達150℃，且耐酸鹼性與強度均較鈉鈣玻璃佳，大幅提升使用安全性及用途多樣化。產品主要為咖啡壺、沖茶器、泡茶壺、儲物罐等，並陸續開發接柄杯及雙層杯等加工產品，提高附加價值。

#### 自有品牌

為朝向生產具有高附加價值的品牌市場，台玻創立自有品牌「TG」，以年輕世代為對象，聘請國際設計大師深澤直人，將對生活的看法融入設計，製作兼具美感與實用性的當代玻璃系列器皿，從台灣出發，行銷全球。

## 產品介紹 Products

### 實聯化工江蘇有限公司

#### 純鹼

純鹼 ( $\text{Na}_2\text{CO}_3$ ) 是重要的化工基本原料之一，廣泛應用於化工、玻璃、冶金、造紙、印染、合成洗滌劑、石油化工、食品、醫藥衛生等工業，使用量大，在國民經濟中佔有重要的地位。

#### 氯化銨

氯化銨 ( $\text{NH}_4\text{Cl}$ ) 是一種優良的氮肥，廣泛應用於複合肥行業。特別適用於水稻、小麥、棉花、麻類、蔬菜等作物，肥效快、持續時間長、能加速作物光合作用，促進新陳代謝，增根壯莖茂葉,提高作物的抗病蟲害和抗倒狀能力，增加產量。

#### 生技鹽

鹽（氯化鈉）是化學工業的基本原料，廣泛應用於化工、醫藥、食品、飼料、洗劑、日化品、水處理、材料、紡織、染整、特用化學品等方面。鹽是人類和動物生存健康所必需，在生命健康產業中亦有寬廣發展空間。



實聯化工江蘇有限公司  
SHIH LIEN CHEMICAL INDUSTRIAL JIANGSU CO., LTD.

## 產品介紹 Products

### Flat Glass

Flat glass is one of the core products of TG. With production plants based in Taiwan and China, TG's major markets reach Taiwan, China, Japan, Korea, South-East Asia, North America, Middle East, Australia, Europe, South Africa, Russia, and so forth.

#### For ARCHITECTURE

##### Clear Float Glass / Tinted Float Glass

Clear float glass features smooth and flat surfaces, low distortion, and high transparency. With a prescribed quantity of tint agent, it can be turned into tinted float glass, which reduces solar heat transmission to save energy and offers diverse exterior colors for buildings to create higher added-value.

##### Rolled Glass

Rolled Glass not only provides the function of visual screen but also enables shifts between light and shade.

##### Low-E Glass

Low-E glass has the best performance of thermal insulation and offers high transparency and energy-saving properties that is required for green buildings and construction materials. The Low-E Glass supplied in developed countries is all made into insulating glass (which offers better insulation and soundproof performance and prevents misting by using dry air in the unit). All TG's Low-E glass can achieve an emissivity coefficient between 0.02 and 0.12.

##### Reflective Glass

Reflective glass can deflect incident sunlight and provide high thermal performance for indoor comfort. It can save the energy, and meanwhile improve the aesthetic appeal of the building.

##### Tempered Glass

Tempered glass is 3-5 times stronger than annealed glass and improves the safety of glass application. Once broken, the glass crumbles into small granular chunks, which are less likely to cause injury. It can also withstand sudden changes in temperature. To avoid the spontaneous breakage, tempered glass should undergo heat soak test to improve safety in use.

### Heat Strengthened Glass

Heat strengthened glass is 2 times stronger than annealed glass with less distortion, and less likely to occur spontaneous breakage.

#### Laminated Glass /

##### Sound Control Laminated Glass

Laminated glass has features of enhanced safety, security, protection from ultraviolet rays, control over transparency levels and shatter-prevention. The color laminated glass can raise the aesthetic appeal of the building, reduce the solar heat transmission to save energy and improve the comfort of living areas. In addition to the features above, sound control laminated glass, developed by TG, also provides an excellent sound insulation properties, ranging from medium to high frequency.

#### Ceramic Spandrel Glass /

##### Ceramic Silkscreen Glass

Ceramic spandrel and ceramic silkscreen glass provide a variety of stable and durable colors. They can also reduce air-conditioning cost by insulating solar heat. After being tempered to improve safety, spandrel and silkscreen glass can be a substitute for stone and tile to reduce the structural load on the external wall. The printing of the glass can also reduce glare. Various colors and graphics can be custom-made to meet designing needs as well as create particularity of space design.

#### Bent Glass / Bent Tempered Glass

Buildings glazed with bent glass can improve spectacular and aesthetic appeal and have the advantages of diversified facade and interior partition. After tempering process, bent tempered glass, which is 3-5 times stronger than ordinary bent glass, can meet the requirements for larger sizes and exceptional optical quality.

#### Silver Mirror

Mirror glass provides clear and exact reflections. Its back paint resists acid and humidity. Environmentally-friendly silver mirror is produced by copper/lead free process to prevent metal contamination, meeting environmental requirements around the world.



## 產品介紹 Products

### Silver Mirror

Mirror glass provides clear and exact reflections. Its back paint resists acid and humidity. Environmentally-friendly silver mirror is produced by copper/lead free process to prevent metal contamination, meeting environmental requirements around the world.

### For SOLAR PANEL Super Clear Glass

Super clear glass has better optical performance with higher visible light and infrared transmittance than ordinary clear glass and greatly enhances solar heat transmittance. Super clear glass can be used for any applications and products that require high transmittance and transparency, i.e. the application of BIPV solar module and advanced construction materials, to respond to the issues of oil resource depletion and the requirements of clean and renewable energy.

### Low Iron Photovoltaic Cover Glass

Mainly used as the cover of crystalline silicon solar modules with the advantageous features of low iron content, high transmission, low reflecting rate, high flatness, high mechanical strength, low probability of spontaneous breakage, anti-weathering, high impact resistance and so forth.

### Ultra-Thin Glass

The TF5 furnace in Taichung Factory is a newly established production line for electronic grade ultra-thin glass. Introducing the installations of Computerized Automated Production Management System, cleanroom and mechanical arms for collecting glass panes, this line started production in November 2014 with mass production for 1.1mm and 0.7mm glass and production of 0.33mm glass. All of the products undergo strict inspections before shipment. The high quality product is able to compete with Japanese manufacturers and provide for major electronic manufacturers at home and abroad to produce consumer electronic goods.

### Automotive Glass

Taiwan Autoglass Ind. Corp., the main supplier of automotive glass in Taiwan with 40% market share, produces various laminated windshield glass, sunroof glass, side windows, and tempered rear windows. Its glass products not only are awarded the quality and safety certifications around the world, including VSCC in Taiwan, ECE in European Union, JIS in Japan, AS in the U.S., and CCC in China, but also are

supplied as Original Equipment and Automotive Glass Replacement for several international car makers, such as TOYOTA, FORD, MAZDA, HONDA, NISSAN, HYUNDAI, and SUZUKI.

### Fiberglass Reinforced

Fiberglass reinforced is a fiber-like material manufactured by rapidly cooling melted glass filaments. FRP (fiber reinforced plastic) industry uses fiber glass to reinforce plastic composites, widely applied to the fields including: shipbuilding, construction, corrosion-resistant engineering, engineering plastics, sports/recreation, electronics, transportation, military and aerospace, etc. The products of TG fiberglass reinforced include Chopped Strand Mat (CSM), Conventional Roving (CR), Direct Roving (DR), Woven Roving (WR), and Chopped Strand (CS/O-CS). With outstanding characteristics of high impact strength and excellent electrical insulation properties, fiberglass reinforced is widely used in FRP industry.

### Fiberglass Yarn & Fabric

#### Fiberglass Yarn

Fiberglass yarn is the product of qualified selected materials mixed in a specific proportion, melted in high temperature furnaces and drawn into filament under strict production control. TG produces good quality single filament with diameters ranging from G(9  $\mu$  m), E(7  $\mu$  m), D(5  $\mu$  m), to BC(4  $\mu$  m). Fiberglass yarn can be woven into E-glass and Low Dk fiberglass fabric for use in printed circuit boards (PCB). It is also widely used for strengthening, reinforcement, etc.

#### Fiberglass Fabric

TG utilizes our own fiberglass yarn to weave a series of E-glass and Low Dk fiberglass fabric with different thickness, supplying domestic and overseas Copper Clad Laminate (CCL) manufacturers with materials for prepreg and laminate, for use in PCBs. Applications include sophisticated mobile devices, 5G high speed and high frequency data transfer, etc. Meeting high quality standards, TG's products have been certified and continuously adopted by international terminal manufacturers.

## 產品介紹 Products

### Container, Tableware & Kitchenware

#### Container

Glass containers possess the special advantages of excellent transparency, easy sealing and flavor preservation. Furthermore, glass containers can be heated up gradually without deforming. It is also 100% recyclable and, therefore, environmentally friendly, fully aligned with government's environment protection policy and supported by social environmental consciousness groups.

In light of market demand and environmental concerns, TGI has put emphasis on NNPB technique to produce lightweight glass bottles, consistent wall thickness and good appearance, with production capacity more than 200 million pieces each year. Besides saving cost for customers, lightweight bottles require less raw materials and energy, therefore are more environmentally friendly.

Glass containers are classified by shape: narrow neck bottles, wide mouth jars, lightweight bottles (NNPB) and by color: flint, amber, green (emerald, antique, champagne green), etc..

To provide more choices to the markets, TGI has developed and produced heat-resistant baby feeding bottles, capable of withstanding thermal shock up to 150°C, which meets the requirements of CNS and safety standards of high quality.

#### Tableware

Tableware glass includes blown-wares with thin walls and press-wares for thicker walls or glasses with handles. With its high transparency and clarity, various colors (ex. black, charcoal, blue, green, purple) are available for clients to choose from. The fine quality of our tableware products have been approved to meet CNS, FDA, ROHS, REACH and SVHC standards. A variety of products including tumblers, beer glasses, whisky glasses, mugs, canisters, bowls/plates with diverse value-added process such as screen-printing, frosting, sand-blasting and color spraying meet market needs.

#### Kitchenware

Kitchenware glass is made of  $\alpha$ -33 borosilicate material with thermal resistant to 150°C temperature difference with better alkali and acid-resistance than sodalime glass, enhancing the safety and diversity of products. Product range includes coffee / tea pots, pitchers,

jars, etc, and we continue to add value by developing handle-attaching and double-wall glassware.

#### Private Brand

Toward the brand market of producing high value added products, TGI established its private brand "TG". This brand is young-generation-oriented. TGI has commissioned Mr. Naoto Fukasawa, who is an international designer, to design products with his perspectives of life, and then TGI manufactures the containers of contemporary glass series, which contains esthetic sensibilities and practicability. Starting from Taiwan, TGI will market its private brand around the world.

### Soda Ash & Ammonium Chloride

#### SHIHLIEN CHEMICAL INDUSTRIAL JIANGSU CO., LTD.

#### Soda Ash

Soda ash (Na<sub>2</sub>CO<sub>3</sub>) is one of the most important industrial chemicals with widespread applications. It is one of the basic raw materials for glass, for papermaking, dyeing and detergents, and can also be used as flux for metallurgy and softener for water purification.

#### Ammonium Chloride

Ammonium Chloride (NH<sub>4</sub>Cl) is mainly used as nitrogenous fertilizer for the complex fertilizer industry. It accelerates photosynthesis and crop metabolism, contributing to plant health and thereby increases crop yield. It is highly suitable for rice, wheat, cotton, hemp and vegetables, with a quick and long-lasting fertilizing effect.

#### Biotech Salt

Common salt (sodium chloride) is a basic chemical used in many industries, including chemical, pharmaceutical, food, feeds, detergents, toiletries and water treatments materials, textile, dyeing, specialty chemical etc. As common salt is also critical to sustain human and animal life, there is plenty of room for growth in the life and health sectors.



產品介紹 Products

Low-E 玻璃

單銀低輻射玻璃

- 1. 紅外線反射率高，可直接反射遠紅外熱輻射；
- 2. 表面輻射率(  $\varepsilon$  )低，吸收外來能量的能力小，從而再輻射出的熱能少；
- 3. 遮陽係數(SC)可選擇範圍廣，可根據需要調節太陽直接輻射能透過量，以適應不同的設計需要。

雙銀低輻射玻璃

- 1. 較高的可見光透光率，室內可充分利用自然光采光。
- 2. 極低的太陽能透過率，有效限制太陽熱輻射的透過，尤其是近紅外熱輻射透過；遮陽係數(SC)較單銀Low-E玻璃更低。
- 3. 有效地限制夏季室外的熱輻射進入室內。和單銀Low-E玻璃比較，冬季保溫性能更好，傳熱係數(U值)更低。

三銀低輻射玻璃

高透光率、低反射率、低SC值並存，極低的輻射率與雙銀低輻射玻璃或單銀低輻射玻璃對比，具有同樣可見光透過率的三種玻璃:  
SC三銀玻璃<SC雙銀玻璃<SC單銀玻璃  
具有同樣SC值的三種玻璃，室外反射率下限RO:  
RO三銀玻璃<RO雙銀玻璃<RO單銀玻璃

Low-E Glass

Single Low-E Glass

- 1. Because of the high infrared reflectance, the Low-E glass can reflect far infrared heat radiation directly.
- 2. Due to the low emissivity, the glass surface is less able to absorb external energy, and thus lower the reradiated thermal (heat) energy.
- 3. With wide range of shading coefficient (SC) options, customers can choose different levels of direct solar heat transmission based on needs and designs.

Double Low-E Glass

- 1. With higher visible light transmittance, it allows to make the most of indoor natural lighting.
- 2. The solar heat transmission through windows is extremely low. It effectively limits solar thermal radiation, especially the near-infrared. Its shading coefficient is also lower than Single Low-E Glass.
- 3. It effectively limits outdoor thermal radiation in summer. Compare with Single LOW-E Glass, it also has better insulation and lower U value in winter.

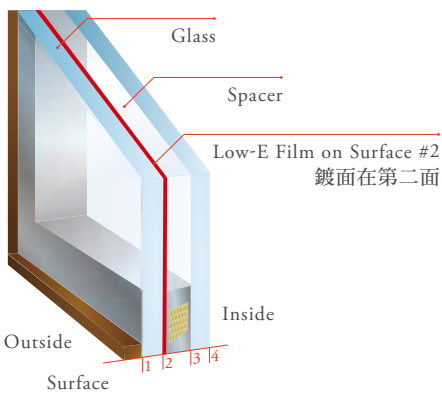
Triple Low-E Glass

With all the features of high transparency, low reflectivity, low SC values, and low emissivity. Compare Double Low-E glass or Single Low-E glass with the same visible light transparency:  
*SC Triple Low-E glass < SC Double Low-E glass < SC Single Low-E glass*  
With the same SC value, the outdoor reflective rate lower limit RO:  
*RO Triple Low-E glass < RO Double Low-E glass < RO Single Low-E glass*

產品介紹 Products

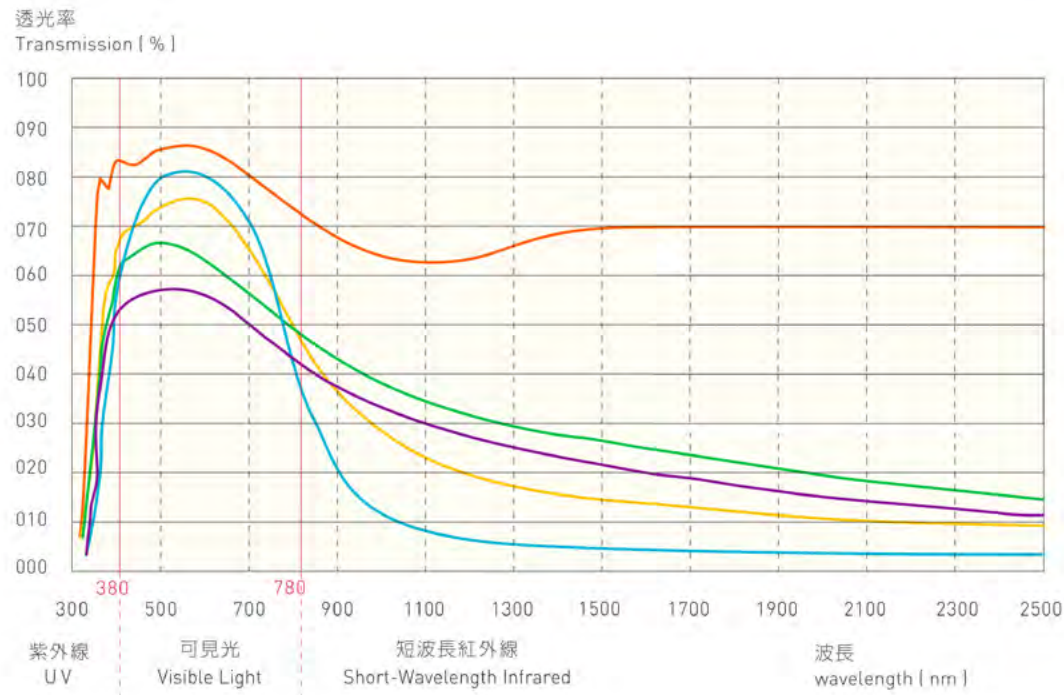
低輻射中空玻璃構造圖

Construction of Low-E Insulating Glass



不同鍍膜在太陽光譜中透射率的比較

Spectrum for Different Coating Glass Transmission



空調耗電比率

透明玻璃	用電比率：1.00
三銀Low-E玻璃	用電比率：0.57
雙銀Low-E玻璃	用電比率：0.62
單銀Low-E玻璃	用電比率：0.66
熱控單銀Low-E玻璃	用電比率：0.64

## 產品介紹 Products

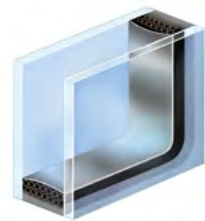
### TPS玻璃

#### 新一代中空系統

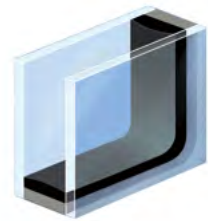
TPS是一種新型的中空玻璃暖邊系統，它是以特殊丁基膠為輔材，填入分子篩的熱塑性隔條。

#### 特性

1. TPS: Thermo Plastic Spacer / 熱塑性隔條
2. TPS熱塑性隔條不含金屬嵌入物
3. 提高玻璃邊緣的熱阻隔性
4. 溫度均勻分布在整個玻璃表面
5. 有效降低凝露的產生
6. 彈性邊緣密封
7. 使玻璃設計變得更為靈活和方便
8. 完美的匹配玻璃裝配行業
9. 高的質量控制＝更長的使用壽命



普通型 Conventional IGU  
分三部分：剛性間隔填充分子篩塗布丁基膠  
Three parts: fixed spacer filled with desiccant and a special butyl.



TPS  
一個整體：熱塑性隔條填充分子篩  
One single unit: Thermo Plastic Spacer filled with desiccant.

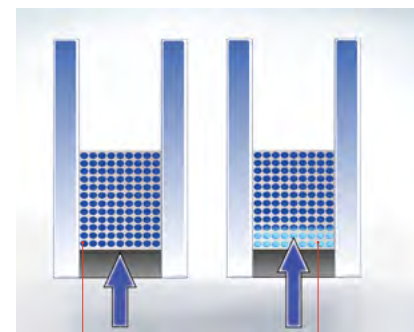


良好的力學性能  
Better mechanical performance

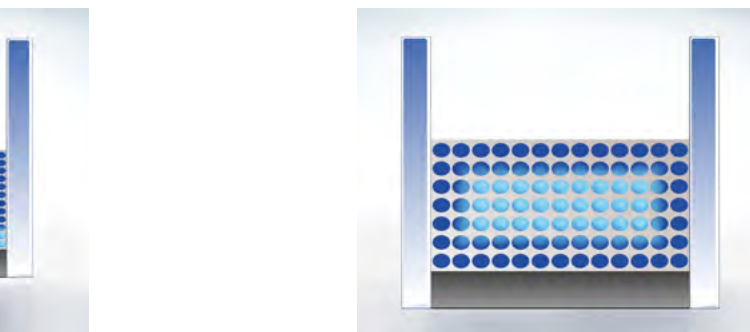
### TPS濕氣屏障的原理 The Principles of TPS Moisture Barrier

長久的使用壽命源自最終的水氣屏障

The durability is ultimately determined by the barrier of moisture.



初期水分滲入  
Humidity penetration in early stage.



水分滲入後期形成自然屏障  
After the penetration, the moist develops a natural barrier.

- 乾燥的分子篩 Dry desiccant
- 半飽和分子篩 Half-saturated desiccant
- 飽和分子篩 Saturated desiccant

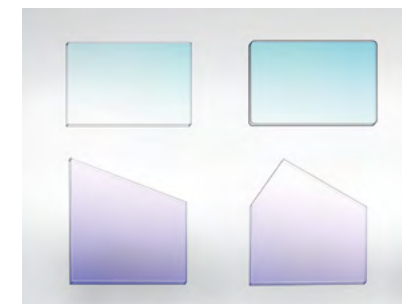
## 產品介紹 Products

### 應用領域

1. 住宅建築
2. 商用建築
3. 結構幕牆
4. 高速鐵路
5. 汽車、大型巴士

### Applications

1. Residential building
2. Commercial buildings
3. Structural curtain wall
4. High speed rail
5. Vehicles and buses



1. 生產形狀靈活多樣  
Dynamic and various shapes



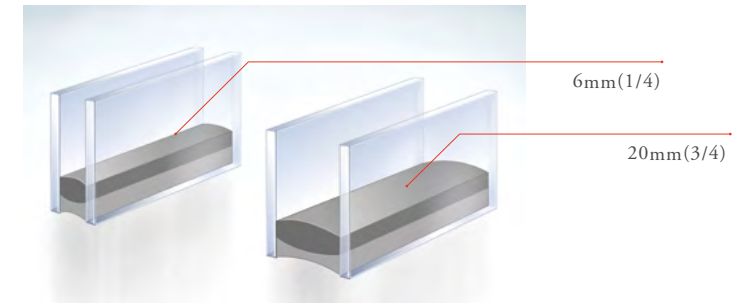
2. 鏤空的中空玻璃系統  
Hollow-out insulating glass system



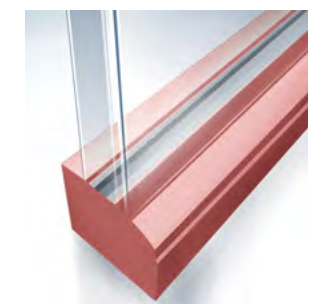
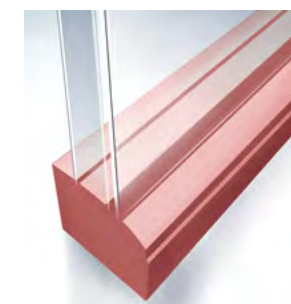
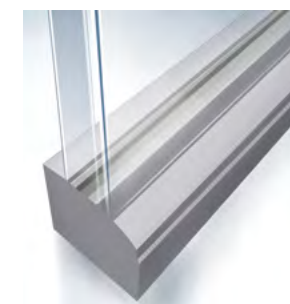
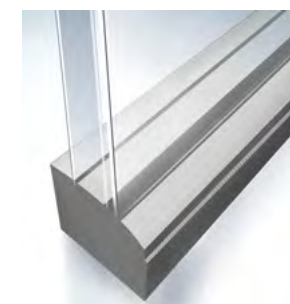
3. 內飾條協調地裝在熱塑性隔條上  
Moulding / decoration strip works perfectly with Thermo Plastic Spacer



4. 有邊或無邊的中空玻璃  
Insulating glass with or without edge



5. 隔條寬度通常可以在6到20mm的範圍內任意調節  
The width of spacer normally can be freely adjusted between 6 and 20mm



6. 在窗框和玻璃之間獲得更好的視覺感官  
Better visual effects for the frame and glass



## Low-E 玻璃應用 Applications



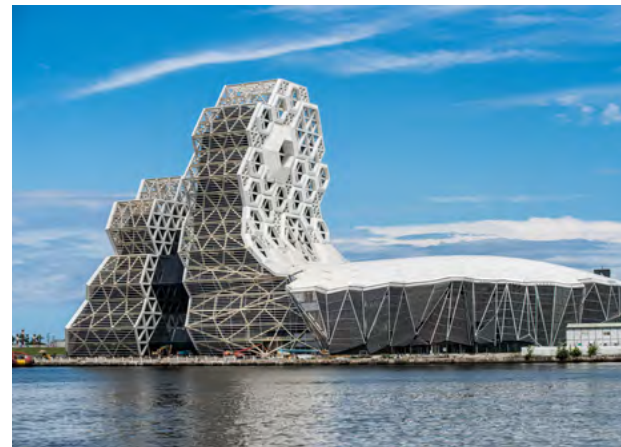
國泰置地廣場  
Cathay Landmark  
Low-E (TDE44)複層玻璃



聯合大於大樓  
UDN Group Office and Residential Complex  
Low-E (TDE47)膠合複層玻璃



台北南港國家會展中心  
Taipei Nangang Exhibition Center  
Low-E (TDE78)複層玻璃



高雄海洋文化及流行音樂中心  
Kaohsiung Music Center  
Low-E (TDE78)複層玻璃

## Low-E 玻璃應用 Applications

適用(亞)熱帶型氣候組合

Assembly Sequence Suitable for  
(Sub) Tropical Zone



室外 Outside 1 2 3 4 室內 Inside  
Low-E glass Clear or tinted glass  
(coating on surface #2)

鍍面在#2面: 阻斷大量輻射熱能的穿透, 僅少數熱能進入使室內保持涼爽。

coating on surface #2: The heat is reradiated back outdoors, reducing the heat gain potential into the building interior.



高雄市立圖書館總館  
Kaohsiung Main Public Library  
Low-E (TDE60) IGU

適用(寒)溫帶型氣候組合

Assembly Sequence Suitable for  
(Frigid) Temperate Zone



室外 Outside 1 2 3 4 室內 Inside  
Clear or tinted glass Low-E glass  
(coating on surface #3)

鍍面在#3面: 室內的熱能因Low-E雙層玻璃的阻斷而不易輻射至室外而能保暖。

coating on surface #3: Low-E insulating glass will reflect IR heat from inside the room to help reduce the energy loss.



元利信義聯勤  
One Park Taipei  
Low-E (TDE78) Laminated IGU



東京小田原市江之浦測候所  
The tip of the Summer Solstice Observation Gallery ©  
Odawara Art Foundation



國泰民生建國大樓暨台北國泰萬怡酒店  
Cathay Landmark Minsheng-Jianguo  
Low-E (TDE44) IGU



節能實例 Energy Saving Project Case Study



臺北南山廣場 Taipei Nan San Plaza

「臺北南山廣場」辦公大樓，總高272公尺，建物帷幕外牆由台玻協助三菱地所及瀚亞建築師事務所共同設計，外牆面積九成以上均為玻璃結構，並獲得內政部「建物外玻璃熱透過率(THT)值在0.3以下的綠建築節能(鑽石級)標章」及榮獲台灣優良智慧綠建築暨系統產品獎2017 TIBA AWARDS最高榮譽的「鉑金獎」。

- 1. 採用台玻Low-E節能複層玻璃，中間為12mm的空氣層有效阻隔熱能，相較一般玻璃，可減少45%的冷氣耗電費。
- 2. 安全性亞洲最強：以最高規格的結構設計，基樁打至岩盤，並裝置兩顆阻尼器，搭配亞洲最強可抗16級風壓的大樓帷幕，減少大樓受高空強風和颱風所造成的搖晃，提供最高等級的安全保障。

The building “Taipei Nan San Plaza” is built with a height of 272 meters. 90% of this building’s external wall is made of glass structure, designed cooperatively by TGI, Mitsubishi Estate and Archasia Design Group. It was awarded as a green building on the merit of external glazing with a coefficient of thermal transmittance (THT) smaller than 0.3 (Diamond Level) for its curtain wall, and was awarded Platinum Award of 2017 TIBA AWARDS – Taiwan Intelligent Green Building and System Product Awards.

- 1. It adopted TGI’s Low-E energy-saving insulating glass units with a 12mm space, effectively reducing heat and saving 45% of electricity cost for air conditioning compared with common glass.
- 2. The highest class safety in Asia: designed with the highest-profile structure, this building was piled to bedrock, installed two shock absorbers and the strongest curtain wall in Asia which can resist 16 Bft wind pressure to reduce building shake caused by strong gale and typhoon, providing the highest class safety.

股務記錄 Stock

年 Year	加權指數 Taix		股價 Stock Price		股利 Dividend	
	High	Low	High	Low	Cash	Stock
1973	514	225	38.60	25.20	1.00	2.00
1974	498	188	35.20	11.30	0.70	1.80
1975	429	190	28.30	13.60	0.70	1.80
1976	417	257	26.95	17.00	2.00	0.84
1977	450	313	27.65	17.30	0.80	1.70
1978	688	447	36.00	24.80	1.24	1.96
1979	659	502	35.40	24.40	2.072	1.428
1980	599	480	32.20	23.30	1.889	1.111
1981	600	502	27.70	20.50	0.50	1.50
1982	546	421	23.00	15.40	0.20	1.10
1983	765	434	38.20	17.10	0.72	1.48
1984	969	764	37.00	30.20	0.60	1.60
1985	840	636	33.10	20.30	—	1.40
1986	1039	839	40.10	31.70	—	1.60
1987	4673	1063	95.00	38.70	—	1.80
1988	8789	2341	125.00	58.50	—	1.80
1989	10773	4873	188.00	78.00	—	2.00
1990	12495	2560	144.00	36.90	—	1.80
1991	6305	3316	71.00	39.70	0.458	1.042
1992	5391	3327	47.50	28.00	0.35	1.00
1993	6070	3135	53.00	29.70	0.35	1.00
1994	7183	5194	65.00	41.70	0.35	1.50
1995	7051	4503	63.50	46.00	0.35	1.50
1996	6982	4690	67.50	47.50	—	1.903
1997	10116	6802	66.50	36.30	0.76	1.09
1998	9277	6251	44.90	30.30	1.35	—
1999	8608	5474	34.80	20.10	1.25	—
2000	10393	4555	39.80	22.00	0.80	0.81
2001	6104	3411	33.20	17.80	1.00	—
2002	6484	3846	29.10	17.60	0.30	0.70
2003	6182	4044	28.60	20.30	0.40	0.80
2004	7135	5255	33.00	24.30	0.50	1.00
2005	6600	5565	31.50	23.70	0.40	0.80
2006	7823	6232	30.40	21.60	0.24	0.96
2007	9859	7306	46.30	25.55	0.40	0.80
2008	9309	3955	41.55	13.30	0.20	0.30
2009	8188	4165	27.70	15.40	0.20	0.30
2010	8990	7072	38.50	24.60	0.60	1.00
2011	9220	6609	53.70	27.10	0.45	0.45
2012	8144	6895	37.30	23.75	0.10	—
2013	8647	7603	35.20	25.70	0.10	—
2014	9569	8264	33.50	21.00	—	—
2015	9973	7410	24.60	10.65	—	—
2016	9430	7627	16.05	11.15	—	—
2017	10854	9273	22.90	12.60	0.50	—
2018	11253	9478	23.60	12.75	0.30	—
2019	12122	10875	12.15	11.20	—	—
TOTAL	—	—	—	—	24.13	45.67

主要股東(2020-04)	
Major Shareholders	(%)
台豐投資股份有限公司	14.45
Tai Hong Investment Corp.	
合和投資股份有限公司	13.85
Ho Ho Investment Corp.	
台建投資股份有限公司	8.56
Tai Chien Investment Corp.	
台玉投資股份有限公司	8.44
Tai Yu Investment Corp.	
台成投資股份有限公司	7.85
Tai Cheng Investment Corp.	
台嘉投資股份有限公司	5.43
Tai Chia Investment Corp.	
富邦人壽保險股份有限公司	4.89
Fubon Life Insurance Corp.	
林建成嘉記股份有限公司	4.71
Lim Kien Seng Kah Kih Co. Ltd	
台玻職工退休基金管委會	1.35
TGI Retirement Fund.	
Total	69.53
股東總人數	45, 413 人
Total Shareholders	
總成交量	340,085,897 股
Transaction Volume	
員工總人數(2020-04)	台灣 4,803 人
Employees	大陸 9,089 人
	合計 13,892 人

決算日期: 2019年12月31日  
Fiscal Year Ends on December 31, 2019  
股東常會: 2020年06月05日  
General Shareholders' Meeting: June 5, 2020  
公告: 公開資訊觀測站  
Public Notice: <http://mops.twse.com.tw/mops/web/index>  
辦理過戶: 台灣玻璃工業公司 股務課  
Stock Transfer Registration: TGI Stock Affairs Div.  
會計師: 安永聯合會計師事務所  
C.P.A.: Ernst & Young



## 集團沿革 Taiwan Glass Group History

1964

1964

公司創立，資本額一億五千萬元  
Company established, capital NT\$150 million



1965

日本旭硝子株式會社平板玻璃技術合作  
Asahi, Japan for Sheet Glass TAA.



新竹廠破土典禮  
Hsinchu Factory Groundbreaking



1967

新竹平板廠投產  
TS Factory Sheet Glass Plant Production



1970

1970

美國WHEATON GLASS 容器玻璃技術合作  
Wheaton Glass PLC. USA for Container Glass TAA.



1972

台玻大樓落成  
TGI Building inaugurated



1973

台玻股票上市  
TGI Stock listed on Taiwan Stock Exchange

1974

英國PILKINGTON PLC. 色板玻璃技術合作  
Pilkington PLC. UK for Tinted Glass TAA.



1977

德國VEBA GLASS AG. 食器玻璃技術合作  
Veba Glass Ag. Germany for Tableware Glass TAA.

1980

1980

英國PILKINGTON PLC. 平板浮法玻璃技術合作  
Pilkington PLC. UK for Float Glass TAA.

1983

台中平板浮法廠投產  
TF Factory Float Glass Plant Production

1987

美國OWENS CORNING FIBERGLASS CORP. 玻璃纖維技術合作  
Owens Corning Fiberglass Corp. USA for Fiberglass Reinforced TAA.



1988

日本柴田株式會社耐熱玻璃技術合作  
Sibata Hario, Ltd. Japan for Heat-Resistant Glass TAA.

日本鐘紡株式會社玻璃纖維布技術合作  
Kanebo, Ltd. Japan for Fiberglass Fabric Glass TAA.



1989

二十五週年慶 25<sup>th</sup> Anniversary



1990

1990

桃園玻璃纖維布及玻璃纖維廠投產  
TT Factory Fiberglass Fabric & Fiberglass Reinforced Plant Production

1992

創辦人大陸考察  
Founder Lin, business visit to China

1993

台灣玻璃中國控股公司創立  
Taiwan Glass China Holding Ltd. Established

1994

德國HERMANN HEYE 容器玻璃技術合作  
Hermann Heye, Germany for Container Glass TAA.

三十週年慶 30<sup>th</sup> Anniversary



青島廠建廠 QFG Construction



集團沿革 Taiwan Glass Group History

1995

日本石塚硝子株式會社食器玻璃技術合作  
Ishizuka Glass Co., Ltd. Japan for Tableware TAA.

台中、桃園、新竹三廠ISO-9002認證通過  
TF, TT, TS, Factory ISO-9002 Certification

青島浮法玻璃有限公司投產  
Qingdao Float Glass Co., Ltd. Plant Production



2001

桃園、新竹、台中、鹿港四廠ISO-14001認證通過  
TT, TS, TF, TL, Factory ISO-14001 Certification

創辦人榮獲第32屆全球玻璃工業鳳凰獎(美國)  
Founder Lin, Awarded with the Phoenix Award (USA)



1997

創辦人訪問北京 Founder Lin, Beijing visit



1998

台玻長江玻璃有限公司投產  
TG Changjiang Glass Co., Ltd. Plant Production

鹿港玻璃纖維布廠投產  
TL Factory Fiberglass Fabric Plant Production

2000

台中廠引進雙銀輻射玻璃技術  
Taichung Factory Double Low - E Glass Coating Technology

2004

台玻長江玻璃有限公司CFG-2投產  
TG Changjiang Glass Co., Ltd. CFG-2 Plant Production

台嘉玻璃纖維有限公司投產  
Taichia Glass Fiber Co., Ltd. Plant Production

台玻東海玻璃有限公司投產  
TG Donghai Glass Co., Ltd. Plant Production

台玻成都玻璃有限公司投產  
TG Chengdu Glass Co., Ltd. Plant Production

四十週年慶 40<sup>th</sup> Anniversary



2005

台玻華南玻璃有限公司投產  
TG Huanan Glass Co., Ltd. Plant Production



2006

台嘉玻璃纖維有限公司TGF-2投產  
Taichia Glass Fiber Co., Ltd. TGF-2 Plant Production

台玻昆山玻璃有限公司CFG-3投產  
TG Kunshan Glass Co., Ltd. CFG-3 Plant Production

台玻天津玻璃有限公司投產  
TG Tianjin Glass Co., Ltd. Plant Production

鹿港平板廠TF-4投產  
TL Factory TF-4 Flat Glass Plant Production

2007

台嘉玻璃纖維有限公司TGF-3投產  
Taichia Glass Fiber Co., Ltd. TGF-3 Plant Production

2008

台玻成都玻璃有限公司CDG-2投產  
TG Chengdu Glass Co., Ltd. CDG-2 Plant Production

台玻華南玻璃有限公司HNG-2投產  
TG Huanan Glass Co., Ltd. HNG-2 Plant Production



2009

台嘉玻璃纖維有限公司TGF-4投產  
Taichia Glass Fiber Co., Ltd. TGF-4 Plant Production



2009

新竹廠TS-7壓花窯改建容器窯  
Hsinchu Factory TS-7 Rolled Glass Furnace Rebuilding to Container Glass Furnace

桃園廠TT-1擴建FRP  
Taoyuan Factory TT-1 Fiberglass Reinforced Furnace Rebuilding & Expansion

彰濱廠引進最新低輻射玻璃鍍膜技術  
Changpin Factory New Low-E Glass Coating Technology

台玻福建光伏玻璃有限公司動土  
TG Fujian Photovoltaic Glass Co., Ltd. Established & Groundbreaking



## 集團沿革 Taiwan Glass Group History

2010

2010 台玻悅達汽車玻璃有限公司創立  
TG Yueda Autoglass Co., Ltd. Established



◆ 台玻太倉工程玻璃有限公司創立及動土  
TG Taicang Architectural Glass Co., Ltd.  
Established & Groundbreaking

◆ 台玻咸陽玻璃有限公司創立  
TG Xianyang Glass Co., Ltd. Established

◆ 台玻安徽玻璃有限公司創立  
TG Anhui Glass Co., Ltd. Established

◆ 台玻武漢工程玻璃有限公司創立  
TG Wuhan Architectural Glass Co., Ltd. Established

◆ 台玻福建光伏玻璃有限公司投產  
TG Fujian Photovoltaic Glass Co., Ltd.  
Plant Production



2011

2011 彰濱廠投產  
Changpin Factory Plant Production

◆ 新竹廠ISO-22000認證通過  
TS Factory ISO-22000 Certification

◆ 台玻悅達太陽能鏡板有限公司創立  
TG Yueda Solar Mirror Co., Ltd Established

◆ 台嘉成都玻纖有限公司動土  
Taichia Chengdu Glass Fiber Co., Ltd.  
Groundbreaking



◆ 台玻安徽玻璃有限公司動土  
TG Anhui Glass Co., Ltd. Groundbreaking

◆ 台玻武漢工程玻璃有限公司動土  
TG Wuhan Architectural Glass Co., Ltd.  
Groundbreaking

◆ 台玻東元真空節能玻璃股份有限公司創立  
TG Tecu Vacuum Insulated Glass Corp.  
Established

2013

2013 台玻咸陽玻璃有限公司烘窯投產  
TG Xianyang Glass Co., Ltd. Plant Production



◆ 台玻安徽玻璃有限公司烘窯投產  
TG Anhui Glass Co., Ltd. Plant Production



◆ 新竹廠TS-10耐熱容器窯 / TS-11耐熱食器窯投產  
Hsinchu Factory TS-10 / TS-11 Production

◆ 台玻東海玻璃有限公司DHG-2投產  
TG Donghai Glass Co., Ltd. DHG-2  
Plant Production

◆ 實聯化工江蘇有限公司投產  
Shihlien Chemical Industrial Jiangsu Co., Ltd.  
Plant Production



◆ 台玻悅達汽車玻璃有限公司投產  
TG Yueda Autoglass Co., Ltd. Plant  
Production



2012 台玻華南玻璃有限公司  
低輻射鍍膜玻璃生產線投產  
TG Huanan Glass Co., Ltd.  
Low-E Glass Production

◆ 台玻太倉工程玻璃有限公司  
低輻射鍍膜玻璃生產線投產  
TG Taicang Architectural Glass Co., Ltd.  
Low-E Glass Production

◆ 台玻武漢工程玻璃有限公司  
低輻射鍍膜玻璃生產線投產  
TG Wuhan Architectural Glass Co., Ltd.  
Low-E Glass Production

集團沿革 Taiwan Glass Group History

2014

◆

2014

台玻東海玻璃有限公司DHG-3投產  
TG Donghai Glass Co., Ltd. DHG-3  
Plant Production

◆

台玻集團創業五十週年  
50<sup>th</sup> Anniversary of TG





◆

台玻東元真空節能玻璃股份有限公司投產  
TG Teco Vacuum Insulated Glass Corp.  
Plant Production

◆

台中廠TF-5微薄玻璃投產  
Taichung Factory TF-5 Ultra-Thin Glass  
Production

◆

2015

台玻悅達太陽能鏡板有限公司投產  
TG Yueda Solar Mirror Co., Ltd Established.  
Plant Production

◆

台嘉成都玻纖有限公司投產  
Taichia Chengdu Glass Fiber Co., Ltd.  
Production

2019

◆

2019

台嘉蚌埠玻璃纖維公司投產  
Taichia Bengbu Glass Fiber Co., Ltd.  
Production



◆

林伯豐董事長榮獲日本政府頒贈  
「旭日重光章」  
Chairman Lin Por-Fong Conferred with The  
Order of the Rising Sun by the Japanese  
Government





2020



TAIWAN GLASS GROUP

台玻集團

[www.taiwanglass.com](http://www.taiwanglass.com)  
[www.taiwanglassgroup.cn](http://www.taiwanglassgroup.cn)

2020060800