

Glass-Technology International

January/February
Year 22 - No. 1/2011

THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY

LISEC
REVOLUTIONIZING
LAMINATING TECHNOLOGY

IDROTECNICA
ENHANCED AND FACILITATED
USE OF REVERSE
OSMOSIS DEMINERALIZERS

C.R. LAURENCE
CONTINUOUS GROWTH
AND IMPROVEMENT

ZHIJIANG
SPECIALISTS IN SEALANTS
GO FOR INTERNATIONAL
EXPANSION

RITEC
LOW MAINTENANCE
SURFACE TECHNOLOGIES

TROSIFOL
DEVELOPMENTS
IN TECHNOLOGY AND
USES OF PVB FILMS

Issue distributed at:

GULF GLASS
ABU DHABI UAE / 7-9 March

**ISTANBUL
GLASS WINDOW**
ISTANBUL Turkey / 10-13 March

**GLASS-TECH
POLAND**
KIELCE Poland / 15-17 April

Cugherglass

love at first sight

For over 40 years we engineer and realize solutions and equipments to suit your requirements for the safe printing, curing and handling of flat glass.
It's easy to get a feeling with us.

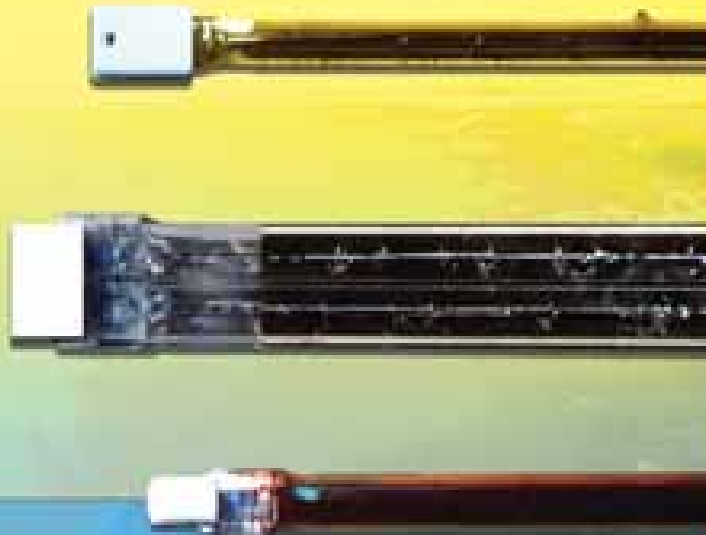


www.cugherglass.com
info@cugherglass.com
Phone: +39 030 2002710

HELIOS ITALQUARTZ FOR THE GLASS INDUSTRY

QUARTZ IR EMITTERS

Short and medium wave, mono and twin tube, with or without gold-coated reflector. Utilized for: glass tempering, annealing, bending, plastic film coupling and screen printing, float glass and mirror processing for any oven range.



AUTOMATIC TIN - DETECTOR

It is the technological development of the Manwood 25 - N. It can be fixed directly on the glass transportation line before the process starts in order to check every piece of glass. Thanks to the simplicity of the installation and its great flexibility it is suited for the mass manufacturing where the methodological control is essential to support the rate of production.

MANWOOD 25 - N

UV black light apparatus, able to identify the tinned coated side of the float glass even under high brightness conditions. Such identification is very important before the laminating, mirroring, printing and decorating processes.



UV POLYMERIZATION EQUIPMENT

With UV medium pressure lamps for enamelling, drying screen printing UV reactive inks, paints, coatings and adhesives for the decorating and furnishing sector.



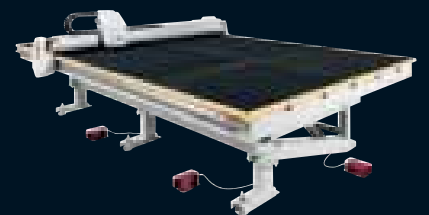
Viale della Industria, 102/A
20048 - Cambiago - MI - Italia
Tel. +39.02.89.34.93.18 Fax. +39.02.95.34.99.81
Web: www.heliositalquartz.com
E-mail: helios@heliositalquartz.com



The new benchmark for cutting tables

Genius 37-61 CT are the machines that redefine the standards of NC cutting tables used for monolithic glass. Replacing the traditional NC with a commercial PC has set these tables as the new standard for cutting systems thanks to the easy intuitive human-machine interface and the possibility to integrate the machine management in the company network for the transfer of data.

Intermac is a brand of Biesse Group.



HAVEN'T YOU BOUGHT A
SANDBLASTER IN 2010?
NO PROBLEM!



**FRATELLI PEZZA
EXTENDS
FOR 2011 ITS**

**4
YEARS PART
WARRANTY**

FPE
FRATELLI PEZZA



90 sparkling years

1921 - 2011

Ninety stimulating years, passed going from one success to another, in constant progress, but which have, in fact, passed. **Four generations** have followed in each other's footsteps at the head of the Moreschi Group since Vincenzo Moreschi built the first factory in Bologna and began making the first diamond-head tools for glass.

And yet the enthusiasm and energy of the beginnings have remained intact, along with the desire to face with spirit the difficulties of the market and achieve increasingly new heights, first and foremost in resinoid grinding wheels. To date, Mole Moreschi is still a leader in the production of a vast range of traditional and special tools for the glass industry.

Our new products, **ALL ENTIRELY ITALIAN MADE**, following the strictest standards, and the constant attention toward our customers' needs, make Mole Moreschi the ideal partner for always delivering optimum and customised answers and solutions.

True
Know-how
in glass performance
www.molemoreschi.com

MoleMoreschi
DiamondWheels

via Palazzetti, 5
40068 S. Lazzaro di Savena (BO)
tel. +39.051.6255919 fax +39.051.6255952
info@molemoreschi.com



MEN AT WORK ON RESEARCH AND INNOVATION



ZAFFERANI GLAS

GLASS WORKING MACHINES

**FOR 60 YEARS
SIMPLE AND RELIABLE
GLASS PROCESSING MACHINERY**

ELECTRONIC STRAIGHT-LINE EDGING MACHINES FOR FLAT EDGE AND MITRES FROM 0° TO 60° AND 4 TO 10 WHEELS

ELECTRONIC STRAIGHT-LINE BEVELLING MACHINES WITH 5 OR 7 WHEELS WITH ANGLE ADJUSTMENT FROM 3° TO 45°

STRAIGHT-LINE PERIPHERAL EDGING MACHINES WITH 2-4-6 GRINDING WHEELS FOR ROUND, FLAT EDGE AND OG

SHAPE BEVELLERS AND EDGERS

DOUBLE HEADED DRILLING MACHINES

AFTER GRINDING VERTICAL WASHERS FROM 3 TO 19 MM THICKNESS

VERTICAL WASHING MACHINES FOR DOUBLE GLAZING FROM 1.3M UP TO 2.5 M

CENTRIFUGAL SEPARATORS FOR GLASS POWDER REMOVAL FOR EDGERS, BEVELLERS AND CNC



CENTRIFUGAL SEPARATOR

NEW

ELIMINATE GLASS POWDER CONTAMINATION

Zafferani Glas s.r.l.

Via Conforti, n. 2 - 16147 Genova - Italy
Tel +39 010.3993.776/682 Fax +39 010.381718
www.zafferani.com - info@zafferani.com

SINCE 1950



FOR YOUR EYES ONLY



Did you not get chance to visit our stand at glasstec 2010? Well while that is a shame, we are pleased to say that you have not missed out as we would like to show you the reasons why our new high-speed sealing robot **speed'sealer** is so unique.

Just give us a call: +49 (0)7234-601-0 or visit our website.

www.bystronic-glass.com/speedsealer



**COSTRUZIONI
MECCANICHE
BESANA**



CNC VERTICAL DRILL VD 2H-220



**PERFECT
COMBINATION**



**CNC VERTICAL DRILL
4 HEAD**

**CNC VERTICAL GRINDING AND SEAMING
MACHINE FOR RECTANGULAR AND
SHAPED GLASS SHEETS**



COSTRUZIONI MECCANICHE BESANA S.p.A.
Plant: Strada Comunale Membello - 21100 Cremona (CR) - Italy
Tel. +39 0302 828200 - Fax +39 0302 828240
Office: via Appiani, 9 - 20121 Milano -
Tel. +39 02 8554888 - Fax +39 02 8556478
e-mail: info@cmbesana.com - cmbesana@tin.it - www.cmbesana.com



© S.A. Branch **BESANA LOWRI** Inc.
2075 Young Street, Windsor, Ontario N9C 2T1 Canada
Tel. +1 519 756-0104 - Fax +1 519 756-7194
e-mail: info@lowri.com - www.lowri.com
West Coast: Tel. +1 602 488-2807 - Fax +1 602 488-1975

Enterprise Designed for Glass.

**THE FIRST ITALIAN
ERP APPLICATION DESIGNED
TO MANAGE ALL GLAZIERY ACTIVITIES**

Since its foundation in 1994,
Optima has been providing its end customers
with the best possible solutions thanks to the use
of high-level software development
and implementation technologies.
Quality is guaranteed by direct contacts
with machine manufacturers and the expertise
of highly-qualified consultants and technicians.



Customer Quotations & Orders
Customizable and flexible Sales Price Lists & Contracts,
specifically created for the Glass Industry
Full support for special glass features: Customer minimums and multiples,
size, shape and job surcharges
Calculation of glazing heat and light properties
Customizable data search systems
Module to generate Reports & Labels
Issuing of Transport Documents
Issuing of Invoices and Credit Notes
Data export to accounting system via XML and other formats on demand



OPTIMA
Software
www.optima.it

Optima S.r.l.

Via A. Vespucci, 4 - 40017 - San Giovanni in Persiceto (Bologna) - Italy
Tel. +39 051 826336 - Fax: +39 051 825182 - e-mail: info@optima.it

OPTIMA SOFTWARE TECHNOLOGIES

- Develop ten series, hundreds of models furnaces
- Flexible configuration of Jet-heating convection technology with radiation heating technology according to customers' needs
- Own 86 national patents, 10 international patents of invention
- Pass ISO9001 Quality System, get CE and UL and AS certificates
- No.1 world market share of the forced convection furnace, export to 40 some countries and regions

Make Life Safer and Better!

China Glass 2011
W2-161#, New International Expo Center
Shanghai, China
May 11-14, 2011



Add: Guangjian Building, No. 12, Wangcheng Road, Luoyang 471000, China
Tel: +86-379-65298883 Fax: +86-379-63910869 E-mail: marketing@landglass.com

www.landglass.net

LandGlass

International Leader in Glass Processing Technology



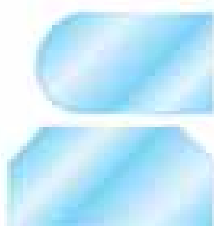
SKG S.r.l.
Via Egidio Gregori, 2
38015 Schio (VI) - Italy
Tel: +39 - 0445 - 500202
Fax: +39 - 0445 - 500203
E-mail: info@skillglass.it
www.skillglass.it

Skill E-D

EDGING & DRILLING



8 AXIS VERTICAL MACHINING CENTRE FOR GRINDING, MILLING, DRILLING,
AND POLISHING FLAT OR SHAPED SHEET GLASS



Skillsfill

VERTICAL GRINDING MACHINE



AUTOMATIC VERTICAL NINE-AXES GRINDER
FOR STRAIGHT AND SHAPED GLASS

SkillDrill

VERTICAL DRILLING MACHINE



AUTOMATIC SIX-AXES VERTICAL DRILL
FOR DRILLING, MILLING, BEVELLING AND POLISHING OF FLAT GLASS

Pujol

Since 1911
No limits in glass creation

100 years of Innovation, Development and Leadership

100
years

Hornos Pujol is celebrating its 100 anniversary. Our history has been built by 100 years of experience, strength, adaptability and the ability to continuously innovate. Today we are able to develop the more advanced technology to offer our customers global solutions that enable them to gain competitiveness, reliability, and leadership in their markets.

Today, 100 years later, we are still a young team, committed, highly trained and specialized that allows us to compete globally and lead the world market in laminating technology and applications on glass with a high added-value.

Evalam

Leaders in laminating and glass applications .

AB-AR

Impact test maximum resistance and penetration performance, higher than PVB.

Laminate Assembly & preparing plants.

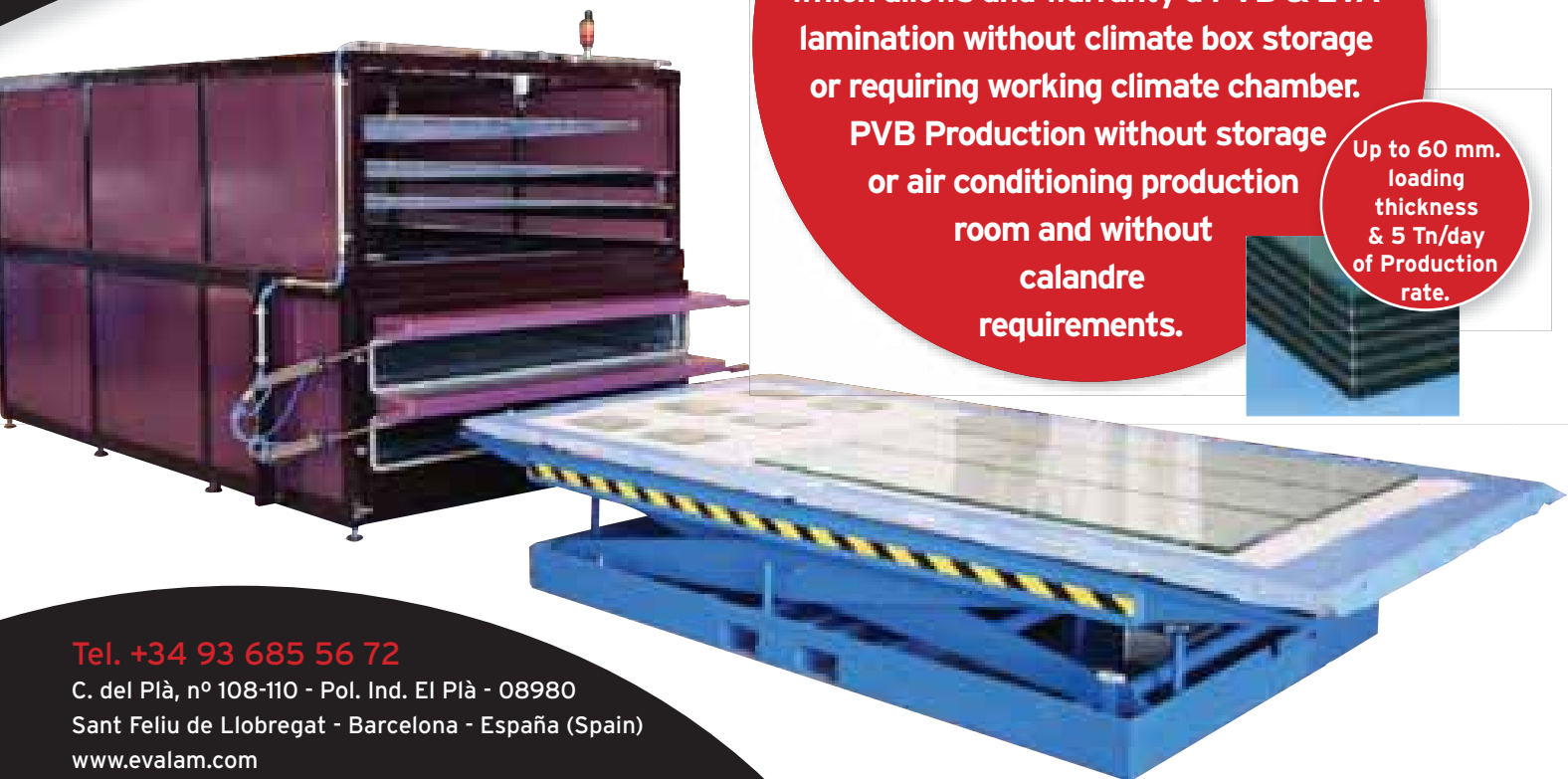
EVA Industrial Ovens.

System PUJOL-100

The Only system in the market
which allows and warranty a PVB & EVA
lamination without climate box storage
or requiring working climate chamber.

PVB Production without storage
or air conditioning production
room and without
calandre
requirements.

Up to 60 mm.
loading
thickness
& 5 Tn/day
of Production
rate.



Tel. +34 93 685 56 72

C. del Plà, nº 108-110 - Pol. Ind. El Plà - 08980

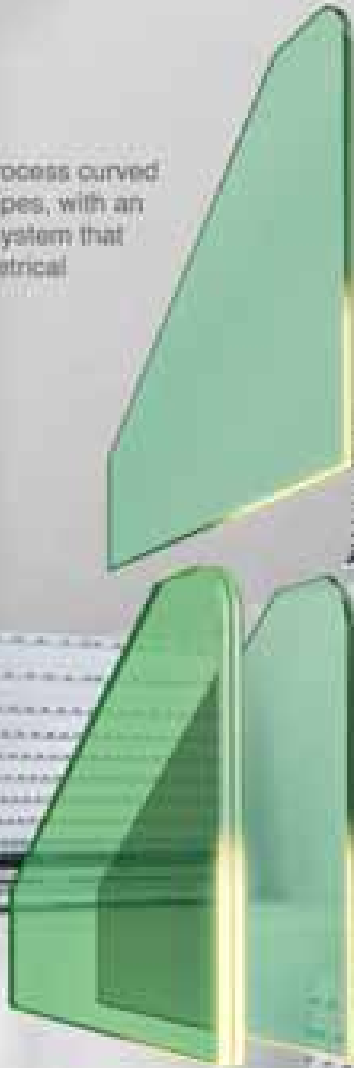
Sant Feliu de Llobregat - Barcelona - España (Spain)

www.evalam.com

LEADS THE WAY IN VERTICAL GLASS PROCESSING

ARRISSING

Twin heads that process curved and rectilinear shapes, with an exclusive control system that guarantees symmetrical results

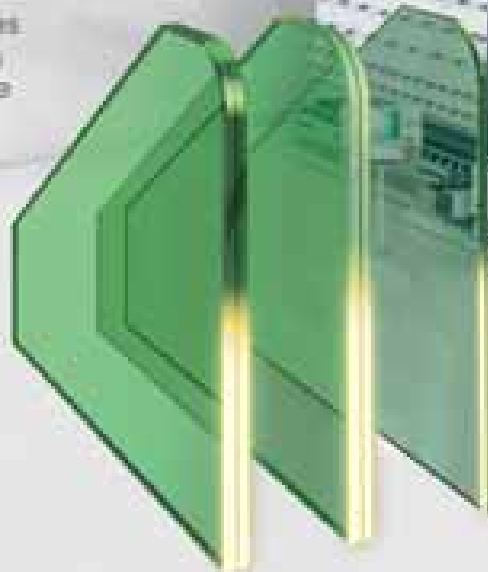


ARRISSING AND GRINDING

Two heads that process curved and rectilinear shapes, with an exclusive control system that guarantees symmetrical results with both heads tooled for edge grinding and seaming

ARRISSING GRINDING AND POLISHING

Single head device that processes curved and rectilinear shapes via an exclusive clamping system the multi positioned tool post can arri, grind, polish and square



Glass-Technology International

Year 22 • No. 1 (119)
January/February
is published every two months by

ARTENERGY PUBLISHING
S.R.L.

EDITORIAL AND ADVERTISING OFFICE

Via Antonio Gramsci, 57
20032 Cormano (Milano) - Italy
Tel.: +39 - 02 - 66306866
Fax: +39 - 02 - 66305510
E-mail publications@glassonline.com
Website www.glassonline.com

PUBLISHER/EDITOR-IN-CHIEF

Marco Pinetti
marco.pinetti@glassonline.com

ASSOCIATE EDITOR

Valerie Anne Scott
valerie.scott@glassonline.com

ADVERTISING

Italy
Maurizio Lozza
maurizio.lozza@glassonline.com

Worldwide
Luciano Molina
luciano.molina@glassonline.com

GRAPHIC DEPARTMENT

Sonia Previato
sonia.previato@glassonline.com
Elisabetta Turani
betty.turani@glassonline.com

SUBSCRIPTIONS

Magazines
Elisa Ronchi
publications@glassonline.com
glassonline.com
Barbara Maresca
services@glassonline.com

PRINTED BY

FABIANO GROUP Srl
Reg. San Giovanni 40
14053 Canelli (AT) - Italy


BACK COPIES

€ 29 air mail included; Italy: € 15

Entire contents © 2011 by ARTENERGY PUBLISHING S.r.l.
All rights reserved. Reproduction even partially in any form is strictly prohibited unless written permission has first been obtained from the Publisher. The magazine is open to collaboration from all, but no manuscripts or photographs will be returned. The editor's office does not accept responsibility for opinions expressed in signed articles.

The Court responsible is Milan. Publication registered at no. 208 of the Milan Court Records Office on 24.3.1990

ISSN 1126-8573

MEMBER OF:  CONFEDERATION OF ITALIAN INDUSTRY

Glass-Technology International, n.119, anno 22, 2011, Dir. Resp. Marco Pinetti
Spedizione in abbonamento postale/45% - Milano - Periodico bimestrale.

articles

36 DEVELOPMENTS

LISEC: revolutionizing laminating technology

LISEC COSTRUZIONE
MACCHINE ITALIA



articles

41 MACHINERY

Idrotecnica: enhanced and facilitated use of reverse osmosis demineralizers



46 COMPANY UPDATE

C.R. Laurence: continuous growth and improvement

C.R. LAURENCE CO., INC.



58 COMPANY PRESENTATION

Zhijiang: specialists in sealants go for international expansion



features

regular

12 ADVERTISERS INDEX &
COMPANIES MENTIONED

14 OUR FAIRS CALENDAR 2011

16 BUSINESS NEWS

28 PRODUCT NEWS

78 SUPPLIERS GUIDE &
YELLOW PAGES

86 SUBSCRIPTION SERVICE

63 COMPANY PRODUCTS

Ritec: **low maintenance surface technologies**

RITEC INTERNATIONAL

67 ENERGY SAVINGS

Trosifol: **developments in technology
and uses of PVB films**

TROSIFOL: DEVELOPMENTS IN TECHNOLOGY AND USES OF PVB FILMS

72 EVENTS

China Glass: **global glass circles
meet again in Shanghai**



COVER ADVERTISER



CUGHER GLASS SRL

Via Fano, 1 - 20161 Milano (MI) - Italy

Tel: +39 - 02 - 66207762

Fax: +39 - 02 - 66202917

E-mail: info@cugherglass.com

www.cugherglass.com

THIS ISSUE WILL BE DISTRIBUTED AT:

Abu Dhabi, UAE
Gulf Glass
7-9 March

Istanbul, Turkey
Istanbul Glass Window
10-13 March

Kielce, Poland
Glass-Tech Poland
15-17 April

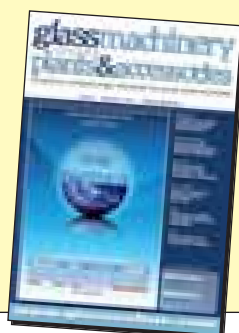
All companies mentioned

...in this issue of *Glass-Technology International*. Advertisers are indicated in bold.

Company Name	Page no.	Company Name	Page no.	Company Name	Page no.
A		Glass-Tech Poland	50	P	
AGI	25	Glasspex India	51	Pilkington	26, 52
Argotec	28	glasstec 2010	29, 51, 56, 59, 63, 70, 77	Pujol Hornos Industr.	8, 78-85
Ashton Industrial	18	Glasstec Vidros de Seguranca	16	PV Technology	79
Automobile Glass	18	Glasstec Viracon	16	PVTech	45
B		Glasstech Asia	82	Q	
B.H.T.	78-85, 88	Glaston	25, 53	Quanex Building Products	20
Bando Kiko	19, 78-85	GPD - Glass Performance Days	51, 71	R	
Bassra Machine Tools	51	Grenzebach	51	Ritec	63-66
Beneq	56	Guardian	18, 24	Romag	26
Blumcraft of Pittsburgh	49	Gujarat Borosil	24, 51	S	
Bohle	23	Gulf Glass	34	Safelite Auto Glass	18
Bottero	51	H		Sage Electrochromics	22
Bystronic glass	3, 31, 78-85	Hangzhou Zhijiang Silicon Selants	58-61	Saint-Gobain	22, 51
C		Hannstar	27	Saint-Gobain SEFPRO	51
C.M.B. Besana	4, 78-85	Helios Italquartz	Front inside cover, 78-85	Schott Solar	24
C.R. Laurence	46-49, 53	Hindustan National Glass	51	Sezal Glass	53, 55
Cebrace Cristal Plano	51	I		Shamvik Glasstech	51
Central Glass	51	IAG	51	Shanghai Yaohua Pilkington	22
China Architectural and Industrial Glass Association	16	Idrotecnica	41-44	Sisecam	27
China Glass	72-76, 77	Intermac	78-85, Back inside cover	SKG - Skill Glass	7, 78-85
China Glass Holdings	55	Istanbul Glass Window	54, 55	Solarpraxis	51
CMS Brembana	13, 78-85	Italcarrrelli	29	Sommer & Maca	47
Consolidated Glass & Mirror	24	J		Sparklite	20, 32
Creative Mirror & Shower	18	Jackson Manufacturing	49	T	
Cugher Glass	Front cover, 78-85	K		Techno Trade Links	51
CUMI	51	K-bond	51	Trosifol	67-70
D		L		V	
Den Breven	51	Landglass Technology	6, 23, 78-85	Verity Instruments	32
DSF Refractories	51	Lisec	35, 36-40, 78-85	Vitrum	56, 57
E		M		Viracon	16
Edgetech	20, 53	Mappi International	33	Viridian	25
Edgetech Europe	21, 23, 25, 32, 78-85	Maverick Auto Glass	18	Vitrododi International	49
Elite/GlasPro	18	Mingte Glass Tech.	17, 78-85	Y	
Emhart	51	Mir Stekla	62	Yaohua Glass Plant	22
EnerSolar	30	Mistrello Officine	15, 78-85	Z	
F		Mole Moreschi	First page, 78-85	Zafferani Glas	2, 78-85
First Solar	26	N		Zeledyne	51
For.El.	9, 78-85	NSG	51, 56	Zippe	51
Fratelli Pezza	78-85, Back cover	O			
Fushan	27, 78-85	Optima	5, 78-85		
G					
Glass Options	18				

GLASS MACHINERY PLANTS & ACCESSORIES

Is the leading international magazine for the production and processing of hollowware and special glass (bottles, containers, household, lighting, technical, scientific, industrial and medical glassware) and fiberglass.



glassmachinery
world
plants & accessories

BI-MONTHLY INTERNATIONAL MAGAZINE FOR GLASS MANUFACTURING

For subscription and advertising rates, please contact Artenergy Publishing
Tel. +39-02-66306866 • Fax +39-02-66305510
E-mail: publications@glassonline.com - www.glassonline.com

productivity flexibility quality

glass perfection

machines and solutions

your
glass
vision

CMS **Brembana**

glass technology

CMS **Tecnocut**
waterjet technology

CNC



VERTICAL DRILLING & CNC



CUTTING



DOUBLE EDGERS



WATERJET



issue	exhibition/conference	date	venue	insert
2011 1 Publication date: 4 FEBRUARY	GULF GLASS	7-9 March	ABU DHABI UAE	
	ISTANBUL WINDOW 2011	10-13 March	ISTANBUL Turkey	
	GLASS-TECH POLAND	15-17 April	KIELCE Poland	
2011 2 Publication date: 7 APRIL	CHINA GLASS	11-14 May	SHANGHAI China	
	CHINESE SUPPLIERS GUIDE / YELLOW PAGES RESERVED FOR ADVERTISERS OF THIS ISSUE			
2011 3 Publication date: 2 MAY	CONSTRUMAT	16-21 May	BARCELONA Spain	
	MIR STEKLA	6-9 June	MOSCOW Russia	
	RUSSIAN SUPPLIERS GUIDE / YELLOW PAGES RESERVED FOR ADVERTISERS OF THIS ISSUE			
2011 4 Publication date: 25 JULY	GPD - GLASS PERFORMANCE DAYS	17-20 June	TAMPERE Finland	
	GLASSBUILD AMERICA	12-14 September	ATLANTA (GA) USA	
2011 5 Publication date: 26 SEPTEMBER	GLASSEX@ INTERBUILD	16-19 October	BIRMINGHAM UK	
	VITRUM	26-29 October	MILAN Italy	
ALL VITRUM EXHIBITORS WHO ADVERTISE IN THIS ISSUE WILL ALSO RECEIVE A FREE FULL PAGE VITRUM PREVIEW				
2011 6 Publication date: 24 OCTOBER	PVTECH 2011	16-19 November	MILAN Italy	
	GLASSTECH ASIA	23-25 November	JAKARTA Indonesia	
	ZAK GLASS TECHNOLOGY	8-11 December	MUMBAI India	
THIS ISSUE WILL ALSO PRESENT THE AGENTS WORLD GUIDE 2012, 17 TH EDITION				



NEW

ReStore

NEW AUTOMATED
LOGISTICS - WITHOUT
WORRYING ABOUT
LEFT-OVER GLASS



w w w . m i s t r e l l o . c o m

CLASSIFIERS / RACKS

LOADERS / UNLOADERS

UNLOADING FRAMES

BRIDGE STOCK SELECTORS

NEW

ReStore

OFFICINE MISTRELLO Srl



Via Dell'Artigiano 13 - 35040


PONSO (PD) - Italy

Tel.: +39.429.95046 - Fax:

+39.429.657825

E-mail: info@mistrello.it

VIRACON acquisition of leading Brazilian architectural glass fabricator


 **Viracon, Inc.**, North America's leading architectural glass fabricator, announces an expansion into Brazil and Latin America, acquiring 100% of the stock of *Glassec Vidros de Seguranca Ltda*, Brazil's leading architectural glass fabricator. Glassec will become part of Viracon and be called *Glassec Viracon*.

"Glassec has built a tremendous business in Brazil, and its business strategy aligns closely with that of Viracon - serving complex commercial projects with high-quality, energy-efficient glass," says Greg Silvestri, Viracon's president. "We look forward to working with the Glassec team to learn more about this key emerging market and help bring Viracon's capabilities to these markets."

Founded in 1991, Glassec has become Brazil's leading architectural glass fabricator and is known for its high-quality glass fabrication, on-time deliveries and strong technical support. The company's 100,000 square-foot fabrication facility is located 90 minutes outside of São Paulo, Brazil and has 250 employees.

CHINA ARCHITECTURAL AND INDUSTRIAL GLASS ASSOCIATION

funds for glass project

 The **China Architectural and Industrial Glass Association** has announced that it intends to resume construction of a USD 20 million glass manufacturing plant in Kadoma, Mashonaland West, Zimbabwe.

The project was previously started in 2003, and was abandoned due to hyperinflation. Company vice director Wang Changlin said that the company had invested USD 13 million into the project until now, which is expected to employ 200 people.


"The next step is for us to ship equipment into Zimbabwe and then commence production of glass," Changlin said.

"We're pleased to join a financially strong, global leader in glass fabrication," said Dario Farhat, general manager of Glassec Viracon. "We are looking forward to capitalizing on the synergies of the two companies and drawing on Viracon's expertise to better serve our customers, and expand our market share in Brazil and Latin America. In addition, joining the Viracon family will provide more opportunities for our employees and our customers."

The existing management team will continue to lead the company with Dario Farhat reporting to Greg Silvestri.

Viracon has pursued an aggressive international strategy in recent years and currently has a growing presence in Asia, Australia and the Middle East. The company recently won the Minnesota Governor's International Trade Award for its excellence in international business.

INDIA growth in real estate to boost glass industry

 The Glass Industry in India 2010 report from Netscribes (India) Pvt. Ltd. begins with an introduction to the glass industry, including an overview of the global glass market, per capita consumption of countries, total usage in volume among building and automotive segments. It further elaborates on the Indian glass market with indicative figures for market size and growth, information regarding the increasing per capita glass consumption and market segmentation.

The report also provides a brief idea of the various glass segments widely used in the market, along with overall import and export of glass as well as the segmented share for major countries. An analysis of the drivers explains growth factors of glass, such as growth in income, increasing retail estate, growing use in the automotive industry, growing use in the packaging industry, glass used widely in solar products, glass used for energy conservation and its qualitative aspect.

Key challenges identified include import from China and the recyclability of glass. The report identifies key trends, including demand for value-added products - growing for basic glass - decorative glasses with digital print technology and glass manufacturers on an expansion spree. The competition section has a panorama of the players in the market, with information regarding their operational segments, business highlights and financials, providing an insight into the existing competitive scenario.



MOUNTAIN

Mingte Company, specialized in manufacturing first-grade glass processing machineries.
Main product scope: Flat/bent glass tempering machines, double-curvature glass tempering machines, flat, bent glass laminating production line, automatic mirror silvering line, CNC cutting machines..
The glass products made by such machineries can be fully as architectural glass, elevator glass, shower-room glass, auto glass (windscreen, sidelites, backlites, and skylight windows, etc.), and mirror glass.

Advanced Heating system

Very Low Energy Consumption

Simple but Robust Operation

Powerful Advanced Control System

Custom Machines Available



名特玻璃技术有限公司
MINGTE GLASS TECHNOLOGY CO.,LTD.

B-701#,3rdBldg,Tongyuan Garden No.427.

Zhongzhou Zhong Rd,Luoyang,P.R.China

Tel:+86-0379-63329288 Fax:+86-0379-63329381


E-mail:sales@mingteglass.com

Web:www.mingteglass.com

P.C.:471000

CREATIVE MIRROR & SHOWER


acquisition of glass and mirror specialist

 US **Creative Mirror & Shower** has reportedly acquired the assets of *Glass Options*, a custom glass and mirror specialist serving residential homeowners and upscale custom homebuilders. With immediate effect, the Glass Options showroom will be converted to a Creative Mirror & Shower showroom, open to both the retail public and builder/designer trade.

“We are proud to have former Glass Options owners, Tim and Victoria Gile, join the Creative Mirror & Shower 1-800-Showers network,” said Mark Pritikin, president, Creative Mirror & Shower.

GUARDIAN

Canada processing plant equipped

 **Guardian Industries** has announced that its new glass processing plant in Rexdale, Ontario, Canada, has been equipped with automated seaming and batching equipment from UK supplier *Ashton Industrial*.

The new plant incorporates high-speed seaming of random glass sizes, direct from the cutting line. During the seaming process, Seek&Find controls automatically locate the edges of the glass and register their dimensions. A programmable logic computer (PLC) then calculates the glass sizes compared to the furnace conveyor bed area and builds multiple-row batches for toughening. These batches then pass through an automated washer dryer. No contact is made with the upper glass surface and, therefore, coated glass remains untouched.

Acquisition of Automobile Glass Co.

Guardian Auto Glass LLC has acquired the assets of **Automobile Glass Co.**, based in Alpharetta, Atlanta. Automobile Glass has served customers in the area since 1933 and was one of the first mobile auto glass companies in Atlanta, according to a statement from Guardian. The company was sold to Harmon Auto Glass in 1991, but, in 2008, the former owners of the company, which still had rights to the name, started a new business under the original name, according to information from Guardian.

The new company will operate as *Guardian Auto*

Glass Atlanta, LLC and will continue to follow the Guardian Auto Glass’ business model.

Local owners/managers Mickey Eves and Peter Hicks will serve as vice presidents and managing partners of the new company. Both have extensive experience in Atlanta retail auto glass. Eves started with the original Automobile Glass in 1963 and led the sales growth of the company, while Hicks has worked as a qualified technician and store manager and will lead the operations of Guardian Auto Glass Atlanta. Guardian Auto Glass will be the majority owner of the new company.

Guardian Auto Glass was formed in October 2010 between Guardian Glass Company, a wholly owned subsidiary of Guardian Industries, and LRST LLC to manage and grow the retail auto glass business of Guardian.

Phoenix location opened

Guardian Auto Glass LLC has announced the formation and opening of *Guardian Auto Glass Phoenix, LLC*. The company has been formed using the local ownership/management model that Guardian Auto Glass is using extensively as it expands its footprint throughout the country. The company has also opened a similar locally owned store in the Atlanta area.

The Phoenix owner/management team has considerable local experience in the auto glass business, and in serving Phoenix area customers. The local owner/manager team consists of Brian Mustin, Bryan Ray, Jerry G. Ray, Jim and Jill Stouffer and Sabra Taylor. Their extensive experience in the area comes from positions at local auto glass firms including: Brian Mustin, in operations management with *Maverick Auto Glass* and *Safelite Auto Glass*; Bryan Ray, in sales with *Elite/GlasPro*; Jerry G. Ray, an account executive with *Elite/GlasPro* and *Safelite Auto Glass*; Jim Stouffer, a former managing partner with *Maverick Auto Glass*; Jill Stouffer, in sales with *Maverick Auto Glass*; and Sabra Taylor, an account executive with *Elite Auto Glass* and *Safelite Auto Glass*. Guardian Auto Glass will be the majority owner of the new company.

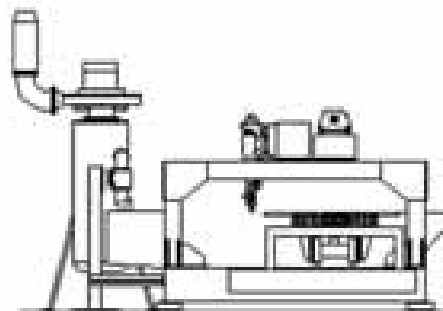
“This new operation consists of a superb team of local ownership and management and fits the core concept of our model which highlights local entrepreneurship and the ability to drive individual and corporate growth objectives,” said Jerry L. Ray, vice president of Guardian Auto Glass.

Guardian Auto Glass LLC was formed in October 2010 between Guardian Glass Company, a wholly owned subsidiary of Guardian Industries, and LRST, LLC to manage and grow the retail auto glass business of Guardian.

TOTAL SOLUTIONS FOR GLASS INDUSTRIES!



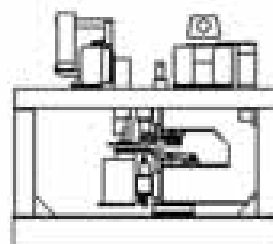
AUTOMOTIVE AND ARCHITECTURAL
LOADING SYSTEM
UNLOADING SYSTEM



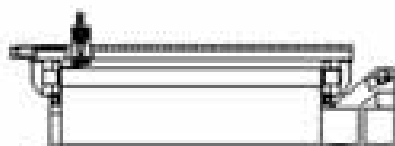
AUTOMOTIVE AND ARCHITECTURAL
CUTTING/BREAKOUT/GRINDING MACHINE
BEVELLING MACHINE



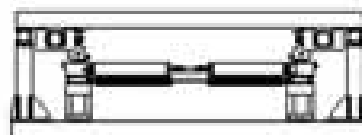
AUTOMOTIVE AND ARCHITECTURAL
STRAIGHT CUTTING MACHINE
SHAPE CUTTING MACHINE WITH EDGE DELETION DEVICE
WITH BREAKOUT DEVICE
DIAGONAL CUTTING MACHINE
LAMINATED GLASS CUTTING MACHINE



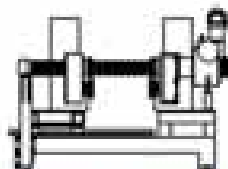
AUTOMOTIVE AND ARCHITECTURAL
DRILLING MACHINE



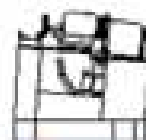
AUTOMOTIVE AND ARCHITECTURAL
WATERJET CUTTING MACHINE



AUTOMOTIVE LOW-E DELETION MACHINE



HIGH-TECH AND ARCHITECTURAL
DOUBLE EDGING MACHINE WITH CUTTING DEVICE
WITH BREAKOUT DEVICE



AUTOMOTIVE AND ARCHITECTURAL
STRAIGHT EDGING MACHINE
STRAIGHT BEVELLING MACHINE



ISO 9001 Certified



Tel.: +81-88-664-5280

Fax: +81-88-664-5282


2-4-60 Kanazawa, Tokushima 770-0871 - Japan

E-mail: global@bandoj.com

www.bandoj.com

EDGETECH

ISO9001:2008 Quality Standard

 Edgetech is pleased to announce its achievement of ISO9001:2008 International Quality Standard. Andy Jones, Edgetech's managing director explains: "We are the only dedicated manufacturer of Warm Edge Technology in the UK, which means we can offer our customers the benefits of dealing with a UK supplier. But ultimately it's the quality of the product that counts, and the fact we have received this standard for the design and manufacture of our Super Spacer product, reinforces our commitment to supplying the best quality products. ISO9001 covers all our processes, record keeping and ensures we are facilitating continuous improvement across the organization. As a company we place a lot of importance on supplying additional business, sales and marketing support, but as this standard proves, none of this is at the expense of the quality manufacture of our products."

Gasglass calibration services

Sparklike, Ltd. of Helsinki, Finland, recently re-confirmed Edgetech's processes and procedures for servicing *Gasglass* gas detectors, signifying that the company meets or exceeds the rigid requirements for proper calibration. Edgetech is the exclusive distributor of Gasglass in the Americas, Europe and Australia.

"Proper Gasglass calibration is a sophisticated process that includes data collection, analysis and sometimes intricate repairs," said Mike Burk, manager, workplace learning and performance. "Edgetech's employees undergo extensive training and follow specific procedures to ensure that our customers' devices are performing at optimal levels of accuracy."

Prior to calibration, Gasglass devices are thoroughly inspected and tested. The electronics, optics, mechanics and software are tested, upgraded and repaired, if required. Calibration begins by igniting the Gasglass device more than 270 times using nine calibration gases, while technicians record the spectrum of each spark. This data is then uploaded to Sparklike where an instrument-specific algorithm is developed and then downloaded back into the Gasglass device.

Edgetech has been a distributor of Sparklike's Gasglass and *Spyglass* products since early 2010.

Confidence following news of pending acquisition

Following the recent news that Edgetech will be acquired by *Quanex Building Products Corp.*, the management teams at both companies say they are confident about the merger of technology and expertise. Mike

Hovan, Edgetech's President comments: "Edgetech has seen substantial growth in its long history but we were aware that for this level of ambitious growth to continue, we would need increased capability from our parent organisation. With this in mind, Lauren International, the parent company of Edgetech, began looking for a buyer with the necessary resources and expertise. We were looking for somebody who has, frankly, the muscle to help grow the business to its full potential."

Quanex Building Products Corp Chairperson and CEO, David Petratis explains why the company wanted to acquire Edgetech: "Edgetech's involvement in the global insulating glass market, and its manufacturing facilities in the UK and Germany made the deal attractive for Quanex. The next step is for the acquisition to receive the customary governmental approvals. Our plans call for us to build on Edgetech's people and capabilities that we are gaining in this pending transaction. Some of the attractive elements of Edgetech are the strengths of its leadership and the people that make up its business."

Andy Jones, managing director for Edgetech UK and Europe GmbH adds: "Our employees worldwide have been notified of the pending acquisition by Quanex and the feedback from the teams has been positive. As you would expect, employees were a little nervous due to fear of the unknown, but once they heard who the new parent company would be and learned more about them, the mood has actually been extremely positive. Feedback from customers and suppliers alike has been very positive. I think they see the value of both companies, in what we both currently bring to the marketplace, and they inherently see the benefit of what we can collectively do and offer to our customer base."


Mike concludes: "Once you start looking at all of the potential opportunities from combining the technologies, people and expertise that both companies offer, particularly in energy efficient products, you come out with some very interesting potential in the future that will help our customers grow."

Quanex Building Products Corp. is a manufacturer of engineered materials, components and systems primarily serving the North American residential door and window market. Edgetech will be part of Quanex's Engineered Products Group.



click
here

CHINA almost 300% growth in price of auto glass

 Since 2009, and due to the increase in costs of raw materials and labour, prices of numerous products have risen in many industries. This can also be seen in the Chinese auto glass industry, which has to deal with great cost and market pressure.

With regards to manufacturing costs for auto glass, heavy fuel oil takes the largest part (about 40%), followed by soda ash cost (25%). The prices of these two raw materials have undergone significant growth since the beginning of 2010, and the forecast is for prices to remain high. This price growth, therefore, greatly influences the gross profit of glass manufacturers.

Due to the financial crisis in 2008, the Chinese float glass industry underwent unprecedented depression at the beginning of 2009. The lowest price of float glass broke the record low of 1,000 CNY/ton. The price of float glass in China began to rise as of the second quarter of 2009 and has now reached the historical high of 2,500 CNY/ton. The price of high-tech float glass for auto glass has also acquired larger growth.

In the first quarter of 2010, the average price of heavy oil (coal tar) was 2,668 CNY/ton, an increase of 256 CNY/ton (over 10%) compared to the fourth quarter of 2009; while YOY growth was 498 CNY/ton. The average price of soda ash was 1,319 CNY/ton, up 126 CNY/ton compared with that in the last quarter of 2009 and 186

CNY/ton YOY. The average price of coal was 792 CNY/ton, an increase of 38 CNY/ton compared to the fourth quarter of 2009 and 28 CNY/ton YOY.

In the first quarter of 2010, the ex-factory price of Chinese industrial products rose by 5.2% YOY, while on a month-on-month basis, the price rose by 0.5% in March 2010. In the same quarter, the purchasing price for raw materials, fuel and power increased by 9.9% YOY. In the last three months, the international futures price of crude oil exceeded USD 70 and USD 80 sequentially, and is foreseen to remain about 80 USD/barrel. Chinese auto glass enterprises will therefore face internal and external pressures over quite a long period.

Also in the first quarter of 2010, Chinese auto production totalled 4.55 million, an increase of 76.99% YOY, with production conservatively estimated to be 15 million in the whole 2010. This suggests that the auto glass OEM market will attain the scale of 15 million sets. Providing that the replacement rate in the auto after-sales maintenance market is 10%, at least 7 million sets of auto glass are demanded for the over 70 million vehicles accounted for at the end of 2009.

On the whole, costs will promote the continual growth in the prices of finished products. Influenced prominently by the price growth of upstream raw materials (crude oil, natural gas, float glass, etc.), the Chinese auto glass industry is pressured to raise prices. Moreover, the upward trend of the auto market directly pushes the expansion of demand for auto glass.

The auto glass industry is therefore forecast to maintain the prosperous growth trend generally, but there will also be great cost pressure.




The Ultimate Warm Edge Spacer for Triple Glazing

A triple glazed gas filled sealed unit every **35 seconds** with **3 men**.

Super Spacer® – the most cost effective-highest performance warm edge triple glazing.

DUBAI new building code to limit glass on façades

 Dubai Municipality has announced that it will be implementing a federal green building code that will limit glass to 60% on external façades of Dubai's structures in 2014.

Eisa Al Maidoor, assistant director-general for Planning and Building Affairs, Dubai Municipality, said the code, which was approved by the Executive Council in August 2010, is not a ratings system but a law that all buildings will be obliged to follow before being issued a building permit.

Over the next three years, all buildings will have to comply with the Dubai Municipality building code, which includes regulations on glass, water and waste management.

Buildings that have more than 60% glass will need to provide shade for it, he added.

Government buildings will be obliged to meet the criteria from the beginning of 2011, according to Dr. Rashid Bin Fahd, UAE Minister of Environment and Water in his opening address.

"We have always been keen to incorporate the environmental dimension in the developmental plans. Realizing the pressures of urban development boom, the UAE has given much importance to apply sustainable solutions including transforming the city areas into green, which in turn will reduce the impact of carbon emission and protect the environment," said Bin Fahd.

Al Maidoor added that with regards to internal environments, buildings will need appropriate management and will have to calculate their performance.

Around 155 global building practices were studied in compiling the Dubai building code, which will consist of 79 clauses, he said.

"The cost of building has increased 3-5% but we can cover the costs of building greener buildings from what we save in electricity and water," said Al Maidoor.

Of the 79 clauses, 18 will regards design, 27 quality of materials, and seven electricity and water. Other clauses will take into consideration recycling, waste management, and indoor air quality.

Al Maidoor added that two representatives from other cities have already requested a copy of the Dubai Municipality guidelines.

Many buildings already use 15% less water than regular buildings, and at least 80% are correctly insulated, he concluded.

SAGE plant grows beyond plan



SAGE Electrochromics, which makes energy-efficient architectural glass, broke ground last month on a 300,000-sq.ft. manufacturing plant next to its headquarters in Faribault, Minnesota, US.

The USD 130 million construction project has been made possible thanks to government funding and tax breaks, including USD 103 million from the federal government and more than USD 1.45 million from state and local sources, along with investments from private sources of more than USD 125 million.

The project, which was originally proposed as a 250,000-sq.ft. plant, was scheduled to break ground this past summer, but did not start up until October 2010, when the company finalized a partnership with French glassmaker *Saint-Gobain*, which is investing USD 80 million in the Minnesota-based business.

According to the company, when production begins in late 2012, the plant will be the "world's largest and most-advanced electrochromic glass manufacturing facility".

SAGE will manufacture product lines for Saint-Gobain and will be able to produce up to 4 million sq.ft. of glass every year, and will create 200 construction jobs and 160 permanent full-time jobs.

SHANGHAI YAOHUA PILKINGTON new majority shareholder




Shanghai Construction Material Group has reportedly received a 16.14% equity stake, equivalent to 118 million shares, in **Shanghai Yaohua Pilkington Glass** from *Yaohua Glass Plant*, free of charge.

Thanks to the transfer, Shanghai Construction Material Group has taken over from Pilkington International Holding BV as Yaohua Pilkington Glass' majority shareholder, with a 26.33% stake.

Shanghai Construction Material Group is involved in construction material production, construction design, real estate development and property management.

LANDGLASS Special National PCT Fund

 Landglass has been awarded the special fund for PCT (Patent Cooperation Treaty) by the Henan Province Intellectual Property Bureau, which is the first national fund awarded to the company in the Henan Province.

Xu Fengguo, director of Luoyang Municipal Intellectual Property Bureau, expressed that it is important popularize Landglass' innovative awareness and behaviour of emphasizing the protection of independent intellectual property rights among private enterprises all over the city.


PCT is an international cooperation treaty concerning patents. In accordance with this treaty, patent applicants are only required to submit one copy of patent application, and the invention concerned can be protected in any member country.

Landglass started to apply for PCT patents as early as 2004, and, at present, one of its PCT patents has been granted by United States Patent and Trademark Office, and over ten are undergoing international examination.

Although PCT is considered as the most advanced and significant international treaty for patent protection, it is relatively difficult for Chinese enterprises to apply for PCT patent because of the complicated procedure, long duration from application to granting and the high cost of PCT patent application. Therefore, the Central Finance initiated the PCT

special fund in 2009 so as to help the enterprises in their applications.

BOHLE prices held for 2011

 Glass and glazing consumables specialist, **Bohle Limited**, has announced it is holding its 2010 prices and will not be applying a blanket price increase across its range of products in 2011. In fact, as a consequence of operational and production efficiencies, some Bohle manufactured products, including brands such as *Veribor*, *Silberschnitt* and *Verifix*, have actually come down in price. Commenting on the announcement, managing director Dave Broxton said "Bohle is not immune from the vagaries of the economic climate, including exchange rate fluctuations and rising overheads, but we have decided to absorb these costs as far as possible whilst continuing to offer the same high standards of service that won Bohle the G10 Customer Care Award. In short, we will continue to offer the highest quality products, at the most competitive prices possible, ex-stock for immediate delivery."

On the price reductions Broxton said, "As a manufacturer, we have invested heavily in automated production and logistics, which has paid dividends in terms of consistency of quality and lowering manufacturing costs. It makes sense to pass on an element of these savings in the interests of increasing volume and what customer can resist better quality at a lower price?"



Comparison of different spacer systems by the Psi- and UW-values

Spacer system Psi (mg) according to BF DataSheet	Rehau Brilliant Design 70 (Zweifachdichtung 6.6 → 0.70W/mK)		Rehau Germet 6000 (Dreifachdichtung 6.6 → 0.70W/mK)	
	Psi (m) [W/mK]	U _g [W/m ² K]	Psi (m) [W/mK]	U _g [W/m ² K]
Lingemann Nitotech 13	0,049	1,285	0,047	0,907
Rohltech Chromatech Ultra	0,041	1,266	0,037	0,882
Swisspacer	0,047	1,280	0,045	0,902
Technoform IGI	0,044	1,273	0,041	0,892
TPS	0,038	1,258	0,034	0,875
Thermix TRN	0,040	1,263	0,036	0,880
Swisspacer, V*	0,033	1,246	0,028	0,860
Edgetech Super Spacer® TriSeal™ Premium Plus	0,021	1,241	0,026	0,855

Best by Test

According to independent research, Edgetech's **Super Spacer®** products are at least 15% more thermally efficient than the next best warm edge technology

 **Super Spacer®**
EN1279 Parts 2, 3 & 6 certified.

GUJARAT BOROSIL India's first low iron glass



Responding to demand created by India's National Solar Mission, along with growing demand in Europe and the US, **Gujarat Borosil Ltd.** has started production on its low iron glass (textured), state-of-the-art factory in Bharuch city, located in Gujarat state, western India, in order to provide glass for crystalline photovoltaic modules.

Gujarat Borosil is the only glassworks of its kind supplying low iron glass to the PV market in India and globally. The plant operates right from sand to the finished glass, which features an anti-reflective coating. It has a melting capacity of 130 metric tons per day, which can provide enough glass for 750 megawatts of crystalline PV modules.

The turnover expected is INR 1.5 billion annually (around USD 32 million; EUR 24.6 million).

Vice president of the company, Shreevar Kheruka claims there are already orders in hand that will absorb its current capacity and with the National Solar Mission in place as well as the growing demand in Europe and US another line is planned by the end of the year.

SCHOTT SOLAR expanding activities



Schott Solar AG is continuing to expand its business activities in Greece, one of Europe's key growth markets by opening a new sales office in Thessaloniki. Schott Solar has been operating in Greece for more than 10 years and additional orders have been placed for 2011.

"The Greek photovoltaic market is developing rapidly: Capacities of around 120 MW output were installed

this year alone. We are expecting that figure to be in the region of 180 to 200 MW next year," explains Dr. Martin Heming, CEO of Schott Solar AG, adding: "Schott Solar has been operating in Greece for many years. We joined forces with local partners back in 2004 to install solar panels on the roof of the airport operator at Athens International. That year we also created the then largest rooftop solar array in Greece, on the German School of Athens (DSA). At the beginning of 2011, we will commence work on a project with an output capacity of two MW. Our medium-term objective is to attain a market share of 5-10% in Greece."

Schott Solar has opened its new sales office to maintain closer ties to new customers and partners. "In the past few months, we have been able to convince scores of new sales partners of Schott Solar's quality. Together we will be leveraging Greece's great photovoltaic potential and implementing interesting projects," comments Darios Dimitriou, new sales manager at Schott Solar in Thessaloniki.

Greece offers formidable conditions as a location for photovoltaic operations: In Greece, global irradiance levels are between 1,400 and 1,700 kWh per square metre, creating perfect climatic conditions. Additionally, new policies on feed-in fees for solar power are strengthening the Greek photovoltaic market. New policies include guaranteed feed-in fees of 40-50% per kWh for 20 years as well as an end to the annual cap of 0.8 GW on new installations.

Greece's commitment to photovoltaics marks a positive economic impulse, as solar energy is a regional economic driving force, creating jobs in manufacturing, retail and small business. Solar plants generate power when consumption levels are especially high: demand from air conditioning and refrigeration units is particularly high during the summer and around mid-day. In the long-term, these policies therefore promise independence for Greece from expensive imports.

GUARDIAN subsidiary to add 40 positions



Consolidated Glass & Mirror, a subsidiary of **Guardian Industries**, based in Galax, Virginia, US, has

announced expansion into solar mirror technology expected to create 40 new jobs.

Guardian will spend USD 2.1 million to build an 800-ft. solar mirror production line, with the state contributing USD 100,000 in Tobacco Region Opportunity Funds, while the city has provided an additional USD 30,000 that

Guardian will receive if the jobs and capital investment are in place within three years, according to City Manager Keith Barker.

Consolidated Glass official Greg Adkins said that the plant, which now employs 234 people, will begin hiring in phases with a goal of having the first in place by May 2011.

AGI subsidiary directors apply for liquidation


 AGI's subsidiary directors have reportedly applied for provisional liquidation.

In a statement, the troubled manufacturer and wholesaler of glass and aluminium products said "applications have been made today by the directors of various subsidiaries of AGI for the provisional winding up of each of the companies. The companies contain the majority of the trading assets and liabilities of AGI as well as being the employers of AGI's staff."

This could become South Africa's first liquidation of a billion-rand-a-year company. News of the company's difficulties were released on 3 December, as banks closed the group's three factories and 11 branches in all major centres, exercising a court order to "perfect" their assets.

GLASTON

Strong glass processing machinery orders from Asia

 Glaston Asia delivered strong order intake in December 2010 for pre-processing machinery, safety glass machinery, service and tools. From countries and regions across Asia, these orders are worth approximately EUR 6 million. The machine deliveries are scheduled mainly for the first and second quarter of 2011.

Heat treatment machines are produced from the Glaston China factory, such as *Tamglass CHF™* continuous furnaces and *ProE CCS™* double chamber furnaces, while pre-processing machinery sold ranges from bevelling, straight line edging, CNC to localized cutting.

"Glaston's complete product portfolio and integrated package solutions provide our customers with more added values," comments Frank Zhang, general manager of Glaston Asia.

VIRIDIAN: 2011 Guide

The new, 128-page edition of the 2011 **Viridian Architectural Glass Guide**, considered to be one of the most referenced tools for industry professionals using glass, has been released to replace the 2007 edition. This new volume details hundreds of combinations of glass types as per their primary application, with listings of the key characteristics of glass, such as solar and thermal performance, colour, transparency and reflectivity, with recommended products for different requirements.

The 2011 guide offers the latest in innovative products on the market along with advice on how to meet the newest industry codes.




The image features a central '360' logo with a red arrow curving around it. Surrounding the logo are seven circular icons representing different services and products: 'Gunsmithing Handheld' (a handheld device), 'Smartfill' (a control panel), 'Productivity & Accreditation' (a curved surface), 'Training, Support & Training' (a person at a computer), 'Machinery & Finance' (a forklift), and 'Products' (a curved glass surface).

Not just another spacer supplier...

Highest performing products, service and support.

PILKINGTON NORTH AMERICA

solar farm with First Solar's panels

 Pilkington North America, Inc., based in Ohio, will soon be feeling the benefits of the glass it produces for **First Solar**, one of the companies that use Pilkington glass. Hull & Associates, Inc., a project development company, is building a 248 kilowatt solar farm at Pilkington's research and development facility in Toledo, Ohio.

The photovoltaic array will provide power to the facility where new glasses for PV modules are being developed by Pilkington. The USD 1.5 million system will supply about 12% of the electricity needed to run Pilkington's research and development facility. Hull is financing the system, in part with a USD 680,782 grant from the Ohio Energy Office through the American Recovery and Reinvestment Act.


Construction on the array, which is being built on a brownfield, began in December 2010.

Pilkington signed a power-purchase agreement with Hull for the power generated by the array. The project is a "behind-the-meter" project, and is the largest photovoltaic system that Hull has designed so far. The company also built a 93 kilowatt array at its offices in Bedford, Ohio.

"We are working on multiple other projects. We don't just do solar; we're also involved in wind and biomass," Hull said. "Our market is predominantly industrial and municipal clients."

ROMAG

Solar panels for festival

 Specialist glassmaker **Romag** has provided panels for the largest privately-owned solar electricity generating system in the UK.

Buildings at Worthy Farm, Glastonbury, the location of the Glastonbury Festival of music, have been fitted with *PowerGlaz*, a form of photovoltaic (PV) solar panels developed by the County Durham-based firm.

The site comprises 1,100 cells capable of generating enough electricity to meet 80 per cent of the farm's electricity demand, equivalent to 40 households. It will save about 100 tonnes of carbon dioxide emissions each year, equal to the total annual footprint of ten people in the UK and will bolster the green energy credentials of

the world's most famous music festival. Excess power will be exported to the national grid.

Thanks to the benefit of the Government's feed-in tariff for renewable energy, the payback time for the system should be about ten years, saving about 100 tonnes of CO₂ a year.

Largest solar panel installation in north-east UK

Romag has commissioned Cleaner Air Solutions UK, of Meadowfield, Durham, to fit photovoltaic (PV) panels to its factory, bringing more than half a megawatt of solar power capability to the plant.

Cleaner Air Solutions, which has received backing from Renew, the North-East's low-carbon and environmental technologies agency, has been undergoing a year of continuous growth. In the past three months alone, the company has secured new business worth about GBP 5 million, which includes a contract to install PV panels to 1,000 houses across the North-East.

Renew works with businesses, communities, investors, regulators and technology suppliers to help low-carbon energy projects go from development to the marketplace, which led directly to the collaboration between Romag and Cleaner Air Solutions.

John Barton, project director of Renew, said: "Cleaner Air Solutions is a great example of how the North-East is becoming a renewables hub. It has been a pleasure to support the company as it has grown and developed over the past four years and it's a great model of success for the region.

"We would encourage any business, regardless of size or experience, to contact us if they have a low-carbon or environmental technology concept or project that we can support and help make a commercial reality."

Dispute over solar cells


Romag is involved in a dispute regarding a GBP 2.3 million charge with a supplier of photovoltaic cells used in the manufacture of solar glass.

The company said the supplier was no longer able to deliver the required product and wanted Romag to take a different type.

Romag had already paid a deposit to receive the goods under contract and such items are regarded as intangible assets valued at GBP 2.4 million, which will now be written down in its annual results.

Vinay Bedi, divisional director at Brewin Dolphin stockbrokers in Newcastle, said: Romag said it had taken legal advice and was "taking all necessary steps to protect its position" and would be "robustly pursuing the recovery of the outstanding balance of the deposit and/or damages from the supplier".

HANNSTAR glass thinning and cover lenses lines

 **HannStar Display**, active in the field of touch panel modules, has recently started to set up production lines for glass thinning process and colour lenses, for mass production in the second half of 2011.

The company said it expects touch panel revenues to account for about 20% of its total revenues in 2011.


HannStar's Nanjing, China plant started operation in the fourth quarter of 2010 and has a monthly capacity of about 1.4 million touch modules ranging from 7- to 11-inch, as well as 3.5-inch and larger handset touch panel modules.

However, it is understood that HannStar's Nanjing plant has already begun mass production, and the company expects utilization rates to improve at the end of the first quarter of 2011.

HannStar is also planning to setup capacity for about

50,000 colour filters in-house for on-cell touch sensor production.

SISECAM new plants in Bulgaria

 Turkish glass manufacturer, **Sisecam**, has announced that it plans to open four new plants in Bulgaria by 2012.

The new plants, which will create 200 new jobs, will be located in Turgovishte, which already houses the main Sisecam plant in the country, and are set to produce automotive glasses and coated glass for construction projects. At the same time, the company also said that its flat glass manufacturing plants would go for a capacity build-up.

Sisecam, one of the biggest green-field investors in Bulgaria, has an investment worth over USD 300 million. A total of 1,100 workers are employed at the company's four established plants in Turgovishte.

PERFECT SOLUTIONS OF GLASS PROCESSING

DOUBLE PENCIL EDGER



www.fushan.cn

No. 8 Anle Industrial Road, Dongfeng Town,
Zhongshan City 528425, Guangdong, China.
Tel: +86 760 22610338 - Fax: +86 760 22610328
E-mail: sales@fushan.cn - hujie@fushan.cn

Mid-East & Africa Office: Mr. Giuseppe Bonsignori
Tel: +39 338 9999376 - E-mail: info@fushan.it

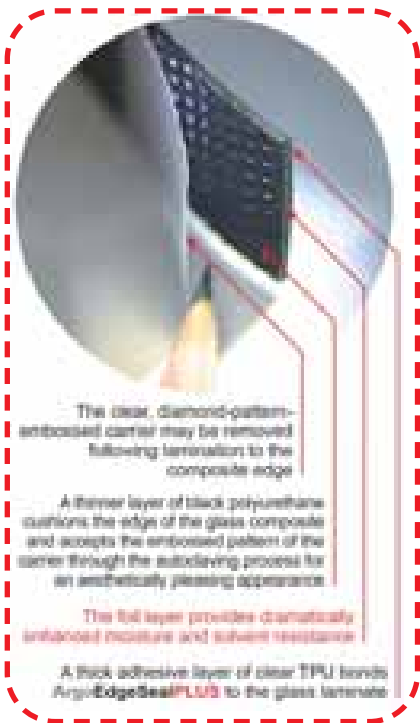
Protecting architectural and safety glass interlayered composites

Argotec Inc. has released an enhanced upgrade of its *BOC-9450 Edge Seal™* product for the protection of TPU- and PVB-laminated glass composites: *ArgoEdgeSealPLUS®*. This patent-pending product has a new foil layer sandwiched between two sheets of durable polyurethane. According to Argotec, this construction better protects TPU and PVB interlayers from damage due to penetration by moisture, cleaning solutions, and the solvents found in window caulks and sealants. These elements can degrade the interlayer film used to

bond a composite's multiple layers, causing a fogging effect at the edges of the composite.

ArgoEdgeSealPLUS can be used to protect any laminated glass composite produced by an autoclave process: glass-to-glass; glass-to-polycarbonate; glass-to-acrylic; and glass-to-other optical substrates. Whether for security glazing or architectural applications, it provides not only a highly impermeable chemical barrier but also serves as a 50-mil "bumper" that reduces the potential for mechanical damage during downstream handling and installation. The diamond pattern imparted by the clear carrier to the outer layer of the edge seal also creates an aesthetically pleasing appearance on the composite edge.

www.argotec.com



Safe transport of unpacked glass

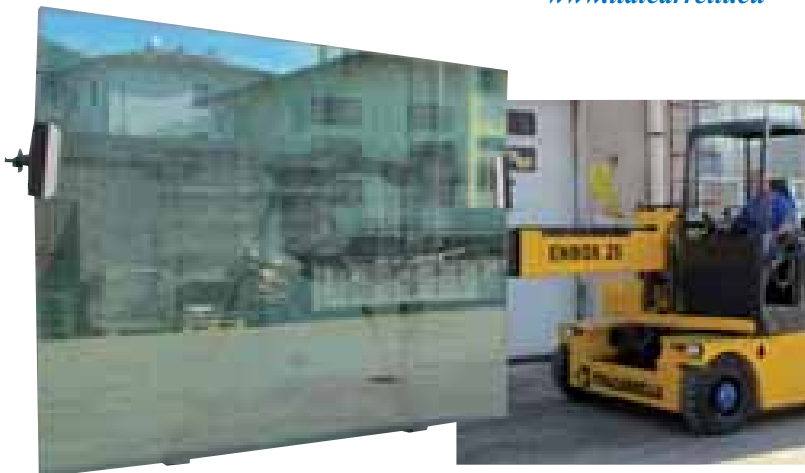
Italcarrelli, leading company in the design and construction of machinery for the transport of flat glass, has recently developed a new loader – the *EN BOX 25T* side loader for the transport of unpacked glass sheets.

The *EN BOX 25T* is part of the *EN BOX 25* product range for the loading/unloading of glass packed in closed top containers, and is basically identical to the *EN BOX 25* with the difference of being equipped with a device to pick up unpacked glass. This variant has been designed because of the continuous requests of use for unpacked glass, which is more affordable than transporting packed glass. In fact, in many countries, glass is transported from the glassmaker to the client with trucks that cannot be loaded from above or from the side, but only from the back, as for closed top containers. Companies using this kind of transport are obliged to load the glass on these trucks with whatever equipment they have on-site, which requires long operation times (loading the glass often takes place one sheet at a time) and considerable risks for operators.

The *EN BOX 25T* has all the advantages of manoeuvrability and flexibility of the *EN BOX 25* range. With this loader, says Italcarrelli, operators can remove packs of glass directly from the warehouse and load them onto trucks without the need for other equipment such as forklift trucks or cranes. A single operator is able to carry out all operations in complete safety, thus completely eliminating the risk of accidents.

The *EN BOX 25T*, as all Italcarrelli products, has been designed and constructed with the strictest and highest quality standards, which make the Italcarrelli brand a guarantee for its clients.

www.italcarrelli.eu

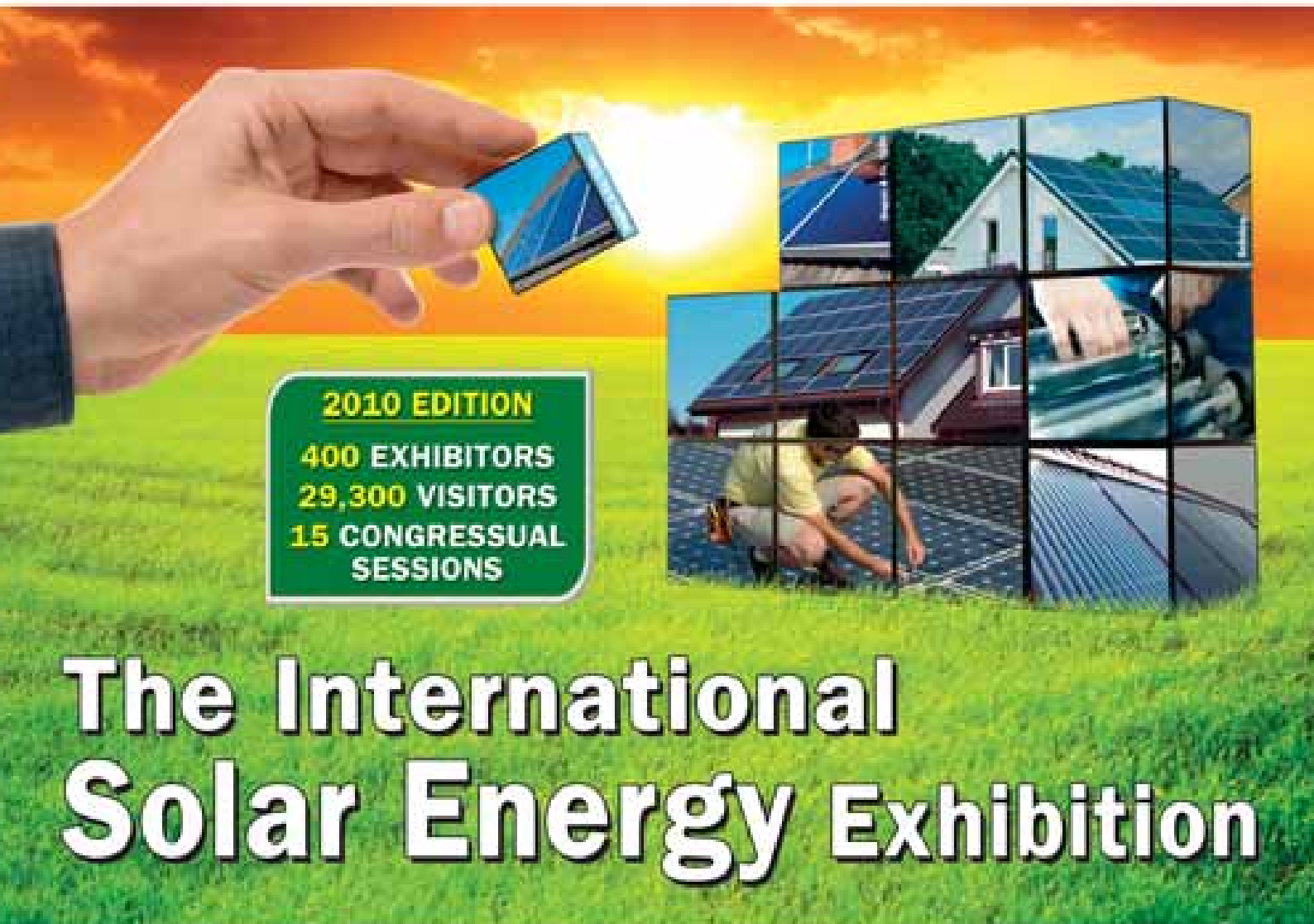


2011
Ener
Solar+

fieramilano

16-19 NOVEMBER 2011

Milan Fair Centre - Italy



2010 EDITION
400 EXHIBITORS
29,300 VISITORS
15 CONGRESSUAL
SESSIONS

The International Solar Energy Exhibition

ORGANIZED BY:

**ART ENERGY
PUBLISHING**

Via Antonio Gramsci, 57
20032 Corzano - Milano
Tel.: +39-02-66306866
Fax: +39-02-66306510
info@enersolar.biz

TOGETHER WITH:

GREENENERGY

Producing Energy
While Saving
the Earth

**PVTECH
2011**

The International
Exhibition on PV Production,
Equipment and Manufacturing
Technologies

INVEX 2011

The Inverter Day

IN CONJUNCTION WITH:

e.tech



experience



FIERA MILANO

www.enersolar.biz



Insulating glass units with high-speed sealing

The **Bystronic glass Group** presented a high-speed sealing machine for insulating glass units in the form of the speed'sealer at *glasstec 2010* in Düsseldorf, Germany. This new machine seals windows and façade elements at a maximum flow rate, whilst at the same time, offering, says Bystronic glass, the highest application speed. For the first time in the industry, it is now possible, even with different production conditions, to actively and consistently mix the two sealant material components, thanks to a dynamic mixer.

The speed'sealer was presented for

the very first time at a TOP SECRET area of the Bystronic glass stand at *glasstec*.

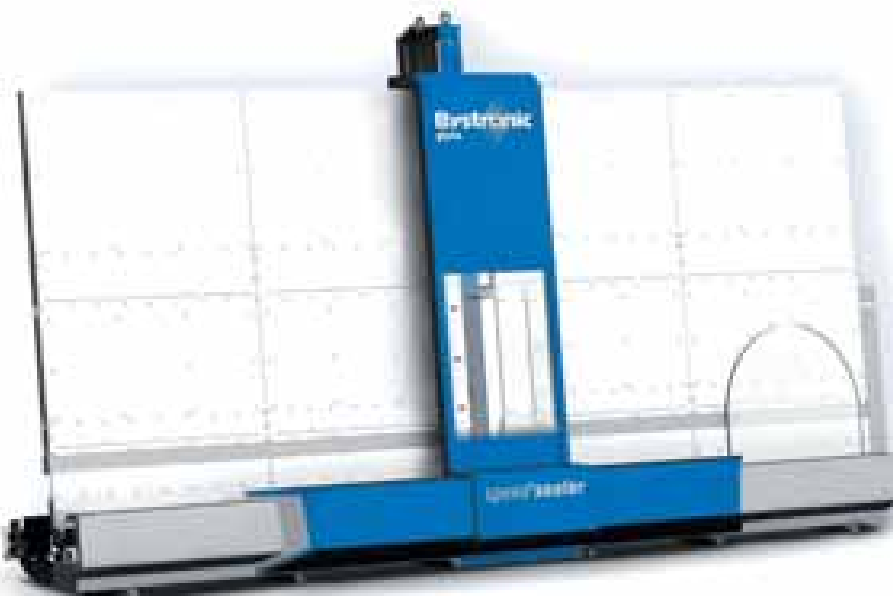
In a small production run, invited guests were able to see the sealing of double insulating glass units and triple insulating glass units with two different spacer widths, façade elements with 20mm x 20mm sealant joints as well as forming glass without any tool changing whatsoever. The speed, quality and flexibility of sealing that was on show are unique in the sector to date.

The speed'sealer operates both quickly and extremely precisely. The machine seals double and triple insulating glass units at high-speed with a consistently convincing quality. This is achieved regardless of the sealing material selected, variations in material quality or temperature, or even straight after production com-

mences. The constant mixing ratio of the two adhesive components is monitored electronically. In addition, the self-cleaning dynamic mixer prevents any clogging of the mixing section eliminating the need to clean it in the external rinsing cabinet. The high-precision dosing technology ensures a highly accurate, volume-controlled application of the sealing material together with immediate adjustments in volumes where the joint depths vary.

This new machine combines the vast experience and expertise of Bystronic glass Technology Center Bystronic Lenhardt in respect of adhesive and sealant application. By using a dynamic mixer, the speed'sealer operates with a very low material pressure, this ensures a low wear and tear of the dosing system. The flexible sealing of triple insulating glass units that have varying gap sizes between panes, is produced in a double circulation process without having to change the nozzles or encounter machine downtime. With this, the middle pane of a triple insulating glass unit can be secured via adjustable supporting rollers. Alternatively, the speed'sealer can be equipped with an automatic changeover system, which, within two minutes, allows for an unmanned change of materials.

www.bystronic-glass.com



32

Measuring and detecting IG structure, coating and thickness

Edgetech I.G., exclusive distributor of *Sparklike* products in the Americas, Europe and Australia, has announced the availability of *Spyglass*, a laser-based gauge for measuring and detecting insulating glass unit structure, coatings and thicknesses.

"*Spyglass* is an effective production quality tool that confirms finished units are properly constructed and a field service tool for determining specifications for replacement IG

units," said Mike Burk, manager, workplace learning and performance for Edgetech I.G. "Users can instantly measure the exact characteristics of installed insulating glass units and immediately order the right type, saving time and achieving ultimate quality control over the replacement unit."

Spyglass graphically displays

each layer of glass, coating location, air space and overall unit thickness. A scan function displays the minimum and maximum dimensions with an indication whether the unit is concave or convex.

Edgetech also distributes, services and calibrates *Gasglass*, the only non-invasive, portable device for determining gas-fill levels in IG.

www.edgetech360.com



Updated general purpose spectographs

Verity Instruments has released its new General Purpose Spectrograph, the *SD1024FL™*. Compared to the model it is replacing, the *SD1024DL™*, the RoHS compliant *SD1024FL* offers, says the company, several improvements including better line shape uniformity, improved resolution, improved noise equivalent power and the addition of second order blocking.

The *SD1024FL* is used with *Verity's SpectraView™* application software, which is based upon the company's 29 years of experience in endpoint detection and process control. Tool integration is possible using RS232, Ethernet, and Digital I/O.

Verity Instruments, Inc. is a leading supplier of advanced instrumen-



tation and software for optical endpoint determination as required in etch, CVD etchback, photoresist strip, CMP endpoint and related applications. Additional products include instruments for film

thickness measurement. Verity has been providing optical instruments for semiconductor processing since 1980.

www.verityinst.com



Mappi Lami Flex

Glass tempering innovations

Mappi International was set up in 1993 thanks to the combination of diverse but synergic professionalism and experience in the manufacture of glass tempering machinery, and with the aim of creating innovative high-tech plants. In just a few years, constant research in technology and in the reliability of the machinery manufactured have enabled the company to become well known worldwide.

In 2010, Mappi International started to commercialize a unique machine, resulting from the needs and demands of clients to produce top quality last-generation tempered glass – so-called Super Low-E. The *ATS Eco Convection* is the new furnace for

glass tempering that includes all the advanced technology of Mappi International, obtaining, says the company, excellent results in production and quality thanks to a wide range of innovative solutions: high production yield, maximum product quality, energy savings.

The *ATS* furnace, with the new and exclusive System of Total Convection, tempers all today's glass types, including coated-, selective-, solar control-, as well as magnetron low-E with emissivity index of 0.02, enabling to increase the quality of the glass and the production yield of the plant.

Mappi has continued to strengthen its market presence with its line of convection furnaces, which use *ESS* – Energy Saving System, and which enable to rationalize non only the use of electricity, but also to control ventilation and the heating zones.

Another feature of Mappi International's furnaces is the *MHS*, a system of homogeneous heating of the glass, particularly suitable to obtain uniform heating on each single sheet of glass, as well as the *IHS* (Intelligent Heating System) which concentrates the heat only where the glass is present, eliminating overheating of the ceramic rolls and the areas where there is no glass.

These machines will, in the near

future, have an ever more important role in the market, thanks to significant savings in consumption and the optimization of financial resources.

Lami Flex, the most recent machine from Mappi International, was presented during *glasstec 2010* and immediately aroused the interest of visitors, since it is a real innovation in terms of laminated glass processing technology. In fact, according to the company, *Lami Flex* is the only machine on the market that enables to laminate glass using a PVB film without using an autoclave and a cool room. This highly sophisticated but easy to use machine is therefore able to obtain UNI certified products by means of a vacuum process of about four hours.

Company philosophy of Mappi International is and has always been based on the research and development of new applications aimed at identifying ever more efficient systems for high quality production while respecting the environment with low energy consumption. And, therefore, the main features of the new range of furnaces manufactured at the company premises at Cisterna di Latina, near Rome, Italy, are those of machines able to reduce work times and electricity consumption.

www.mappi.it



Mappi ATS Eco Convection

Put *Gulf Glass* in YOUR diary.

The leading international glass event for the entire Middle East, MENA and Maghreb region.

A real deal-making atmosphere under one roof for all aspects of the glass industry.

From refractories and raw materials to container, flat and float glass manufacturing and processing technology, Gulf Glass provides the perfect one-stop platform for all those concerned with the sector.

If you're involved in Architecture, Construction, Food & Beverage Packaging, Automotive, Tableware, Pharmaceutical, Perfumery or Glass Processing - then this is definitely the show for you!

The Middle East

Still the world's number one region for major construction – with glass right at the heart of it.

Gulf Glass

The only truly-dedicated and totally-independent glass technology and processing show for the whole region.

Visitor admission tickets available online

Gulf Glass | working for you

- The largest single glass event in the region.
- The most visitors of any Middle Eastern glass event. Over 3,000 visitors expected this year.
- Major Industry leaders, all under one roof.
- A long-term commitment to the region and the furthering of the glass community.
- A total approach covering all aspects of the glass making and processing industry.
- High profile, international exhibitors from all aspects of technology.
- A business environment in which deals get done.
- A high-quality service for exhibitors and visitors alike.



Gulf Glass
4th GLASS MACHINERY, EQUIPMENT, MATERIALS & TECHNOLOGY EXHIBITION **2011**

ADNEC **7-9 MARCH**
Abu Dhabi National Exhibition Centre

in association with




official media partner



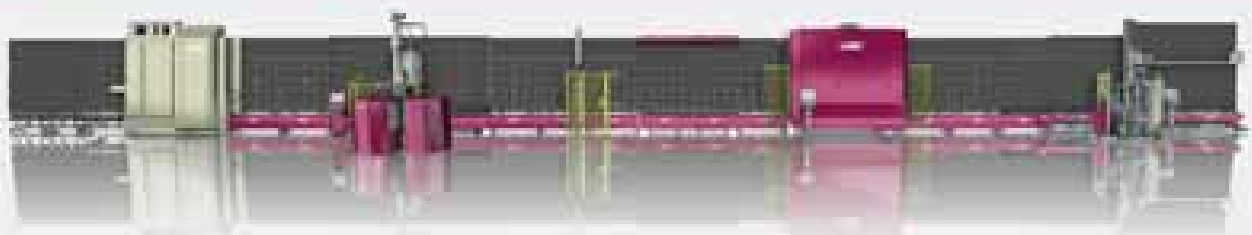
www.glassinthegulf.com

Contact the Exhibition Team today
telephone | +44 (0)20 3239 6759
email | enquiry@gattacaltd.com

A close-up photograph of a man's face, looking directly at the camera. He is wearing a light blue collared shirt. The image is partially obscured by vertical window blinds on the left side.

Want to manufacture efficiently?
We can help you!

Our comprehensive range of machinery, software and services for the manufacture of insulating glass provides the foundation for your success.



LISEC

www.lisec.com

CREATING VISIONS. PROVIDING SOLUTIONS.



LISEC: revolutionizing laminating technology

LISEC COSTRUZIONE MACCHINE ITALIA

At the end of 2010, LiSEC installed its brand-new laminating tunnel at one of its customers' plants in Italy. This machine represents a milestone in the laminating industry because it can process one batch of glass in only 45 to 60 minutes, a very short time compared to the traditional high-pressure autoclave system, which requires at least 5 to 6 hours or more, considering a mixed production.

The core idea of this new technology is to split the heating phase from the cooling phase using a tandem chamber system, which shortens the cycle and, moreover, reduces energy consumption to one third compared to an autoclave cycle.

THE LAMINATING TUNNEL

The tunnel is made up of one heating section and one cooling section, which are separated by

Fig. 1 A -
Laminating
tunnel

Fig. 1B -
Outfeed

Fig. 1C -
Infeed

doors and by an intermediate chamber. The tunnel is pressurized, similarly to autoclave systems, but with lower air pressure. The vacuum process is enabled by a special tray system covered by silicone blankets and equipped with an automatic connection system and control device.

Glass sheets with a maximum size up to 2,800 x 5,100 millimetres, weighing 800 kilos and thickness up to 80 millimetres, can be processed.

All kinds of interlayers can be used: refrigerated or interleaved PVB, EVA, ionomers, providing very flexible production.

This technology is protected by a patent and was developed after very intensive R&D; a prototype was built and used to prove the efficiency of the process; glass samples were produced using the technology and were tested according to the European norms for the certification of laminated glass.



Figure 1A

LiSEC

CREATING VISIONS. PROVIDING SOLUTIONS.

The most recent technical development from LiSEC is that of a brand-new laminating tunnel, which was installed at one of its Italian clients' plants late in 2010. With incredibly short processing times and reduced energy consumption, this tunnel can also use all kinds of interlayers and, therefore, ensures high capacity but also considerable flexibility in mixed production runs.



Figure 1B



Figure 1C



Clamps transfer

Simplified operations

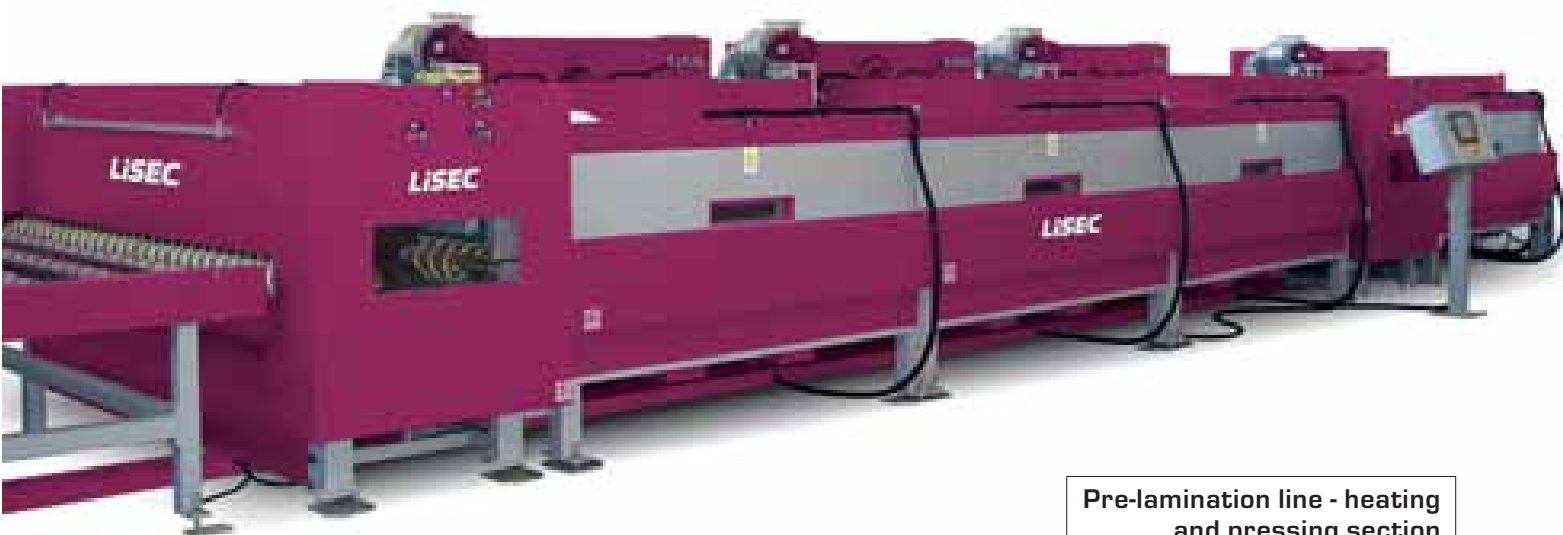
The tunnel is combined with a standard prelamination line, where the glass panels are assembled, heated and pressed. At the end of the press, the glass is loaded horizontally onto specific trays. Several sheets form one batch, which facilitates the optimization of the loading surface. As soon as one batch is complete, the tray is picked up automatically and transferred to the tunnel parking or feeding area, where a conveyor loads the glass into the tunnel.

The tunnel entry door is then closed and the heating cycle is started. Glass is heated up to the set temperature (according to the interlayer type); then the batch is moved to the cooling chamber by a drive system; while the glass is cooled, another tray is fed into the heating channel and heated up, thus increasing output.

After cooling and depressurization, the



Horizontal washer



Pre-lamination line - heating and pressing section

tray is evacuated automatically and stored in the specific multilevel buffer (up to eight positions). The operations of the machine are simplified because of the fully automatic loading device and storing system for the trays; no operator is required during night cycles to load and unload the racks, as in the case of autoclaves.

Capacity and flexibility advantages

The daily capacity of the tunnel is comparable to an autoclave for cut-to-size production. A very important advantage is the saving of energy: as already mentioned, because of the tan-



dem chamber system, with a heating section where temperatures are always warm and a cooling chamber where temperatures are cold, there is no waste of energy like in the autoclave, which has to be heated up and cooled down for each cycle. This reduces the share of energy costs in production, which is becoming an important factor of total costs.

The batches and tray system enable high flexibility. Moreover, small quantities of laminated glass (just a few sheets) can be processed at low production costs. With the autoclave system, on the other hand, the only way to minimize the high energy consumption for each cycle is to fully load it (10 tons of glass), which represents a significant restriction. Furthermore, single glass with minor defects (e.g. external bubbles due to warp) can be reprocessed with the vacuum system and problems can be fixed within two hours, instead of running an additional autoclave cycle or waiting and trying to integrate it into the following production cycle.

The advantages listed above clearly show that this machine is a good example of state-of-the-art technology. The tunnel was installed a few months ago and feedback from the market is already remarkable.

FURTHER IMPORTANT EQUIPMENT

LiSEC has also developed new important devices for the pre-lamination line:

- customized line configurations and tailor-made climatic chambers are designed to meet customer needs;
- the horizontal washer is equipped with a water

LISEC: revolutionizing laminating technology

40

conductivity control system, automatic draining of the dirty water and filling of demineralized water from the Osmosis plant into the washer tanks. This means that the water used for the washing process is always within an acceptable conductivity range, which is very important to avoid the risk of delamination;

- the accurate squaring system can also square shapes (with at least one straight edge) and assemble them completely automatically without the need to adjust them manually; the lamination of shapes is simplified and as fast as the lamination of normal glass sheets;
- the change of the PVB film during production takes place completely automatically in every single step: winding the previously used PVB roll, unwinding the current one, transporting the film into the channel system where clamps pick it up and apply it to the glass;
- the new PVB trimming system, very fast and precise, with four individual cutting tools. The glass sizes are recorded automatically during their assembly, the cutting devices and the glass are positioned automatically for trimming;
- considerable experience in forced-air convection heating technology enables LiSEC to customize the size of the furnace according to the desired productivity levels, which results in an optimum speed-energy consumption ratio.

LiSEC continues to impress its customers and confirms its position as a market leader for lamination technologies. Other important innovations will be presented shortly: specific entry-level solutions for companies who want to start laminating low volumes and require very high quality finished products and reliability of equipment. ■

LiSEC

CREATING VISIONS. PROVIDING SOLUTIONS.

Lisec Costruzione Macchine Italia Srl

Via Aquileia, 14

31048 Olmi di S. Biagio di Callalta (TV), Italy

Tel: +39-0422-794111 - Fax: +39-0422-794191

E-mail: info@lisc.com - www.lisc.com



Accurate squaring system and automatic suction cup transfer




Automatic PVB feeding system




Automatic shaped glass processing

Idrotecnica: enhanced and facilitated use of reverse osmosis demineralizers



Purification and demineralization – two very important processes for industry. In this article, Idrotecnica presents us with its wide range of machines for this purpose, along with a restyling of its flagship product – the IDRO RO.



Idrotecnica: enhanced and facilitated use of reverse osmosis demineralizers

42

THE COMPANY

Idrotecnica has been building devices and plants for the purification and demineralization of primary waters since 1975. Today, Idrotecnica offers a wide range of demineralizers that meet the most severe requirements of many application fields, ranging from traditional but always effective ion-exchangers to the most advanced reverse osmosis demineralizers and electro-deionizers.

The equipment manufactured by Idrotecnica has always been and is still supplied to primary firms specialized in the field of chemistry/petrochemistry, industrial washing, micro-electronics, research and development, cosmetic and food processing.

Idrotecnica provides its products and services all over the world, in particular to Europe, North Africa and some Asian countries.

Customer service

Idrotecnica guarantees efficient and reliable assistance for its products. The firm guarantees assistance to its customers by phone or, if necessary, with the prompt intervention of its technicians directly onsite.

COMPANY PRODUCTION

Easy, solid, reliable

Idrotecnica's products are easy to use, long lasting and require very little maintenance. All products are severely tested under the most diverse operating conditions to assure reliable and long-lasting plants.

High quality

All the basic elements used in the company's equipment (membranes, resins, pumps, instrumentation, electric components) come from worldwide known primary industries; Idrotecnica collaborates with selected external companies to build its components, devices

IDRO RO
700 St



and plants, each one being a specialist in a given field (carpentry, software, precision turning).

Components and companies are selected and continuously subjected to strict evaluations to manufacture high quality plants meeting the customers' and the industry's requirements.

The wide range of models marketed by Idrotecnica offer a solution for each and every need. In fact, other than its series of standard models, Idrotecnica also manufactures plants for special applications as per individual customer's request.

Water purification

Water Demineralizers, Purifiers, Desalinators and Sterilizers

Idrotecnica produces a wide range of water demineralizers, water purifiers, seawater desalinators and water sterilizers:

IDRO RO	Reverse osmosis water demineralizer, desalinator system. Flow 60-20,000 lt.
2CA	Ion-exchange water demineralizer with automatic regeneration
Osmodemi	Water purifier using reverse osmosis and ion exchange
Galileo	Ultrapure water preparation reverse osmosis and electro-deionization system
ECO RO	Reverse osmosis water demineralizer, desalinator. Delivery 20-60 lt.
2CM	Ion-exchange water demineralizer with manual regeneration
Serie M	Single-column water demineralizer with interchangeable ion exchange resins
PURO	UV-C light water sterilization units
BM	Automatic water softener
WS Filter	Quartzite and carbon water filter
Leonardo	Sea water desalination system

Water Demineralizers

Reverse osmosis water demineralizer, desalinator system

- Ion-exchange water demineralizer with automatic regeneration
- Reverse osmosis water demineralizer desalinator
- Ion-exchange water demineralizer with manual regeneration
- Single-column water demineralizer with interchangeable ion exchange resins

Water Purifiers

- Water purifier using reverse osmosis and ion exchange
- Ultrapure water preparation reverse osmosis and electro-deionization system

Sea Water Desalinators

- Desalinator reverse osmosis capacity 60/20,000lt
- Desalinator reverse osmosis capacity 20/60lt
- Sea Water Desalinator

UV Water Sterilization

- UV-C water sterilizer

Water Softeners

- Automatic water softener

Water Filters

- Quartzite e carbon water filter



Idrotecnica: enhanced and facilitated use of reverse osmosis demineralizers

44

IDRO RO restyling

Idrotecnica's reverse osmosis demineralizer IDRO RO underwent, in mid-2010, important restyling which has further elevated the simplicity of installation and management, as well as reliability, characteristics that have allowed widespread use with great satisfaction by the glass companies that use them.

In glass companies, as required by all types of remote equipment (those on which the operator is not directly operational), water demineralizers must be immediately understandable and easy to operate.

The redesign of the IDRO RO has, says Idrotecnica, further enhanced this feature by the multiplying and

clarification of sensors which are interfaced with a new and advanced electronic control panel with backlit LCD.

This panel shows specifically the situation of the system and the reason for possible arrest: self-maintenance, high-level accumulation and any failure by specifying in detail the cause, making intuitive the resolution. Since over 50% of Idrotecnica's equipment is installed internationally, messages can be selected via a simple user-friendly menu in six different languages: Italian, English, French, German, Spanish and Brazilian Portuguese.



IDRO RO 190 St

IDRO RO St

The IDRO RO St family are the most commonly used. They are equipped with membranes with the highest salt rejection (99.5 per cent) and enable to produce extremely pure demineralized and sterile water.

Reverse osmosis water demineralizers

The demineralizers of the IDRO RO series utilize the principle of reverse osmosis in the best possible way for important applications. The IDRO RO series produces top quality demineralized water fully automated and guaranteed over time. Complete automation, the use of the most reliable components and established and safe technologies make the IDRO RO series perfect to meet the stringent requirements of water production for both industrial (e.g., the chemical industry) and civil (e.g., drinking-water production) use.

The IDRO RO series features, among others:

- a five-micron filter;
- anti-precipitant automatic dosage;
- stainless steel skid;
- complete instrumentation;
- control display for automatic and safe operation.

Reverse osmosis water purifiers

These devices are grouped in three families, depending on specific requirements: IDRO RO St – IDRO RO Low Energy – IDRO RO DPS.

IDRO RO

The IDRO RO Low Energy family are equipped with membranes that guarantee minimal salt residue in the outlet stream. They are ideal for the production of drinking water from sea- or polluted waters. These devices may be installed in containers, on carts, or in transportable drinking-water production plants to face all sorts of emergency situations.

IDRO RO DPS

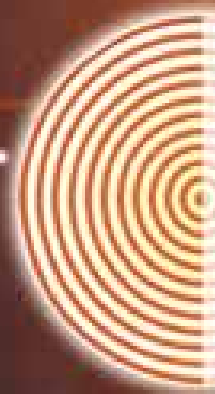
The devices of the IDRO RO DPS family are equipped with a dual-stage reverse osmosis unit. They are ideal for water production with very low conductivity (up to 1-3 μ S/cm, depending on the treated water characteristics). ■



IDROTECNICA s.r.l.

Via Sardorella, 125
16162 Genova – Italy
Tel: +39 – 010 – 711651
Fax: +39 – 010 – 711659

info@idrotecnica.com - www.idrotecnica.com



PV TECH 2011

THE INTERNATIONAL EXHIBITION ON PV PRODUCTION EQUIPMENT
AND MANUFACTURING TECHNOLOGIES

8th Edition

2010 EDITION

**OVER 29,300
VISITORS**

The PV Technology Planet

Milano - Italy

fieramilano 16-19 Novembre 2011

www.pvtech.eu

ORGANIZED BY:

**APTE ENERGY
PUBLISHING**

Via Antonio Gramsci, 57
20032 Corsico - Milano
Tel.: +39-02-66306666
Fax: +39-02-66306610
info@pvtech.eu

AS PART OF:

**EnerSolar⁺
2011**

The International Solar
Energy Exhibition

IN CONJUNCTION WITH:

HTE

hi.tech.expo

The Innovative Technologies
Trade Show

IN COOPERATION WITH:



FIERA MILANO

Company update

46



C.R. Laurence:

C.R. Laurence Co., Inc. is a leading manufacturer and global supplier to the glazing, railing, architectural, construction, and automotive industries.

Offering more than 50,000 products, CRL serves the industry from 30 locations throughout North America, Europe, and Australia.



C.R. LAURENCE CO., INC.

SERVING THE NEEDS OF DIVERSE MARKETS

In large and small glass shops across the globe, CRL's comprehensive catalogues and the company's website, www.crlaurence.com, are referenced daily for access to over 50,000 different products and value-added services.

As the popularity of glass in exterior and interior design continues to grow and positively impact our



continuous growth and improvement

lives, architects, builders, craftsman, and glass shops of all types and sizes depend on CRL services to aid them in their own entrepreneurial adventures.

This service is carried out through sophisticated delivery technology and knowledgeable people - people who realize that their job is not only to sell the company's products, but also to understand the needs of our customers, and to develop and implement customized solutions that exceed expectations. Indeed, CRL sees itself as much as a solutions provider as a product supplier.

Customer service has guided CRL ever since its beginnings over 49 years ago, when it started as a distributor of glazier's hardware and industrial supplies, operating out of a 5,000-square-foot (465-square-metre) facility in Los Angeles, California.

Very quickly, CRL and the glass industry learned that the location of a supplier is paramount and CRL began its focused and rapid expansion throughout North America. In the last 20 years, the company has added many new

branches and enhanced existing ones. Currently, CRL has 16 state-of-the-art branch distribution centres in the United States, four branches serving Canada, two in Australia, and one each in England, Italy and Germany. More sales and distribution branches are already in planning.

In the spring of 2008, C.R. Laurence took a major step forward with the acquisition of Sommer & Maca (Somaca). A pioneer and leader in the glazing industry in North America, Somaca supplied tools, hardware, and glass machinery to customers across the United States and beyond, for over 85 years. Bringing Somaca into the CRL family of companies combined the products and services of both organizations, and enhanced CRL's customers' experiences with larger inventories now available from all branch locations. Somaca's excellent reputation as a glass machinery manufacturer continues as CRL maintains the Somaca name for its Glass Machinery Division, headquartered in Cicero, Illinois, and enhances the product development.

C.R. Laurence: **continuous growth and improvement**

48

CRL'S COMMITMENT - BEYOND THE EXPECTED

Customer orders, whether placed by phone or computer, set off a chain reaction of sophisticated preparation and delivery technologies that make up the art of supply. Orders may be transmitted to any one of CRL's regional distribution centres in the United States, Canada, Europe and Australia, and are accurately prepared for quick shipment.

Believing that a business person's most precious resource, time, should be devoted to his own business and its unique challenges, CRL offers several convenient ways to order. Most recently, the company has taken advantage of the huge potential of e-commerce and has launched one of the most comprehensive web sites in the industry. If a customer wants to place an order or learn more about a product, the CRL website makes it very easy to get information. In fact, CRL's self-service website, www.crlaurence.com, is the quickest way to get up-to-date product information and support, place orders, check prices, get technical bulletins, MSDS sheets, and request catalogues or other literature. All CRL catalogues are also available online, as flip-page PDF files or downloads, and customers can even check the status of their accounts and orders on the site.

For those who prefer personal interaction, CRL has a large staff of customer service representatives who respond quickly, courteously, and accurately to thousands of contacts a day across the globe.

ANOTHER IMPORTANT AREA OF CRL'S GROWTH IS MANUFACTURING

Today, C.R. Laurence designs, engineers and manufactures a wide variety of architectural hardware, including architectural metals, commercial and residential architectural railings, hardware for 'all-glass' commercial entrances, balanced doors, door closer systems, transaction hardware, and frameless shower door hardware. CRL also manufactures a quality selection of automotive window products.

Currently, more than 660,000 square feet (61,000 square metres) of space is dedicated to CRL's distribution and manufacturing operations in Los Angeles where the company is headquartered.

CRL has recently added custom fabrication

of architectural metals to its manufacturing capabilities. The company can now create a wide variety of architectural metal elements, including panel systems, custom cladding, ornamental metals, metal column covers, wall panels, infill panels for railings, and custom sunshades. CRL customers are using these architectural metals in conjunction with CRL's door rails, exit devices, handles, railings, and other architectural hardware, to create entire 'all-glass' storefront entrance packages.

CRL's rapid growth is based on its stellar reputation for service, which continues to be the backbone of the company. CRL's commitment to deliver quality customer service begins with CEO, Donald E. Friese, who reminds employees to think of themselves as goodwill ambassadors for the company, and who keeps his team moving forward in the customer service arena.

WIDE PRODUCT LINE AND UNMATCHED INVENTORY

CRL carries a tremendous inventory to support its customers. As a one-stop shop representing thousands of suppliers in addition to its own lines, CRL cuts down the cost of time to acquire needed items and brings value to every transaction.

CRL also leads the way in innovative products and by introducing new profit centres for customers.

In the field of quality hardware for commercial facilities, CRL's proprietary Dry Glaze TAPER-LOC™ System for glass railings is in high demand for use in residential and commercial applications. CRL's patented Dry Glaze Door Rail System, a totally new concept exclusively designed, engineered, and manufactured by CRL for securing glass in commercial door rails, has provided glass professionals with a rapidly growing niche – 'all-glass' commercial entry systems. Security concerns are also addressed with bullet resistant service windows, and custom fabricated bullet resistant barriers.

CRL offers the most complete line of quality glass and mirror hardware, including its newest line of hardware for display cabinets and show-cases. Whatever the mirror industry needs to mount, hang, seal or protect mirrors, all can be found at CRL.

After years of research and development of new tools, the company sincerely believes that

its selection of glazing tools is the most comprehensive available. From sophisticated insulating glass supplies, equipment, and machinery, to the simplest hand tools, CRL provides glaziers with the products they need to get the job done. CRL has recently expanded their line of vacuum lifting devices for the safe handling of glass, and has begun work on a new manufacturing facility for this line in Melbourne, Victoria, Australia.

In the general tool line, glaziers, carpenters, electricians, plumbers, and other general handymen will find a wide selection of tools and equipment in CRL catalogues and on line. This line of tools is constantly growing as new products are developed.

CRL is also a leading supplier of fasteners, sealants, and adhesives, in both liquid and tape forms. Its extensive line of fasteners includes screws, wall anchors, toggle bolts, nut inserts, and blind rivets.

When customers need products for the repair, modification, and weatherization of windows and doors, CRL's selection of repair hardware is complete, featuring screening materials and security hardware for doors and windows.

In the area of automotive aftermarket supplies, CRL is recognized as the leader in pick-up truck rear sliding windows, which includes the very successful POWR-Slider - the first electric rear slider. In addition to the over 500 window styles manufactured for the aftermarket, CRL also provides all the tools, adhesives, sealants, and supplies needed for auto glass repair and replacement.

ACQUISITIONS AND NEW FACILITIES

Last year was marked with tremendous growth for CRL.

In August, 2010, C.R. Laurence broke ground on a new 310,000-square-foot (28,800-square-metre) manufacturing facility on eleven acres of land in Vernon, a suburb of Los Angeles, California, near corporate headquarters. The new manufacturing facility is intended to house new growth as the company continues to expand manufacturing operations and product lines.

Also in 2010, the company completed and moved into a new 65,000-square-foot (6,000+ square-metre) manufacturing facility across the street from its headquarters complex. This facility houses the manufacturing operations of the

newly acquired Jackson Manufacturing and Blumcraft of Pittsburgh companies, two very well known and respected companies in the industry.

CRL's existing 270,000-square-foot (25,000-square-metre) manufacturing operation in Vernon continues to be fully operational. With the addition of the new manufacturing facility in 2011, CRL will have close to 1,000,000 square feet (92,900 square metres) of office, distribution, and manufacturing operations in Vernon.

CRL of Europe completed the construction of a new 75,000-square-foot (7,000-square-metre) headquarters near Manchester, England, and is now serving customers from this location.

Last August, the company also opened a new 36,000-square-foot (3,345-square-metre) facility in Ilsfeld, Germany, north of Stuttgart. An important segment of CRL's European strategy, the new facility enables CRL to stock a much larger inventory of products for European customers, and features state-of-the-art shipping equipment and computer systems for quick delivery.

CRL also continues to grow through acquisitions. In June 2010, the company acquired the Supply Division of the Italian Milan-based Vitrododi International Company, which serves several markets, predominantly across Europe, the Middle East, and North Africa. With the acquisition of Vitrododi's Supply Division, CRL has also acquired the distribution rights to the entire Toyo line of glass cutting tools. This acquisition underscores CRL's commitment to developing the European, Middle East, and North African markets, and to bringing customers around the world the finest and most comprehensive line of products in the industry.

CRL continues its quest to bring its unique range and customer service philosophy to a wider global audience, as CEO Donald Friese is often heard to say "It's just work in progress". ■



C.R. Laurence Co. Inc.

2503 E. Vernon Ave.

Los Angeles, CA 90058-1897 - USA

Tel: +1 - 323 - 5881281 - Fax: +1 - 323 - 5816522

E-mail: crl@crlaurence.com - www.crlaurence.com



GLASS-TECH

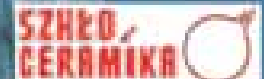
4th International Fair of Glass and Ceramics Production, Tooling and Technology

**15-17.04.2011, Kielce
POLAND**

**The only exhibition
of this kind in Poland!**

The fair is accompanied by
**Exchange of Glass and Ceramics
Artistic and Utilitarian**

Patronage
Media:



TARGI KIELCE

THE THIRD
BIGES FAIR
ORGANIZER
IN CENTRAL
-EASTERN
EUROPE



ALMOST
30%
SHARE
IN THE POLISH
FAIR MARKET



ORGANIZER OF
HIGH
SPECIALIZED
FAIR
FOR DIFFERENT
INDUSTRIES
AND SERVICES




Project manager:
Marcin Paszkowski
tel. +48 41 365 12 64
606 891 512
fax +48 41 365 13 13
e-mail:

paszkowski.m@targikielce.pl
glass_tech@targikielce.pl

www.glass-tech.targikielce.pl

GLASSPEX INDIA key marketplace for the glass industry

 **Glasspex India**, which took place in Mumbai, 12-14 January 2011, has already established itself as fixed part of the international trade fair calendar.

Some 176 exhibitors (139 exhibitors in 2009) from 19 countries presented the entire value creation chain of the glass manufacturing process, including finishing and glass applications, to 4,072 visitors from 31 countries (3200 visitors in 2009) in Hall 6 of the Bombay Exhibition Center. Renowned exhibitors such as *Bottero, DSF Refractories, Emhart Glass, Grenzabach, Hindustan National Glass, Saint-Gobain SEFPRO, Shamvik Glasstech, Bassra Machine Tools, Den Breven, CUMI, IAG, Gujarat Borosil, K-bond, Techno Trade Links* and *Zippe Industrieanlagen* stood for top quality.

The reason for this success is not least due, amongst other things, to the fair's close cooperation with *glasstec*, the world's leading international trade fair of the glass industry, which made it possible to reach and enter a dialogue with other crucial target groups for the Indian market. The discussion between industry insiders rounded off the very varied supporting program. The fact that an exhibition and conferences were held at the same location simultaneously not only meant a symbiosis for the visitors, but also a considerable time saving.

The second Glass Performance Days India (*GPD*) began on 11 January and lasted for two days, focusing on topics such as glass architecture, flat glass and solar technology – especially tailored to the challenges facing the Indian market. Over 100 high ranking national and international visitors attended on each day of GPD.

The 13 January was dominated by the '1st Solar Industry Summit India' conference, which focused on the areas of development, financing and realization of production facilities, the latest production technologies and the international solar power market as well as the current quality assurance standards. This was the first time that this technical conference, organized in cooperation with *Solarpraxis AG*, took place and was attended by about 100 representatives from Indian and international solar power companies, suppliers and investors.

Industry representatives met at the ninth conference of the All India Glass Manufacturers' Federation (*AIGMF*) to discuss latest developments from 12-14 January, where about 150 participants found out more about the topic of 'Managing Sustainable Growth'.

Last but not least, the second special show 'glass technology live goes India', which is especially popular with architects, civil engineers, planners and designers, once again proved itself to be a source of new ideas and as an insight into the future of glass and solar technology.


The next Glasspex India will take place in Mumbai 20-22 March 2013.

SAINT-GOBAIN and NSG GROUP joint expansion in Brazil

  *Cebrace Cristal Plano Ltda*, a joint venture between **Saint-Gobain Glass** and **NSG Group** in Brazil has announced plans to build a new float glass plant in Bahia State, in north-eastern Brazil, which will be the sixth float line owned by the two companies. The plant, scheduled to come on stream in the first quarter of 2013, will have a daily production of 600 tonnes of flat glass to supply the Brazilian construction and automotive markets. The world-class production facility will further consolidate Cebrace's geographic coverage of the Brazilian market, and will enable the company to keep pace with growth in the Brazilian flat glass market and to strengthen its local leadership position.

Cebrace already has four float lines in the south-east (including one under construction) and one in the south.

CENTRAL GLASS agreement for Zeledyne assets


 Japan-based **Central Glass Co. Ltd.** has announced that it has signed a definitive agreement for "the proposed purchase of certain assets owned by **Zeledyne LLC**." These assets include Zeledyne's Nashville, Tennessee, plant, which manufactures auto glass for both the OE and aftermarket segments; the Carlite aftermarket replacement glass business, according to a statement from Central Glass.

According to the announcement, the two companies expect the sale to close early this year.

Zeledyne, which previously also produced architectural float glass, left the commercial glass business in January 2010.

Terms of the deal have not been disclosed.

opportunities for high-performance glazing

 Europe's glass industry will continue to lead the development of energy saving technologies in buildings, following the newly revised EU Directive on the Energy Performance of Buildings (EPBD). The Directive provides a framework for EU Member States to follow when setting energy efficiency targets, and has been created to address the limitations of the previous Directive in 2002.

As a key member of Glass for Europe, the *NSG Group* (who acquired *Pilkington* plc in 2006) has been at the forefront of the push for EPBD, lobbying for MEPs to recognize the important role glass can play in helping to deliver the EU's targets for energy efficiency and renewable energy.

The main headlines are:

- This strong and ambitious Directive will result in huge opportunities for Europe's glass industry to market high performance glass products;
- All new buildings will need to be 'nearly zero energy' by 2020, with new requirements for existing structures;
- The implementation of the Directive in each country will create employment opportunities across Europe;
- The *NSG Group* and Glass for Europe will continue to lobby governments to ensure consistent application at national level.

The newly adopted EPBD provides a clearer framework for Member States. It contains guidelines for increased energy efficiency; with a focus on major improvements to existing buildings, as well as requirements for all new buildings to be 'nearly zero energy' by 2020. The guidelines affect all existing buildings over 50 sq.m., with member states required to ensure that minimum 'cost optimal' energy performance standards are met whenever a building undergoes a major renovation (defined as being when either 25% of the value of the building, or 25% of its surface, is being renovated). Building owners, whether commercial or residential, will also be obliged to use high performance glass whenever they replace a building's windows.

As a result of this, the EPBD provides an enormous opportunity for the glass industry to market high performance products. Glass is recognized as one of the key components impacting on the energy efficiency of buildings, and there are a number of existing products that can help to achieve the new requirements.

Under the new directive, Member States are required

to consider offering financial incentives to create more sustainable environments in existing buildings. Homeowners and small businesses may struggle to invest in more efficient windows, even given the longer-term cost savings, and the Directive recognizes the importance of government support for all energy efficient refurbishment programmes.

EPBD also requires Member States to invest more in renewable energy sources, including photovoltaic cells and solar thermal collectors, providing another boost to the glass industry. These products will play a crucial role in the delivery of 'nearly zero energy' buildings. Each country in the EU will need to put in place a system of Energy Performance Certificates (EPCs) for all buildings which are constructed, sold or rented out to a new tenant and for all public buildings. These certificates will include recommendations for energy improvement measures for major renovations or for individual building elements such as energy efficient windows. EPCs are already common in many countries, but the recast of the Directive is likely to raise their prominence in the decision-making process during the purchase or rent of buildings. Furthermore, governments could link EPCs to financial incentives that would encourage owners to upgrade their buildings with a range of measures, including high performance glazing.

With the current financial situation across Europe, the extra employment created by an increase in demand for high performance glazing products will be an additional benefit. Local economies across Europe will be boosted by an increase in production, and this in turn will create new jobs across all sectors, from manufacture through processing and distribution to installation. The new regulations will also create far better living and working environments for people across the continent. Better buildings, along with reduced energy bills, will result in an increased standard of living and improved health and well-being. This is not to mention the obvious positive environmental implications of EPBD.

The *NSG Group* will be working closely with Member State governments to ensure they meet the targets set out in the EPBD effectively and efficiently. Some areas of the Directive, including what defines 'nearly zero energy', are open to local interpretation, and its Regulatory Marketing team will be working closely with Glass for Europe to lobby Member States for a strong implementation of the guidelines. The Group will push to ensure that the glass industry is able to make the most of this huge opportunity, helping these targets to be realized across Europe, and will continue to work closely with the relevant local glass associations to realise this potential.

GLASTON Executive Management Group changes


 **Glaston Corporation's** senior vice president, Machines, and member of Glaston's Executive Management Group, Topi Saarenhovi, left the company on 1 February 2011.

In 2010, Glaston purposefully adjusted its structure to meet the current market situation and a new head of its Machines business area will not be appointed. As of 1 February 2011, the Machines business area reports directly to CEO & president Arto Metsänen.

Glaston's Executive Management Group now consists of the following members:

- Arto Metsänen, CEO & president;
- Tapio Engström, CFO;
- Günter Befort, senior vice president, Software Solutions Business Area;
- Juha Liettyä, senior vice president, Services Business Area;
- Tapani Lankinen, senior vice president, Human Resources;
- Pekka Huuhka, senior vice president, Supply Chain;
- Frank Chengdong Zhang, general manager, Asia.

CRL technical sales manager for Germany

 **CRL (CRLaurence)** has appointed Axel Elstermann as technical sales manager in Germany. Elstermann trained as an Adhesive Specialist in Bremen, and headed the product management of UV Bonding and Surface Technology at Bohle during a seven-year period, before joining UV adhesive manufacturer Panacol.

"A qualified Glassmaster (Glasmieister), Axel has a wide experience of the tools, cutting technologies and hardware for the glass and glazing industry in addition to intimate knowledge of UV Bonding technology," said Gary Dean, director of Sales & Marketing at CRL.

"The combination of his experience and our dedication to enhancing our range of professional solutions for the industry will prove a beneficial development for our customers in 2011."

CRL now operates from four locations in Europe in the areas of Manchester, UK; Stuttgart, Germany;

SEZAL GLASS change of directors



During its meeting on 13 November 2010, the Board of **Sezal Glass** accepted the resignation of company directors Mitil Chokshi and Vimla M. Shah.

R. Rengrajan and Hasmukh Shah have been appointed as independent directors of the company in their place.

During the same meeting, the board also decided to increase the authorised share capital of the company from existing INR 45 crore to INR 60 crore.

Copenhagen, Denmark; and Milan, Italy, serving the glass processing, glazing, hardware, railings and construction markets. Staff numbers in Europe are now over 70 and continue to grow.

EDGETECH I.G. regional sales manager, Middle East



Edgetech I.G. has promoted Ibrahim Issa to regional sales manager, Middle East. In his new role, Issa will be responsible for the company's sales and marketing strategies in the region, as well as providing training and equipment installation for new customers.

"Since joining Edgetech two years ago, Ibrahim's enthusiasm and knowledge have been invaluable to us as we continue to grow our presence in the Middle East," said Ramsey Bader, Edgetech's director, international sales and marketing. "This is a much deserved promotion and we look forward to his continued growth within the organization."

Issa joined Edgetech in 2008 and has held the positions of sales manager and technical service representative. He earned a bachelor's degree in business management from the Lebanese American University and has previous business experience in distribution and retail environments.

"I appreciate the opportunity to work with Edgetech," Issa said. "It is a dynamic and exciting career that provides great satisfaction. We have worked toward establishing a name for Edgetech in the Middle East and are implementing new initiatives to further develop our sales in the region."

As regional sales manager, Issa will continue to work closely with glass processors, architects and façade consultants to illustrate the many benefits of *Super Spacer*® products.



İSTANBUL

WINDOW 2011

12th International Window & Window Shade Systems, Profile, Production Technologies and Machinery, Accessories, Raw Materials and Auxiliary Products Fair

www.istanbulwindowfair.com

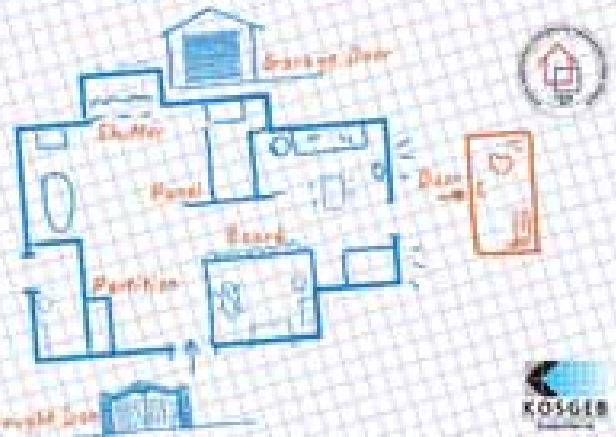
For online invitation



DOOR EXPO 2011

3rd Door, Shutter, Panel, Board, Partition Systems and Accessories Fair

www.doorexpoistanbul.com



GLASS İSTANBUL EXPO 2011

Glass Products, Production - Processing Technologies and Machinery, Auxiliary Products and Chemicals Fair

www.glassexpoistanbul.com



March 10 - 13, 2011



TE EN ISO 9001:2004

TUYAP FAIRS AND EXHIBITIONS ORGANIZATION INC. FAIR AREA - HEAD OFFICE

OVERSEAS OFFICES OF TUYAP

Tuyap Fair Convention and Congress Center
34522, Büyükdere
İstanbul - Turkey

Phone : +90 212 887 11 00
887 12 00
Fax : +90 212 886 93 59

E-mail:
Domestic Sales
yurticisales@tuyap.com.tr

Project Promotion
tanitim@tuyap.com.tr

Overseas Sales
sales@tuyap.com.tr

Advertisement Sales
reklamsales@tuyap.com.tr

Tuyap Moscow:
tuyapmoscow@tuyap.com.tr

Tuyap Sofia:
tuyapsofia@tuyap.com.tr

Tuyap Aleppo:
tuyapaleppo@tuyap.com.tr


Tuyap Thbilisi:
tuyapgeorgia@tuyap.com.tr

Tuyap Tehran:
tuyaptehran@tuyap.com.tr

Tuyap Skopje:
tuyapskopje@tuyap.com.tr



CHINA GLASS high value-added production


 **China Glass** reportedly plans to switch at least 50% of its production lines to making high value-added products by 2012, a move intended to significantly increase its gross profit margin.

The move follows its takeover of JV Investments, which, according to vice president Cheng Xin, has the technology to turn out high value-added glass products.

The gross profit margin for high value-added glass is 50-70%, he said, while the margin for construction glass - its major product - is 10%.

Daily capacity at its 17 production lines is now 6,170 tonnes, with almost 80% being construction glass. "Within two years, the proportion of construction glass in our product mix will be cut to below 50%," he said.

ISTANBUL WINDOW bringing the industry together at Tüyap

 To be held concurrently 10-13 March 2011 at the Tüyap Fair and Convention Center, Istanbul, **Istanbul Window 2011** – 12th International Window & Window Shade Systems, Profile, Production Technologies and Machinery, Accessories, Raw Materials and Auxiliary Products Fair, *Glass Expo Istanbul 2011* – Glass Products, Production - Processing Technologies and Machinery, Auxiliary Products and Chemicals Fair and *Door Expo Istanbul 2011* – 3rd Door, Shutter, Panel, Board, Partition Systems and Accessories Fair prepare to bring together the entire industry in a display area of 98,000 sq.m.

The Istanbul Window Fair, held by TÜYAP in association with the Window Manufacturers Quality Assurance Association (PÜKAB) and the Plastic Profile Manufacturers Quality Assurance Association (PÜKAD), has been growing steadily for 12 years and is set to become the largest fair of the world in its field. To be held concurrently with the Window Fair this year, Glass Expo Istanbul and Door Expo Istanbul fairs provide the glass and door industries with large-scale specialist trade shows that will meet the needs and expectations of the industry. This new triple fair concept will create the largest and most

important international marketing platform of the related industries.

The leading companies of these industries will meet under the same roof, and display the latest developments in windows, profiles, window mechanisms, production machinery and equipment, window blinds and auxiliary products, raw materials, glass and glass products, glass processing machinery and production technologies, auxiliary products and chemicals, door products, accessories and technologies, shutters, boards, partitions, panels and components.

The fairs will enable professional visitors from Turkey and all over the world to reach the products and technologies they need in various industries within one venue, and will comprise a trade show that will be chosen trade event for Western countries to reach new markets, and for Caucasus, Middle East, North Africa and Central Asia countries to reach high-quality, cutting-edge technologies and products.

With its 450 employees, 11 domestic and 6 international offices and almost 40 foreign representatives, Tüyap Inc. leads active promotion efforts towards domestic and international target audiences, and will attract many purchasing delegations and professional visitors to these fairs that present great potential for foreign capital investments.


More details and online invitations at:

www.istanbulpencerefuari.com;

www.glassexpoistanbul.com;

www.doorexpoistanbul.com.

SEZAL GLASS full float glass production capacity reached

 Gujarat's Chief Minister, Narendra Modi, visited **Sezal Glass'** float glass plant on its reaching the full optimal capacity of 550 metric tonnes of float glass per day, thus ensuring the fullest production capacity of the unit.

Sezal Glass Ltd., formerly known as *Sejal Architectural Glass Ltd.*, is a first generation glass company that started operations about ten years ago, and which also introduced innovative glass to Indian architecture and contemporary interior designs.

NSG production of windshields in Mexico increased



NSG (Nippon Sheet Glass Co.) reported on 8 December 2010 that it intends to increase its production capacity for automotive windshields in Mexico by 30% to some 2.5 million units a year.

The company said that it plans to spend USD 15 million, or about JPY 1.25 billion, to build a facility next to its Mexicali factory, with expansion to be completed in early 2012.

The new facility will produce high value-added laminated windshields, including those made with glass that absorbs solar energy, for the Mexican market, along with exports to North and South America.

BENEQ cleantech investments



Finnish Industry Investment, Via Venture Partners and private investors have invested altogether EUR 9 million in the Finnish cleantech company **Beneq**, a supplier of production and research equipment for advanced nano-scale thin film coatings used for example in solar cells, glass coatings, and flexible electronics, such as OLED lighting.

Ahonen, CEO of Beneq comments on the investment: "This investment in Beneq is, on the one hand, a definite sign of confidence in our corporate strategy, our technical expertise and our projected continued growth. On the other hand, it is also a guarantee of constant expansion and development of our services for our customer base, be that full-scale industrial production, research or R&D."

Beneq, founded in 2005, currently employs over 60 people in its headquarters in Vantaa, Finland and in its sales offices in Germany, China and the US. The company has exhibited an average annual growth rate of 93% during the last three years. In 2010, its turnover was approximately EUR 10 million. The company is currently moving from piloting to industrial production.

Juha Lehtola, investment manager at Finnish Industry Investment comments: "Beneq is a pioneer in the Finnish nanotechnology sector. The company's technology and equipment bring added value for example to the production of solar energy and many other fast-growing application areas. The company has already proven its growth capabilities and we are expecting strong export-driven growth also in the future."

Via Venture Partner has been an investor in Beneq since 2007 and has taken an active part in the company ever since. Peter Thorlund Haahr, partner in Via Venture Partners comments: "Beneq is an extremely promising company with a strong management team that has proven capable of bringing Finnish technology to the global scene. We hope to find equally good investment opportunities in Finland in 2011."

VITRUM 2011 keeping pace with progress



The dates for **Vitrum 2011** – 26-29 October – were announced at *glasstec* in autumn 2010 and, thanks to encouraging signs from the marketplace, the fair is on the way to becoming an interesting expo, with the latest inventions and events on show.

Markets are picking up – emerging countries are driving the global recovery; even the US is showing signs of renewed vigour, while Europe, although slowly and unevenly, is starting to see the light at the end of the tunnel.

Vitrum will also be the showcase for the best of Made in Italy, a reality that is preparing for a year of considerable growth around the world. Demand for Italian technology has taken off with a vengeance and manufacturers are pondering major investment plans that will enable them to demonstrate their technological leadership.

The organization of Vitrum is also keeping pace with progress, with the aim of simplifying the life of visitors from around the world and making their stay in Italy more pleasant.

Starting this year, participants will be able to register on line and obtain accreditation immediately along with their own code – to facilitate entrance procedures to the fairgrounds and avoid long waits in line. Once registered, visitors will also be able to buy a personalized travel and hotel package. Additionally, since the opportunities for cultural tourism or pure enjoyment that Italy offers have very few rivals in the world, it will be possible to take advantage of special rates offered by Ventana Travel for Vitrum visitors who want to add on a pleasant weekend of relaxation in Milan, Florence, or Rome, the great cities of art; the Lombardy lake district; or the many other interesting locations Italy has to offer.



International trade show specialized in machinery, equipment and systems for flat, bent and hollow glass and in glass and processed products for industry.

Celebrating its 32nd anniversary, Vitrum has gone through a variety of scenarios witnessing a long series of changes in national and international markets. The new Vitrum show will pay homage to market development, fully aware that the world has changed and the glass industry is now steering in new directions and measuring up to new players.

Vitrum 2011 is all about stimuli for innovation and technology, increasingly stronger competition, the presence of new players, the pickup in consumption and a major impulse to industrial production by the green economy.

17TH SHOW



Segreteria Generale
Via Petitti, 16 - 20149 Milano Italy
Tel. +39-02.33006099
Fax +39-02.33005630
www.vitrum-milano.it
e-mail: vitrum@vitrum-milano.it



fieramilano

26-29 OCTOBER 2011



Zhijiang premises, in Zhejiang Province, China

Zhijiang: specialists in go for international

Hangzhou Zhijiang Silicon Chemicals, located in Zhejiang Province, China, is a hi-tech and joint-stock company established in 1996, and is specialized in sealant research, production and sales. Since its founding, Zhijiang has become one of the most important domestic and international manufacturers and suppliers of sealants, offering a wide range of new chemical products for construction, automobile and machinery. The company's trademarks Jinshu and Zhijiang are registered in more than 30 countries, such as the European Union, United States, India, Andorra and more.

Zhijiang production unit occupies an area of 25,000 square metres and has an annual production capacity of more than 30,000 tons. Company turnover in 2009 totalled USD 76.13 million.

Zhijiang has 340 employees:

Technology Research	40
Quality Control	30
Workers	170
Administration	40
Sale	50
Others	10
Total	340





With a special reception dinner held during the recent edition of glasstec, Hangzhou Zhijiang Silicone Chemicals introduced its company, mission, products and philosophy. Glass-Technology International was among the invited guests at this event.

sealants expansion



Zhijiang's new factory in Linjiang industry area which covers 45,000 sq.m.

2011 is a special year for the company, as it will be celebrating 15 years in the sealant industry. The company now one of the strongest sealant suppliers in China, as well as working more with the overseas market too. Because of the top quality and service that Zhijiang offers, its current produce capacity can not meet clients' needs, and, as a result, its third factory - Hangzhou Zhijiang

New Material Co., Ltd. started trial production in 2010.

On 18 May 2011, the company will be holding its 15th anniversary celebration and the opening ceremony of the Linjiang new industry base.

Marketing Network

Zhijiang: specialists in sealants go for international expansion

60

PRODUCTS AND QUALITY

There are eight main product series, which can be further divided into more than 30 subordinate categories. These have been widely used in construction, decoration, automotive, rubber and electronic industries. Quality takes priority over everything else. The quality of raw material, intermediate and finished products is continuously tested by Zhijiang's quality control team, with the company being certified to meet the ISO 9001:2008 Quality Management System, ISO14001:2004 Environmental Management System, GB/T28001:2001 Occupational Health and Safety Management System. Zhijiang's IG sealant also meets with EN1279-2, 3, 4 CE certification.

Zhijiang's product range includes:

- Silicone sealant
- Acrylic sealant
- Polysulphide sealant
- Butyl sealant
- Polyurethane sealant
- Modified polyurethane sealant
- Butyl waterproof tape
- Anchor adhesive
- Epoxy structural sealant for constructions
- Gasket silicone sealant

SILICON SEALANT FOR THE DIY MARKET

This series of one-part, neutral and acetic curing silicone sealants has excellent adhesion to most construction materials without the need for a primer. It is generally used for doors, windows, kitchen utensils, sanitary equipment, ceramic, automotive, marine, packaging, advertisement, family decorations, and other materials.

ACRYLIC SEALANT

This acrylic sealant is for general use, such as doors and window frames, walls, windowsills, prefab elements, stairs, skirting, cor-

rugated roof sheets, chimneys, conduit-pipes and roof gutters. It can also be used on most construction materials, such as brick, concrete, plasterwork, etc.

SILICON SEALANT FOR CURTAIN WALL AND INSULATING GLASS

This series is specially designed for general glazing and weatherproofing in aluminium, stone, glass and other kind of curtain walling, as well as for insulating glass. It is also used for sealing and bonding metal board, aluminium, glass, granite and other construction materials.

SEALANT FOR INSULATING GLASS

This series includes butyl sealant, two parts polysulphide sealant and silicone sealant. It is especially for structural glazing and joint sealing for insulating glass.

POLYURETHANE SEALANT FOR AUTOMOTIVE

The one part, moisture curing polyurethane sealant is mainly used for bonding and sealing windshields, side and rear windows of cars, buses, trucks such cool storage and container, marine applications. It is also used for sealing waterworks, sewerage, runways, bridges, parks, pipelines and so on.

POLYURETHANE SEALANT FOR CONSTRUCTION

This one part, moisture curing polyurethane sealant is mainly used for bonding and sealing curtain walls, steel structural, concrete and stone gaps, and many other kinds of construction materials, such as metal, wooden floors, chinaware, bricks, tiles and more.

TECHNOLOGY

Zhijiang has established a top-ranking Laboratory and Provincial-Level Enterprise Technology Center, with a highly qualified pro-





Advanced logistics system



Electronic extension machine from Japan, and advanced testing machine



Automatic production line for butyl sealant and hot melt filling machine



Automatic production line for silicone sealant

fessional team consisting of professors and specialists, with strong product development, innovation and marketing service capability.

The company cooperates with Zhejiang University (Zhejiang Silicone New Chemical Material R&D Centre), The Science & Technology University of China (Zhejiang Silicone Cooperation Base), The Institute of Chemistry of The Science Academy of China (Zhejiang Silicone Co-Experimental Area).

MARKETING NETWORK

Zhijiang is an important supplier for curtain-wall companies, glass manufacturers, land agents, decoration companies and automobile manufacturers in China and internationally, such as in Japan, European, the Middle East, Southeast Asia, South- and North America, and more. Company products have been used in buildings such as The Russian Federal Building, Air rail Center Frankfurt, the Administration of the State Bureau of Technical Supervision and in the Jiangsu Building in Shenzhen City, Beijing TV Center (which was used to broadcast the 2008 Olympic Games), the Lasa airport in Tibet. ■

Butyl waterproof rubber belt



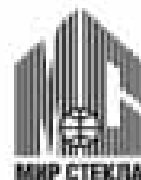
Hangzhou Zhijiang Silicone Chemicals Co. Ltd.

Huangjiahe, Shushan Street
Xiaoshan District - Hangzhou City
Zhejiang Province - 311203 China
Tel: +86-0571-82392772,82393580
Fax: +86-0571-82392772,82363371
Email: export@chinazhijiang.com
www.chinazhijiang.com/en/index.asp



MIR

13TH INTERNATIONAL EXHIBITION
FOR GLASS PRODUCTS,
MANUFACTURING, PROCESSING
AND FINISHING TECHNOLOGY



WORLD OF GLASS

STEKLA

June 6–9
2011

www.mirstekla-expo.ru

Venue:
Expocentre Fairgrounds
Moscow, Russia



Organizers:



Russian Union
of Architects



Ritec: low maintenance surface technologies

Both the industry and the end-users of glass are well aware that there is a serious need for surface protection in order to maintain the original properties of the glass, as well as to resist staining and discolouration. This article gives our readers a brief introduction to ClearShield – the company's low-maintenance glass – and a few examples of how it can be used in the architectural and marine sectors.

RITEC INTERNATIONAL

Ritec: low maintenance surface technologies

64

“Our aim is to develop and market internationally ‘non-stick’ surface technologies for application to new and existing surfaces.”

In 1987, Ritec International was formed by Stephen and Karen Byers. For over 25 years, the company has developed the market for glass surface protection in the flat glass industry, effectively leading the industry and gaining immense field experience with its high quality technology, the *ClearShield System*.

Ritec’s *ClearShield Low-M[®]* (Low-Maintenance) *Glass* has gained wide recognition and acceptance in the processing of glass as the industry and end-users of glass have become increasingly aware of the need to protect glass so that it keeps its promise of clarity, visibility and cleanliness over time.

Committed to product development and innovation, Ritec has not only built on its expertise for the protection of glass but also developed a fully integrated system for the renovation, protection and maintenance of glass. Its range of quality products provides solutions to all glass users, whether applied in the factory or onsite.

Today, hundreds of glass processors and fabricators worldwide enjoy the benefits of the *ClearShield System* in a wide range of applications including architectural, decorative, shower enclosure, marine, railway and residential glass.

The performance of *ClearShield* is now well recognized by the industry, and has proven

results based not only on laboratory tests but more importantly on years of experience.

Because of the worldwide demand for surface protection technologies, Ritec has an extensive network of joint venture and marketing partners globally offering Ritec products.

Ritec’s expertise has allowed the company to develop technologies for the renovation, protection and maintenance of other surfaces. This includes the *Ritecoat System* for metals and powder coat surfaces, the *VoltShield System* for ceramic electrical insulators, *SE-550 Silicone Eater* and *Ritepolish*, a versatile surface cleaner.

WHAT IS CLEARSHIELD

Ritec’s award-winning *ClearShield System* has been specially developed for the renovation, protection and maintenance of both new and already installed glass.

ClearShield protected glass:

- is always easier to clean and keep clean;
- stays cleaner for longer; and
- resists staining and discolouration.

Benefits from choosing *ClearShield*:

- added value for higher profits for glass manufacturers and fabricators;
- unique renovation solutions for already installed surfaces;
- sales, marketing and technical support.

A comprehensive package for glass manufacturers, processors and fabricators:

- superior quality of glass for added value to help increase sales and profits;
- a technology that has proven its claims with

more than 25 years experience worldwide;

- unique Selling Points to differentiate from the competition;

- a system that offers personalized solutions to all glass users;

- safe and non-hazardous products;

- versatile methods of application that can adapt to all volumes of production;

- unique renovation solutions for already installed glass;

- local supply, training





Because of this, cleaning glass becomes more difficult and, therefore, visibility deteriorates.

ClearShield is a polymeric resin and, when applied to ordinary glass, it cross-links to form a strong chemical bond. ClearShield is completely transparent, chemically inert, non-hazardous and UV stable. Unlike a coating, ClearShield becomes part of the glass so will not peel, flake or crack.

The result is ClearShield Low-M® (Low-Maintenance) Glass that prevents contaminants from bonding to the surface and limits further damage caused by corrosion and chemical attack. Dirt can easily be removed using normal cleaning methods.

ARCHITECTURE AND BUILDINGS

For architects, building contractors, building owners and facilities managers, ClearShield gives the following benefits:

- reduces construction and maintenance costs and delays;
- keeps glass looking like new and pristine appearance of façades;
- increases satisfaction of tenants and occupiers.

During construction

Building contractors face the problem of concrete splatter, cement dust and slurry and other types of alkaline construction materials damaging and corroding the surface of glass on building sites.

ClearShield helps to reduce:

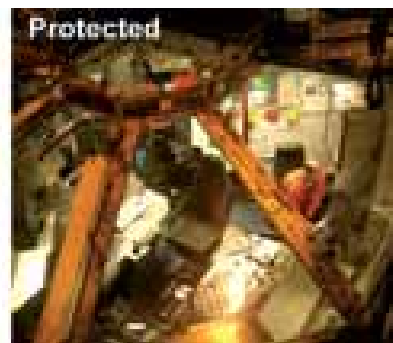
- remedial work and costly replacement for glass surface damage;
- costs from unsatisfactory final builder's clean or call-backs;
- delayed certification on glazing handover.

After construction

Inevitably, unprotected glass becomes contaminated over time, ruining a building's appearance. Typical contaminants include concrete and silicone run-off, traffic fumes, tree sap and bird lime.

The result is costly and cleaning becomes more and more difficult. With ClearShield already installed however, this means:

- less use of access equipment to maintain the glass clean;



and subsequent sales, marketing and technical support through international network of distributors;

- effective demos for the sales force, show-rooms and trade exhibitions.

HOW IT WORKS – GLASS CORROSION

Just as metal rusts, glass is subjected to a corrosion process caused by reactions between the glass surface and gases in the atmosphere. Even a single droplet of moisture on unprotected glass can produce sufficient damage to be visible in good lighting:

The surface of glass is not smooth and consists of microscopic peaks and potholes. Both organic and inorganic contaminants fill these potholes and chemically react with the glass, firmly bonding to the surface.

Ritec: low maintenance surface technologies

66

- increased effectiveness and reduced frequency of window washing;
- glass stays cleaner for longer.

ClearShield protection

The benefits of ClearShield Low-M go far beyond its easy-to-clean properties. It protects the glass surface from damage caused by corrosion, weathering and chemical contamination.

For glass already contaminated during or after construction, Ritec's specialist onsite team can renovate contaminated glass to its original 'as-new' appearance and then provide effective protection from future contamination.

MARINE

Princess Cruises

The first Princess Cruises ships to have ClearShield were the Regal Princess and the Crown Princess. Exterior glass of these ships was renovated and protected in 1987. Since then, more than 10 other Princess Cruise ships have had the benefit of ClearShield protection.

"Not only do the operators of these ships appreciate the benefits in keeping windows clean, but also the considerable savings in manpower through reduced maintenance," said the company's Project Manager.

ACL Atlantic Conveyor

The Atlantic Conveyor (owned in 1985 by Cunard but purchased by ACL ten years later) was treated on-site with ClearShield.

The Chief Officer of Cunard was impressed: "The improvement in visibility through our bridge windows, in rain and heavy weather, has to be seen to be believed. A further bonus is not having to use precious manpower to wash the

windows... we have just completed two winter crossings of the North Atlantic without having to once wash them manually. It is truly pleasing to see a product that really lives up to its marketing promises."

Silja Lines

The exterior glass on a number of Silja ships had ClearShield applied to them. In addition, some interior glass, for example, in swimming pool areas or restaurants, were also treated so cleaning frequency is significantly reduced.

In total, almost 1,000 square metres of glass on four ships were treated. Now the crews have a clearer, safer view from the bridge and passengers can enjoy a better sea view. ■



Ritec International

Innova House, Innova Science Park
4 Kinetic Crescent
Enfield EN3 7XH

United Kingdom

Tel.: +44 - 20 - 83448210

Fax: +44 - 20 - 83448211

E-mail: info@ritec.co.uk

www.ritec.co.uk



KURARAY EUROPE GMBH, DIVISION TROSIFOL

Energy savings are an essential part of any new or renovated building. These can be obtained by means of insulation, special glazing and the use of particular materials. Trosifol, a division of the Kuraray Group, presented products, which guarantee higher efficiency with regards to sound control, and even increasing safety during energy blackouts with its new PVB film, which is self-luminous in the dark.

Trosifol: developments in technology and uses of PVB films

Access and information are visible even in poor lighting or no lighting at all

Trosifol: developments in technology and uses of PVB films

68

Founded in 1926, the Kuraray Group, with headquarters in Tokyo, Japan, and workforce of about 7,500 employees, is the world's biggest producer of water-soluble synthetic polyvinyl alcohols - an initial product for many applications in day-to-day living. This activity, pursued in the Chemicals and Resins division, accounts for a considerable proportion of overall business. These products are further processed for a variety of applications, including paints and printing inks, computer housings, food packages, LCD monitors and also pharmaceutical products.

In Europe, operating business, sales and the production of chemical specialities are handled by Eval Europe in Antwerp and "Kuraray Europe GmbH, in Frankfurt. The Trosifol division, which joined Kuraray Europe at the beginning of 2005, is firmly integrated in the strategy of the internationally successful Kuraray Group. Kuraray Europe is the leading supplier of polyvinyl alcohol (PVA) and polyvinyl butyral products in Europe. Both of these specialized chemical products are crucial for the production of paper, textiles, packaging materials and PVB film for laminated safety glass as well as for paints, printing inks, adhesives, cosmetics and ceramics.

SELF-LUMINOUS FILM FOR ARCHITECTURAL APPLICATIONS AND SAFETY

Lumineo marks a new departure for Trosifol in its appeal to architects. As the leading supplier of PVB films in European architectural glazing, the PVB manufacturer of the Japanese Kuraray Group is targeting this new self-luminous PVB film directly at architects, designers and creative minds in order to inspire new trends in the design of architectural glazing.

The new film product achieves its effect with a special formulation (European patent pending). *Lumineo* is inspirational, the basis of new ideas. At the same time, *Lumineo* meets the criteria of the German Lists of Construction Products of the DIBt (German Institute of Construction Technology). Safety certificates to EN 356 and EN 12600 are available on request. A test report on the afterglow properties of *Lumineo* is also obtainable (BAM, DIN 67510-4, sub-classification A, Ref. VIII 1E 2077 of March 2009 for "Phosphorescent pigments and

Fig. A
Stairwell with electric lighting on

Fig. B
The same stairwell in a simulated black-out - *Lumineo* illuminates the environment

Figs C and D
In a normal lighting situation and without lighting



Figure A



Figure B



Figure C



Figure D

products", such as emergency exits and escape routes). Developed to European standards for safety glass, it can be combined with other Trosifol films to modify optical and acoustic properties, thus opening up entirely new creative scope for the design of laminated safety



glass. Lumineo reduces the need to install additional light sources in public areas for emergency situations, e.g. power failures. By combining safety and design scope with light transmittance values of up to 60 per cent, Lumineo is ideal for use in interior architecture and in public buildings in which design and safety are of equal importance.

Lumineo can be employed on façades, roofs, balustrades and balconies and in any glazing applications at all, indoors and outdoors.

Trosifol® Lumineo is available in standard widths of 1,000, 1,600 and 2,250 millimetres, each in a thickness of 0.76 millimetres. The roll lengths are 20 metres and 200 metres and are supplied with a PE interleaved film.

Berlin Central Station and its extensive use of glass with Trosifol PV film

IMPROVED ACOUSTIC FILM

Decisive plus for greater efficiency and less noise

Sound insulation with Trosifol Sound Control (SC) is now better than ever before. At *Glasstec 2010* in Düsseldorf, the Trosifol Division of Kuraray Europe GmbH presented an improved version of its own sound protection film, the new SC⁺. It significantly enhances the efficiency of the commercial-scale production of acoustic laminated safety glass.

The improved efficiency of the new multi-layer Trosifol SC⁺ PVB film will particularly benefit high-performance processors specializing in jumbo widths. Combinations with



The motor racing stadium in the Emirate of Abu Dhabi



white translucent, coloured or colourless Trosifol PVB films are of course possible. The new SC⁺ film thus extends the existing Trosifol sound protection range to include a productivity-boosting variant without compromising on the accustomed outstanding optical properties of clarity, transparency and light stability.

Trosifol SC⁺ is a multi-layer film developed specifically for efficient processing and displays its huge advantages particularly in the high-performance processing of jumbo widths. This makes it the ideal complement to Trosifol's existing sound protection range. It goes without saying that the outstanding sound insulation values combined with the familiar safety characteristics are retained by the film's new multi-layer composition. In composition 44.2, laminated safety glass satisfies safety class P2A in conformity with EN 356 and class 1B1 in conformity with EN 12600. Test certificates from MPA Darmstadt can be furnished on request.

In corresponding ISO glazing and depend-

ing on composition, a laminated safety glass (LSG) produced with SC⁺ achieves sound insulation values of up to 50 dB. This enables glass processors to produce LSG with outstanding acoustic and safety characteristics in a process identical to that for the proven Trosifol BG range.

Trosifol SC⁺ is available in a roll width of 3.21 metres and a roll length of 230 metres as a cooling film. It is 0.76 millimetres thick. ■

TROSIFOL
PVB FILM FOR LAMINATED SAFETY GLASS

Kuraray
Europe GmbH
- Division
TROSIFOL

Mülheimer Straße 26 - D-53840 Troisdorf - **Germany**
Tel.: +49-2241-25550 - Fax: +49-2241-2555299
E-mail: trosifol@kuraray.eu - www.trosifol.com

The Art
Museum in
Linz, Austria



CALL
FOR
PAPERS
2011

GPD Glass and Solar in Sustainable Development

The Largest International Conference on Architectural, Solar and Automotive Glass

17-20 JUNE 2011 | CONFERENCE | GLASS EXPO
16-17 JUNE 2011 | WORKSHOPS
TAMPERE, FINLAND
www.gpd.fi

Main Topics

GLASS IN
ARCHITECTURE



- Architectural Challenges & Solutions
- Structural Engineering – Case Studies
- Architect Forum
- Energy Performance in Buildings
- Façade Session: Advanced Architectural Glass Applications
- New Products and Applications

SOLAR
AND GLASS TECHNOLOGY

PROCESSING

AUTOMOTIVE
AND OTHER VEHICLES

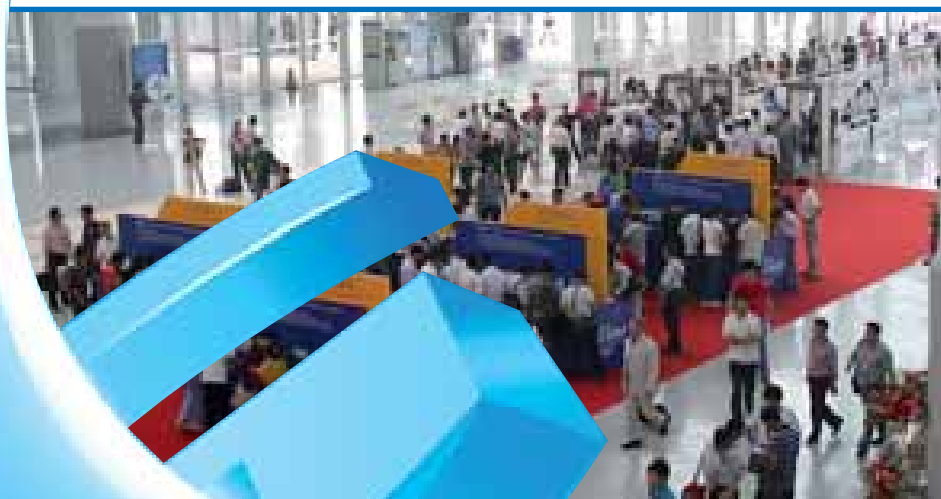
CHANGING MARKETS

INVESTOR FORUM

Submit your abstract at www.gpd.fi

GPD Networking Business & People

China Glass: meet again



The 22nd China Glass will be held 11-14 May 2011 at the Shanghai New International Expo Centre. The Chinese glass industry is now recovering from the global economic crisis and China Glass 2011 will meet the needs of Chinese and overseas exhibitors with new machines, equipment, components, spare parts, as well as solar technologies including photovoltaic glass, panels, sealing materials, cell production, processing technology and measuring and testing systems.

global glass circles in Shanghai



As for all previous events, both Chinese and international companies will exhibit their new technologies and innovative products. For example, China Yaohua manufactures five series of products, especially Low-E, Sun-E, self-cleaning glass, borosilicate float glass and alumino-silicate float glass, Taiwan Glass Group has developed new products including stone-imitating glass and wood-graining glass and marbling glass, Weihai Blue Star produces tempering off-line Low-E coated glass, solar control coated glass, modules of film solar

REVIEW OF CHINA

Glass 2010 in Beijing

China Glass 2010 was held in Beijing on 4-7 June and was the 21st event. Its exhibition surface area was up to 65,000 square metres with 832 exhibitors from 26 countries, and 21,233 professional visitors from more than 90 countries. Twelve technical seminars on glass production innovations and solar-photovoltaics attracted hundreds of professionals including decision-makers, engineers, distributors and agencies.

Another grand gathering of the glass circles worldwide will be staged at the Shanghai New International Exhibition Centre on 11-14 May 2011 with China Glass 2011. The exhibition is organized by the Chinese Ceramic Society and run by the Beijing Zhonggui Exhibition Co., Ltd.

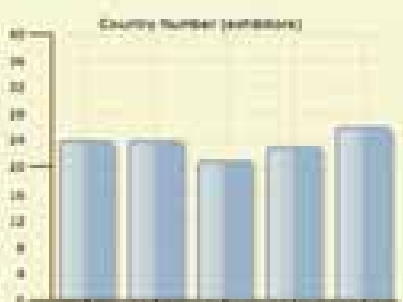
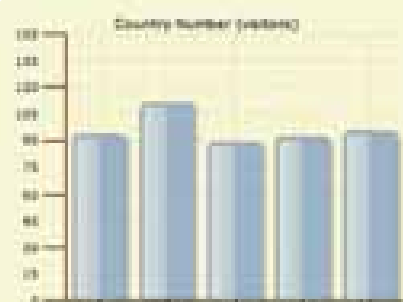
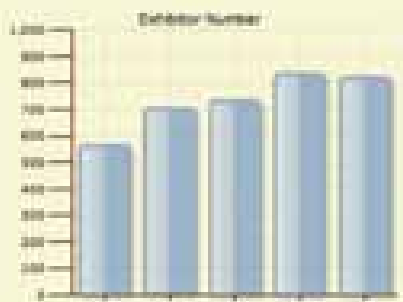
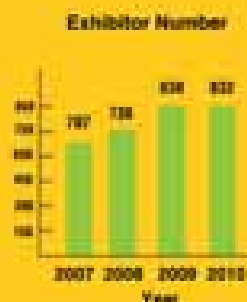
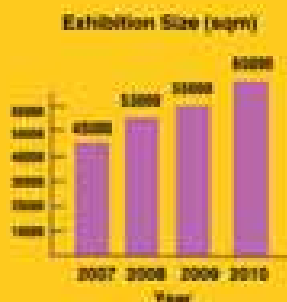
This exhibition is faced with a situation of overall recovery of the global economy, especially with regards to China's implementation of its package plan to meet the international financial crisis. China has presently gained a rapid increase in its national economy and the glass industry has also obtained significant economic benefits.

As of the end of January 2011, 714 companies from 25 countries have decided to participate in China Glass 2011, and all five exhibition halls (W1-W5), as well as five temporarily-built exhibition tents, have been allocated. The exhibition area is expected to reach 68,000 square metres.

cells, Ruitai features fused cast, monolithic, basic, silica- and alumina-silica-based refractory materials, North China finished technological tests on its TCO glass production line—the first one of its kind in China, Polytron Technologies (Xiamen) will display their advanced LED technique, PPG and Teichmann provide complete float glass solutions, oxy-fuel firing and CVD coating technologies, Glaston Group developed glass tempering, heat-bending production lines, especially ultra-low-E glass products, Grenzebach features cold-end equipment for float glass lines, especially production lines for thin film

China Glass: global glass circles meet again in Shanghai

CHINA GLASS TRACK RECORD (2007-2010)



United States, United Kingdom, Germany, France, Italy, Switzerland, Austria, Belgium and Japan, but also developing countries including Turkey, Indonesia, Jordan, India, Monaco and Egypt. As before, Italy, Germany and the United States will have State pavilions at the show.

Associated with the exhibition there will be a number of technical seminars, as well as an International Symposium on Advanced Glass



photovoltaic cells, new generation coating line "Apollon" with excellent performance was developed by Leybold.

Even now, during the process of global economic recovery, 5,000 square metres of exhibition space have been sold to overseas exhibitors, and over 160 exhibitors from 25 countries have allocated their booths in Hall W1. These international companies come from not only developed countries such as the



PRODUCT RANGE

on show

GLASS PRODUCTS AND APPLICATIONS

Architectural and decoration glass; Fenestration and hardware fittings; automobile glass and industrial glass; hollow glassware and glass containers; electric lighting glass and special glass.

PRODUCTION LINES AND MACHINES FOR FLOAT FLAT GLASS AND CONTAINER GLASS

Batch weighing and mixing systems; furnace charging, melting, homogenizing, combustion, boosting, bubbling system and related technology; colour/flint glass forehearth and annealing lehrs and decorating lehrs etc; various forming and cold-end processing equipment including flat glass washing, cutting, edging, bevelling machines and inspection systems; I.S. machines and glassware forming equipment, including gob feeders, pressing, blowing, burn-off, crack-off, rim toughening and rim polishing machines; quality inspection systems and measurement, transportation and automatic control systems for raw materials, semi-finished and finished products; environmental protection and multi-purpose utilization.

GLASS PROCESSING EQUIPMENT

Various pre-processing machines for flat/ bending glass including cutting, grinding, bevelling, polishing, drilling, engraving, washing/drying and auxiliary facilities and related tools; deep processing machines including tempering, laminating, decorating, coating, insulating, mirror-making, sand-blasting and processing of doors and windows.

SPECIAL GLASS AND PROCESSING EQUIPMENT

TV glass; STN and TFT ultra thin glass substrate and their precision cutting and beveling machines; low-E coated glass and its online coating machine; patterned glass and wired glass and rolling machine with a wired feeder; self-cleaning glass, antibacterial glass, fire-proof glass, LED glass and related processing machines and technology.

SOLAR GLASS AND PROCESSING EQUIPMENT

Photovoltaic glass and machines, solar PVB thin film for photovoltaic glass, PV module, photo-active coating, vacuum laminator, roll laminator/autoclave system, vacuum bag/autoclave, thin film cell technology, crystalline cell module technology, solar glass panel, measuring and testing technology/software.

REFRACTORIES, RAW MATERIALS AND SUBSIDIARY MATERIALS

Various high-grade refractories including electrofused refractories, sintered refractories and silicon brick, a complete AZS brick, superstructure block, suspended wall system for doghouse feeder, curtain wall, thermocouple brick, repair blocks, shadow walls, canal, tweels, flat arches, cover tiles, lift rolls, lehr rolls, spouts, orifice rings, plungers, fired alumino-silicate bricks, port bricks, tin batch bricks and so on.

Melting Technology. Moreover, the organizers of the Glass Performance Days (GPD) will, as usual, hold GPD China 2011 in Shanghai on 9-10 May 2011.

China Glass has also maintained good cooperation with worldwide news media and major foreign websites and magazines, as well as leading Chinese media, have released related reports and photos or opened special columns to promote China Glass, including Italian GlassOnWeb, Glass-Technology International, Glass Machinery Plants & Accessories, German OGIS, DGG Journal, m+a Data Bank for International Tradeshow and Expositions, Glass Magazine of the NGA, and Glass Worldwide, Glass and Asian Glass of the UK, Indian Glass Bulletin, Egyptian Middle East Glass Magazine, China Building Materials, Building Doors Windows Curtain Walls & Equipment, Doors Windows Curtain Walls & Equipment, Architectural Glass and Functional Glass, Doors Windows Curtain Walls, International Glass Manufacturing, Glass Industry, Qinquangdao-based Glass and Screen Printing Industry.

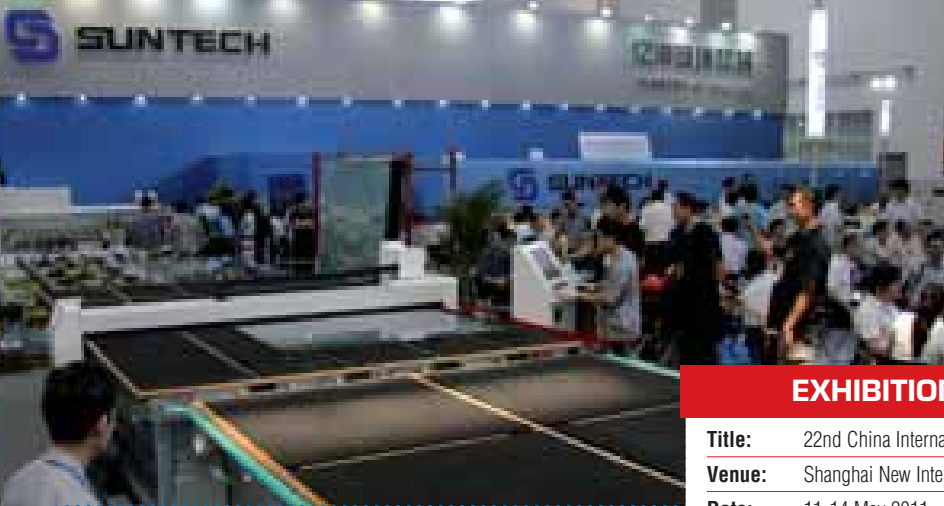
Up to date, the following Chinese companies have registered for China Glass 2011: China Triumph, Jinjing Group, China Yaohua Glass Group, Taiwan Glass, CSG, Shanghai Yaohua Pilkington, Weihai Blue Star, China Luoyang Float Glass Group, SINOMA Advanced Materials Co., Ltd., SINOMA Equipment & Engineering Corp., Ltd., Fuyao Glass Group, Ruitai Materials Technology Co., Ltd., Chengdu Guibao, Zibo GT, Hangzhou Zhijiang, Zhengzhou Dongfang Ancai, North Glass, Luoyang Mingte, Luoyang Land Glass, Guangdong Suntech, Guangdong Ivaco, Qinquangdao Yuntong Glass Mech-Electro, Guangdong Fushan Machinery, as well as international companies such as Glaston, Grenzebach, Benteler, Forma, Nikolaus Sorg, Zipe, Lisee, RHI, Asahi, Leybold, Global Combustion, TEKA, SEPR, ABB, CNUDEFECO, F.I.C., Shimadzu, U.S. Borax, LAHTI Precision, Bystronic, Henry F. Teichmann, PPG,

CHINA GLASS DATA

Year	Display Area (m ²)	Year	Total Area (m ²)	Country	Exhibitor Number		Visitor Number				
					Domestic	Foreign	Domestic	Foreign			
1999	2008.4-23-28	Beijing	10280	China	24	234	234	588	93	17638	24720
1999	2007.5-18-19	Shanghai	4600	China	24	672	231	707	111	18719	21292
1999	2008.4-18-22	Beijing	12444	China	21	488	248	734	89	18768	22420
2008	2009.3-13-14	Shanghai	14420	China	25	456	220	634	92	22247	23710
2010	2010.3-04-07	Beijing	14284	China	28	596	228	634	96	22826	23820

China Glass: global glass circles meet again in Shanghai

76



Toledo, Bottero, FENZI, OCMI-OTG, Olivotto, Intermac, Fives Stein, Biebuyck, P-D, Saint-Gobain, in addition to some newcomers, such as Herbert Arnold from Germany, Fletcher-Terry from the United States, Parkinson-Spencer from the United Kingdom, and ENG and CMS from Turkey. ■

EXHIBITION INFORMATION

Title:	22nd China International Glass Industrial Technical Exhibition
Venue:	Shanghai New International Expo Centre (SNIEC)
Date:	11-14 May 2011
Contact:	Tel: +86-10-68348131 Fax: +86-10-68349359
Website:	www.chinaglass-expo.com

THE CHINESE Ceramic Society

The Chinese Ceramic Society (CCS) is an academic, non-profit-making corporate and social organization for professionals engaged in the science and technology of inorganic non-metallic materials.

As an affiliate of China Association for Science and Technology, CCS is designed to rally the efforts of professionals, promote science and technology, raise science awareness among grassroots, cultivate talents, and adapt science and technology to economic development.

HISTORY

Founded in 1945 under its present name, CCS was renamed to Chinese Silicate Society in 1956, and resumed its original name once again in 1991.

ORGANIZATION

The CCS National Congress, the supreme governing body of the Chinese Ceramic Society, convenes every five years. The Board of Directors elected by the National Congress is empowered to carry out the resolutions of the National Congress and exercise leadership when

the congress is adjourned. Currently, CCS owns about 20,000 individual and 49 group members, 21 sub-committees and 3 working committees. There are five departments under CCS's headquarters.

TASKS & ACTIVITIES:

- 1 To conduct technical and academic exchange and cooperation at non-governmental level.
- 2 To edit and publish professional books and periodicals;
- 3 To carry out continuing education and scientific popularization;
- 4 To provide decision-making as well as technical consultations and services;
- 5 To scout for talents, safeguard the legitimate rights of the professionals, and commend and reward those who excel in their work;
- 6 To hold exhibition (s) and demonstration(s) at home and abroad. To hold more than 20 national academic conferences a year. To consecutively sponsor the International Symposium on Cement and Concrete, the International Conference on High-performance

Ceramics and the International Conference on Refractories, etc. To consecutively organize the China International Glass Industrial & Technical exhibition, the China International Glass & Enamel Industrial & Technical Exhibition and the China International Powder & Powder Industry Technology Exhibition etc. CCS's national periodicals include the Journal of the Chinese Ceramic Society; Bulletin of the Chinese Ceramic Society, etc. The professional and local branches of CCS run their own journals.

STATE MEMBERSHIP

CCS maintains close and cooperative relations with counterparts in a dozen countries, it is also a member of the following organizations: International Commission on Glass (ICG) - International Ceramic Federation (ICF) - Unified International Technical Conference on Refractories (UNITCER) - International Organization on Crystal Growth (IOCG) CCS is on the executive committees of the above international committees.

The logo for China Glass, featuring the word "China" in a white, italicized sans-serif font above the word "GLASS" in a green, italicized sans-serif font. A stylized graphic of three vertical bars of increasing height is positioned to the left of the text.

China
GLASS

CHINA GLASS 2011

Shanghai New International Expo Centre
May 11-14, 2011

Organizer: The Chinese Ceramic Society
Contact: Mr. Zhou Qinghong, Mr. Liu Jie
Tel: +86-10-68348131, 68348139
Fax: +86-10-68349359, 68345392
www.chinaglass-expo.com
E-mail: ceramsoc@163.com

Suppliers Guide

Yellow pages

78

LISTING IN THIS SECTION IS RESERVED FOR ADVERTISERS OF THIS ISSUE.

For further information please contact our Advertising Department:

Tel: +39 - 02 - 66306866 • Fax: +39 - 02 - 66305510
E-mail: publications@glassonline.com • www.glassonline.com

The listing in this "Suppliers Guide - Yellow Pages" is free of charge and reserved to advertisers of this issue.

The "Suppliers Guide - Yellow Pages" promotes their products and services worldwide.



L'insertion dans le "Guide des Fournisseurs" est gratuite et réservée aux annonceurs de ce numéro. Le "Guide des Fournisseurs" assure la promotion des produits et des services proposés par les annonceurs dans le monde entier.



Die Anzeigen im "Verzeichnis der Lieferanten - Gelbe Seiten" ist kostenlos und den Inserenten vorliegender Ausgabe vorbehalten. Das "Verzeichnis der Lieferanten - Gelbe Seiten" wirbt weltweit für die Produkte und das Service seiner Inserenten.



La introducción en la "Guía de los Proveedores" es gratuita y está reservada a los Anunciadores de este número. La "Guía de los Proveedores" promueve sus productos y servicios en todo el mundo.

GLASS MANUFACTURING AND PROCESSING

PRODUCTION ET USAGE
DU VERRE

GLASHERSTELLUNG UND
VERARBEITUNG

PRODUCCIÓN Y TRABAJO
DEL VIDRIO

► PROCESSED SHEET GLASS

*Feuilles de verre traitées
Bearbeitete Glasplatten
Hojas de vidrio trabajadas*

Mingte Glass Tech.

► SHOWER DOORS

*Portes de douche
Duschtüren
Puertas para duchas*

Mingte Glass Tech.

STOCKING, HANDLING AND MOVEMENT

DÉPLACEMENT ET STOCKAGE

INNERBETRIEBLICHER
TRANSPORT
UND LAGERUNG
TRANSPORTE Y
ALMACENAMIENTO

► COMPLETE STOCKING LINES / ENGINEERING

*Lignes complètes de
stockage / Engineering*

Komplette Lagerstrassen /
Engineering

*Líneas completas de
almacenamiento /
Engineering*

**Bystronic glass
Cugher Glass
Lisec Group
Mistrello Officine**

► COMPLETE HANDLING AND MOVEMENT LINES

*Lignes complètes de
mouvement et manipulation
Komplette Transport- und
Handierungsanlagen
Líneas completas de
movimiento y manipulación*

**Bando Kiko
B.H.T.
Bystronic glass
Cugher Glass
CMS Brembana
Lisec Group
Mistrello Officine**

► MACHINES FOR HANDLING GLASS SHEETS

*Machines pour la translation
de feuilles
Maschinen zur
Scheibenbewegung
Máquinas para el movimiento
de las hojas*

**Bando Kiko
B.H.T.
Bystronic glass
CMS Brembana
For.El.**

**Lisec Group
Mistrello Officine**

► HANDLING ROBOTS

*Robot de mouvement
Handling-Roboter
Robot de movimiento*

**CMS Brembana
Lisec Group**

► HANDLING EQUIPMENT FOR FLOAT GLASS

*Équipements de manipulation
pour verre mobile
Vorschub-Anlage für
Flachglas
Equipos de transporte de
cristales móviles*

**Bystronic glass
Lisec Group**

► TROLLEYS AND CLASSIFIERS

*Chariots de transport et
classeurs
Rollkarren und Sortierer
Carros y clasificadores*

**CMS Brembana
For.El.
Lisec Group**

► TRANSPORTATION SYSTEMS / TRUCKS

*Systèmes de transport/
cammionage
Transportwesen/
Lastkraftwagen
Sistemas para el transporte/
camiónes*

Lisec Group

► **VACUUM LIFTING EQUIPMENT**

Ventouses pour ponts roulants pour grandes feuilles
Brückenkräne mit Vakuumsauger für große Scheiben

Puente grúa a ventosas para hojas grandes

Bystronic glass
C.M.B. - Besana
CMS Brembana
For.El.
Lisec Group

► **CRANE SUCTION CUPS FOR LARGE SHEETS**

Ventouses de soulèvement pour grandes plaques
Laufkran-Saugköpfe für grosse Platten

Ventosas en puente-grúa para grandes hojas de vidrio

Bystronic glass
C.M.B. - Besana
Lisec Group

► **TRANSPORTATION TONGS**

Griffes pour transport
Transportzangen
Pinzas para el transporte

C.M.B. - Besana

► **SUCTION CUPS**

Ventouses
Vakuumsauger
Ventosas

Bystronic glass
C.M.B. - Besana
CMS Brembana

► **CONVEYOR BELTS**

Ceintures de convoyeur
Beförderer.Bänder
Cinturones de transportador

Bystronic glass
Cugher Glass

► **ACCESSORIES**

Accessoires divers
Sonstiges Zubehör
Accesorios varios

CMS Brembana

Helios Italquartz
Mole Moreschi

STRAIGHT-EDGE AND SHAPE CUTTING

DÉCOUPE RECTILIGNE ET EN FORME

GERADLINIGES UND FASSONSCHEIDENCORTE RECTILÍNEO Y PERFILADO

► **COMPLETE STRAIGHT-EDGE LINES**

Lignes complètes rectiligne
Geradeanlagen
Líneas completas corte rectilíneo

Bando Kiko
Bystronic glass
CMS Brembana
Fushan
Lisec Group

► **COMPLETE SHAPE CUTTING LINES**

Lignes complètes de découpe en forme
Formschneideanlagen
Líneas completas para corte perfilado

Bando Kiko
Bystronic glass
CMS Brembana
Fushan
Lisec Group
Mingte Glass Tech.

► **AUTOMATIC CUTTING MACHINES FOR AUTOMOTIVE GLASS**

Machines automatiques de découpe pour verres automobiles

Automatische Autoglas-Schneidemaschinen
Máquinas automáticas de corte para vidrios de automóvil

Bando Kiko
B.H.T.
Bystronic glass
CMS Brembana
Lisec Group

► **LOADING AND TILTING MACHINES**

Chargeuses et basculeuses
Beschickungs- und Kippmaschinen
Cargadoras y volcadoras

Bando Kiko
B.H.T.
Bystronic glass
C.M.B. - Besana
CMS Brembana
For.El.

Fushan
Intermac
Lisec Group
Mingte Glass Tech.

► **CUTTING TABLES**

Tables de découpe
Schneidetische
Mesas de corte

Bando Kiko
Bystronic glass
CMS Brembana
For.El.
Fushan
Lisec Group
Mingte Glass Tech.

► **CUTTING OPTIMIZERS**

Optimisation de découpe
Schnittoptimalisierung
Optimizadores de corte

Bando Kiko
Bystronic glass
CMS Brembana
For.El.
Lisec Group
Mingte Glass Tech.
Optima

► **CUTTING PATH OPTIMIZERS**

Optimisation de la découpe
Schnittoptimalisierung
Sistemas de optimización del corte

Bando Kiko
Bystronic glass
CMS Brembana
Lisec Group
Optima

► **CAD SYSTEMS**

CAD systems
CAD Systemen
CAD sistemas

CMS Brembana
Lisec Group

► **ARMOURED AND LAMINATED GLASS CUTTING MACHINES**

Machines pour découpe de verres blindés et feuilletés
Schneidemaschinen für Panzer- und Verbundglas
Máquinas de corte para vidrio blindado y estratificado

Bando Kiko
Bystronic glass
C.M.B. - Besana
CMS Brembana
Lisec Group

► **ROUND OR SHAPE CUTTING MACHINES**

Machines pour découpe ronde et façonnage
Rund- und Formschneidemaschinen
Máquinas para corte redondo y perfilado

Bando Kiko
Bystronic glass
CMS Brembana
Lisec Group
Mingte Glass Tech.

► **CUTTING ACCESSORIES**

Accessoires pour découpe
Schneidezubehör
Accesorios para el corte

Bando Kiko

► **AUTOMATIC SAWS FOR CUTTING LAMINATED AND BULLET-PROOF GLASS**

Machine automatique à scies verticales pour la coupe du verre stratifié et anti-effractions

Automatische Senkrechtsägemaschinen zum Schneiden von Verbund- und kugelsicherem Glas
Maquinas automaticas de sierras verticales para el corte de vidrios estratificados y a prueba de balas

CMS Brembana

Suppliers Guide

Yellow pages

www.glassonline.com

80

► BREAKING SYSTEMS

*Systèmes de brisure
Bruch-Systeme
Sistemas de troncado*

Bando Kiko
Bystronic glass
Fushan
Lisec Group
Mingte Glass Tech.
CMS Brembana

► CUTTING MACHINES WITH BREAKING AND EDGE DELETING DEVICES

*Machines de découpage
du verre avec système
de polissage des bords*
Glas-Schneidemaschinen
mit Kantenabschleifungs-
Vorrichtung
*Máquinas para corte
y desbarbado*

Bando Kiko
Bystronic glass
CMS Brembana
Lisec Group

EDGING AND BEVELLING

FAÇONNAGE DES BORDS
ET BISEAUTAGE

KANTENBEARBEITUNG
UND FACETTIERUNG
CANTEADORAS Y
BISELADORAS

► COMPLETE EDGING LINES

*Installations complètes pour
le façonnage des bords*
Komplette
Kantenbearbeitungsanlagen
Línea canteadora completa

Bando Kiko
C.M.B. - Besana
CMS Brembana
For.El.
Fushan
SKG - Skill Glass

► COMPLETE BEVELLING LINES

*Installations complètes
pour le biseautage*
Komplette Facettieranlagen

Línea completa para biselado

Bando Kiko
C.M.B. - Besana
CMS Brembana
Fushan
Zafferani Glas

► COMPLETE AUTOMOTIVE GLASS EDGING AND BEVELLING LINES

*Lignes complètes pour
le biseautage et le meulage
de verre pour l'industrie
automobile*

Komplette Strassen zum
Abfasen und Schleifen von
Glas für die Automobilindustrie

*Líneas completas para
achaflanar y biselar
el vidrio para la industria
automovilística*

Bando Kiko
B.H.T.
Bystronic glass
Intermac
SKG - Skill Glass

► DOUBLE EDGE GRINDING MACHINES

Rectilignes bilaterales
Doppelseitige geradlinige
Kanten-schleifmaschinen
Rectilíneas bilaterales

Bando Kiko
C.M.B. - Besana
CMS Brembana
Fushan
Intermac

► VERTICAL EDGE GRINDING MACHINES

Rectilignes verticales
Vertikale
Kantenschleifmaschinen
Rectilíneas verticales

Bando Kiko
Bystronic glass
C.M.B. - Besana
For.El.
Fushan
SKG - Skill Glass
Zafferani Glas

► BEVELLING MACHINES FOR ROUND AND SHAPED GLASS

*Biseauteuses pour ronds
et formes diverses*
Facettiermaschinen für
Rund- und Formschliffe

*Biseladoras para vidrios
redondeados y perfilados*

Bando Kiko
CMS Brembana
Fushan
Intermac

► STRAIGHT-EDGE BEVELLING MACHINES

Biseauteuses rectilignes
Geradlinige
Facettenschleifmaschinen
Biseladoras rectilíneas

Bando Kiko
CMS Brembana
Fushan
Zafferani Glas

► BEVEL POLISHING MACHINES

Polisseuses pour biseaux
Facettenpoliermaschinen
Lustradoras para corte a bisel

Bando Kiko
CMS Brembana
Intermac
Zafferani Glas

► STRAIGHT-EDGE ENGRAVING MACHINES

*Machines pour gravures
rectilignes*
Geradlinige Gravurmaschinen
*Máquinas para incisiones
rectilíneas*

CMS Brembana
Intermac
SKG - Skill Glass

► SHAPED GLASS ENGRAVING MACHINES

*Machines à découper
pour des plaques de verre
découpées selon gabarit*
Gravurmaschinen für
Formgeschnittene Glasplatten
*Máquinas cortadoras para
hojas de vidrio cortado
según plantilla*

CMS Brembana
Intermac

► CORNER GRINDING MACHINES

*Machines pour le rodage
des angles*

Winkelschleifmaschinen
*Máquinas para el pulido
de ángulos*

CMS Brembana
Fushan
Intermac
SKG - Skill Glass

► SHAPED GLASS GRINDING MACHINES

*Machines pour le rodage
de verres en forme*
Formschleifmaschinen
*Máquinas para el pulido
de vidrios en forma*

Bando Kiko
CMS Brembana
For.El.
Fushan
Intermac

► BELT GRINDING MACHINES

Machines a bande
Bandmaschinen
Máquinas a cinta

C.M.B. - Besana
Fushan

► LATHES - VERTICAL AND HORIZONTAL

Tours horizontaux et verticaux
Horizontale und vertikale
Schleifböcke
*Tornos horizontales y
verticales*

C.M.B. - Besana
CMS Brembana

► EMBOSsing MACHINES

Machines pour échancrures
Hohlschliffmaschinen
Máquinas para muescas

C.M.B. - Besana
CMS Brembana

► PORTABLE MACHINES

Machines portatives
Tragbare Maschinen
Máquinas portátiles

Helios Italquartz

► DIAMOND TOOLS

Outils diamantés

Diamantwerkzeuge
Utiles de diamante

Bando Kiko
Mole Moreschi

► **POLISHING WHEELS**

Meules de polissage
Polierscheiben
Muelas de brillo

Bando Kiko
Mole Moreschi

► **ACCESSORIES**

Accessoires divers
Sonstiges Zubehör
Accesorios varios

CMS Brembana
Helios Italquartz
Mole Moreschi

WASHING

MACHINES À LAVER
WASCHMASCHINEN
MÁQUINA
LAVADORAS

► **HORIZONTAL WASHING MACHINES**

Machines à laver horizontales
Waagerechte Waschmaschinen
Lavadoras horizontales

Bando Kiko
B.H.T.
Bystronic glass
For.El.
Fushan
Lisec Group
Mingte Glass Tech.

► **VERTICAL WASHING MACHINES**

Machines à laver verticales
Senkrechte Waschmaschinen
Lavadoras verticales

Bystronic glass
For.El.
Lisec Group
Mingte Glass Tech.
Zafferani Glas

► **WASHING MACHINES FOR AUTOMOTIVE GLASS**

Machines à laver pour verres automobiles
Waschmaschinen für Automobilgläser
Lavadoras para vidrios de automóvil

Bando Kiko
B.H.T.
Bystronic glass
Mingte Glass Tech.

► **WASHING PURIFICATION SYSTEMS**

Systèmes de purification pour les machines à laver
Reinigungssystem für Waschmaschinen
Sistemas de purificación del agua

Bystronic glass
For.El.
Mingte Glass Tech.

► **ACCESSORIES**

Accessoires
Sonstiges Zubehör
Accesorios varios

Helios Italquartz

MIRROR PRODUCTION

INSTALLATIONS POUR MIROIRS
SPIEGELBELEGANLAGEN
INSTALACIONES PARA ESPEJOS

► **COMPLETE PLANTS & CONVEYORS FOR MIRROR PRODUCTION**

Installations complètes & convoyeurs pour la production de miroirs
Komplette Fertigungslinien & Förderanlagen zur Spiegelfertigung
Líneas completas & trenes para la producción de espejos

Fushan
Mingte Glass Tech.

► **PAINTING EQUIPMENT**

Installations pour vernir
Lackieranlagen
Instalaciones para pintura

Mingte Glass Tech.

► **DRYING OVENS**

Fours de séchage
Trockenöfen
Hornos desecadores

Mingte Glass Tech.

► **AUTOMOTIVE MIRROR BENDING FURNACES**

Fours de bombage pour miroirs et rétroviseurs pour véhicules automobiles
Biegeöfen für KFZ-Rückspiegel
Hornos de curvado para retrovisores de automoviles

B.H.T.

► **ACCESSORIES**

Accessoires
Zubehör
Accesorios

Helios Italquartz

INSULATING GLASS

MACHINES ET INSTALLATIONS POUR VERRES ISOLANTS
ISOLIERGLASMASCHINEN UND ANLAGEN
MÁQUINAS E INSTALACIONES PARA VIDRIO - CÁMARA

► **COMPLETE INSULATING GLASS LINES**

Installations complètes pour verres isolants
Komplette Fertigungslinien für Isolierglas
Líneas completas para vidrio cámara

Bystronic glass
For.El.
Lisec Group
Zafferani Glas

► **AUTOMATIC SEALING LINES**

Installations automatiques pour le scellage
Automatische Versiegelungsanlagen
Líneas automáticas para sellado

Bystronic glass
For.El.
Lisec Group

► **AUTOMATIC SPACER BENDING MACHINES**

Plieuses automatiques pour entretoises
Automatische Faltmaschine für Abstandhalter
Plegadoras automáticas para separadores

Bystronic glass
For.El.
Lisec Group

► **DESICCANT SALT FILLING MACHINES**

Remplisseuses pour sels déshydratants
Trockensalzeinfüller
Embudos para llenado con deshidratantes

Bystronic glass
For.El.
Lisec Group

► **SPACER CUTTING SAWS**

Scies pour la coupe d'entretoises
Speziälsägen für Abstandhalter
Sierras para el corte de los separadores

For.El.
Lisec Group

► **BUTYL EXTRUDERS**

Extrudeuse de Butyl
Butilextruder
Extrusores de butilo

Bystronic glass
For.El.
Lisec Group



GLASSTECH ASIA 2011

9th International Glass Products, Glass Manufacturing, Processing & Materials Exhibition

Concurrent Events:



On November 23 to 25 2011, this glass industry giant will set foot in Jakarta, Indonesia for its ninth presentation. Across the three-day exhibition, Glasstech Asia will present the widest range of cutting-edge equipment, products, technologies and unveil a variety of innovations related to this thriving industry. Its seminars will present the latest in trends and technologies, presented by the captains of the industry.

Venue: Jakarta-International Expo, Indonesia
Date: 23 - 25 November
Website: www.glasstechasia.com.sg

Glasstech Asia 2011, the premier, one-stop learning and networking hub will host top industry professionals and who's-who of the glass industry!

Why Glasstech Asia 2011 is a **must-not-miss**

- Dynamic showcase of the latest technologies, trends, and developments of the glass industry
- Ideal platform for industry players to expand their network and discover new business opportunities
- Exclusive seminars, business match-making, networking reception and awards presentation
- Proven success in generating positive business returns in the industry through its targeted business match-making programmes
- Increasing number of exhibitors and visitors every year
- Golden opportunities for industry players to tap on abundant networking opportunities, exchange of ideas, emerging trends and the latest technologies and developments in the industry
- Strongly supported by worldwide industry associations

For Sales enquiries, please contact:
Conference & Exhibition Management Services Pte Ltd
Email: steven@cems.com.sg / aubrey@cems.com.sg
Tel: +65 6278 8666 / Fax: +65 6278 4077

Organisers:



Host:



Official Publication:



Supporting Media Partners:

Artenergy Publishing
eTradeAsia.com
Glass Bulletin

Glass Global
Wenbi International

Online Media Partner:
China Glass Network

► **HOT-MELT EXTRUDERS**

*Extrudeuse de Hot-Melt
Hot-Melt-Extruder
Extrusores de fusión en caliente*

For.El.
Lisec Group

► **POLYURETHANE EXTRUDERS**

*Extrudeuse de polyurethanes
Polyurethanextruder
Extrusor de poliuretano*

Bystronic glass
For.El.
Lisec Group

► **POLYURETHANE ENCAPSULATION**

*Capsulage de polyurethanes
Polyurethaneinkapselung
Encapsulado de poliuretano*

Bystronic glass
Lisec Group

► **SILICONE EXTRUDERS**

*Extrudeuse de silicone
Silikonextruder
Extrusores de siliconas*

Bystronic glass
For.El.
Lisec Group

► **POLYSULPHIDE SEALANT EXTRUDERS**

*Extrudeuse de scellants polysulfuriques
Extruder für Schwefelsäurehaltige Klebmittel
Extrusores de polisulfuros*

Bystronic glass
For.El.
Lisec Group

► **GAS FILLING EQUIPMENT**

*Appareils pour remplissage de gaz
Gasfüllgeräte
Equipos para relleno con gas*

Bystronic glass
For.El.
Lisec Group

► **SPACERS/PROFILES**

*Entretoises
Abstandhalter
Separadores*

Edgetech Europe

► **PANTOGRAPHS**

*Pantographes
Pantographen
Pantógrafos*

Fratelli Pezza

► **ACCESSORIES**

*Accessoires
Zubehör
Accesorios*

For.El.
Helios Italquartz

TEMPERING

**TREMPE
TEMPERTECHNIK
TEMPLADO**

► **TEMPERING FURNACES (ARCHITECTURAL GLASS)**

*Fours de trempage pour le verre destiné à la construction
Härtungsöfen für das Glas, das für Bauwesen bestimmt ist
Hornos para templar el vidrio para la construcción*

B.H.T.
Fushan
Landglass Technology
Lisec Group
Mingte Glass Tech.
Pujol Hornos Industriales

► **TEMPERING FURNACES (AUTOMOTIVE GLASS)**

*Fours de trempage pour le verre destiné à l'industrie automobile
Härtungsöfen für das Glas, das für die Automobilindustrie bestimmt ist
Hornos para templar el vidrio para la industria automovilística*

B.H.T.

Landglass Technology
Mingte Glass Tech.

► **ACCESSORIES**

*Accessoires
Zubehör
Accesorios*

Helios Italquartz
Landglass Technology
Mingte Glass Tech.

BENDING

**BOMBAGE
BIEGEN
CURVADO**

► **BENDING FURNACES (ARCHITECTURAL GLASS)**

*Fours de courbure pour le verre destiné à la construction
Biegeöfen für das Glas, das für Bauwesen bestimmt ist
Hornos para curvar el vidrio para la construcción*

B.H.T.
Fushan
Mingte Glass Tech.

► **BENDING FURNACES (AUTOMOTIVE GLASS)**

*Fours de courbure pour le verre destiné à l'industrie automobile
Biegeöfen für das Glas, das für die Automobilindustrie bestimmt ist
Hornos para curvar el vidrio para la industria automovilística*

B.H.T.
Mingte Glass Tech.



► **ACCESSORIES**

*Accessoires
Zubehör
Accesorios*

Mingte Glass Tech.

LAMINATED GLASS PRODUCTION

**INSTALLATIONS POUR
VERRES FEUILLETÉS
VERBUNDGLASANLAGEN
INSTALACIONES PARA
VIDRIO ESTRATIFICADO**

► **COMPLETE PLANTS**

*Installations complètes
Komplette Fertigungslinien
Instalaciones completas*

B.H.T.
Bystronic glass
For.El.
Fushan
Mingte Glass Tech.
Pujol Hornos Industriales

► **LAMINATED WINDSCREEN BENDING FURNACES**

*Four de bombage pour pare-brise feuilletés
Ofen zur Biegung von Sicherheitswindschutzscheiben
Horno de curvado para parabrisas de vidrio estratificado*

B.H.T.
Mingte Glass Tech.

► **AUTOCLAVES**

*Autoclaves
Autoklaven
Autoclaves*

Bystronic glass

► **CLIMATIC CABINS**

*Cabines climatiques
Klimazellen
Cabinas climática*

Bystronic glass
For.El.
Mingte Glass Tech.

Suppliers Guide

Yellow pages

www.glassonline.com

84

► INFRARED OVENS

Four à radiations infrarouges
Infrarotöfen
Hornos a rayos infrarrojos

B.H.T.

Bystronic glass

For.El.

Mingte Glass Tech.

► MANGLES

Calandres (presses)
Kalander (Pressen)
Presnas

For.El.

► PVB - SHAPING AND CUTTING EQUIPMENT

Machines pour la découpe selon gabarit du PVB
Maschinen für die Formung und den Schnitt von PVB
Máquinas para perfilar y cortar el PVB

Bystronic glass

For.El.

► ACCESSORIES

Accessoires
Zubehör
Accessorios

Helios Italuartz

DRILLING

PERÇAGES
BOHRTECHNIK
TALADROS

► AUTOMATIC DRILLING LINES

Installations automatiques de perçage
Automatische Bohranlagen
Líneas automáticas de taladro

Bando Kiko

Bystronic glass

C.M.B. - Besana

Intermac

SKG - Skill Glass

► MULTI-SPINDLE DRILLING MACHINES

Perceuses multiples
Reihenbohrmaschinen

Taladradores múltiples

Bando Kiko

Bystronic glass

C.M.B. - Besana

CMS Brembana

Intermac

SKG - Skill Glass

► DRILLING MACHINES WITH OPPOSITE DRILLING HEADS

Perceuses à pointes opposées
Bohrmaschinen mit entgegengesetzten Bohrern
Taladradores a puntas contrapuestas

Bando Kiko

Bystronic glass

C.M.B. - Besana

CMS Brembana

Fushan

Intermac

SKG - Skill Glass

Zafferani Glas

► PORTABLE DRILLING MACHINES

Perceuses portatives
Tragbare Bohrmaschinen
Taladradores portátiles

CMS Brembana

► DRILLING AND MILLING MACHINES

Maquines pour percer et fraiser les plaques de verre
Bohr- und Fräsmaschinen für Glasplatten
Máquinas para agujerear y fresar hojas de vidrio

C.M.B. - Besana

CMS Brembana

SKG - Skill Glass

► DIAMOND DRILLS

Forets diamantes
Diamantbohrer
Pequeños agujeros diamantados

Mole Moreschi

► ACCESSORIES

Accessoires divers
Sonstiges Zubehör
Accessorios varios

CMS Brembana

OTHER EQUIPMENT AND PLANTS

INSTALLATIONS DIVERSES

SONTIGE ANLAGEN

INSTALACIONES VARIAS

► TURNKEY PLANTS / ENGINEERING - FOR BUILDING GLASS

Installations clefs à la main - Engineering - verre plat pour constructions
Schlüssselfertige Anlagen - Engineering - für Baufachglas
Instalaciones llave en mano - Engineering - para vidrio plano para la construcción

Bando Kiko

B.H.T.

Bystronic glass

Cugher Glass

Intermac

Lisec Group

► TURNKEY PLANTS / ENGINEERING - FOR AUTOMOTIVE GLASS

Installations clefs à la main - Engineering - verre automobile
Schlüssselfertige Anlagen - Engineering - für Automobilglas
Instalaciones llave en mano - Engineering - para vidrio para de automóviles

Bando Kiko

B.H.T.

Bystronic glass

Cugher Glass

Intermac

► TURNKEY PLANTS / ENGINEERING - FOR DISPLAY GLASS

Installations clefs à la main - Engineering - display de verre
Schlüssselfertige Anlagen - Engineering - Glasdisplay
Instalaciones llave en mano - Engineering - Display para vidrio

Bando Kiko

Cugher Glass

► WORKING CENTRES - CNC CONTROLLED

Centre de travail à control numérique
Arbeitszentrum mit Zahlenkontrolle
Centro de trabajo de control numérico

Bando Kiko

Bystronic glass

C.M.B. - Besana

Fushan

Intermac

Mingte Glass Tech.

SKG - Skill Glass

► SANDBLASTING SYSTEMS, EQUIPMENT AND PLANTS - OPTIMIZERS

Machines et installations pour le sablage - Optimisation
Sandstrahlmaschinen und -anlagen - Optimierung
Maquinas e instalaciones para pulido con arena - Optimizadores

Fratelli Pezza

Fushan

SKG - Skill Glass

► SCREEN PRINTING EQUIPMENT AND PLANTS

Machines et installations de sérigraphie - verre pour le bâtiment/l'automobile
Siebdruckmaschinen und -anlagen, Glas für Bauwesen/Kraftfahrzeuge

Put your company
on the web!

Ask for the
glassOnline
Internet services

Contact us at:

E-mail:
publications@glassonline.com

www.glassonline.com

Máquinas y equipos para serigrafía - vidrio para la construcción/vehículos

Cugher Glass

► **SCREEN PRINTING DRYING SYSTEMS**

Systèmes de séchage pour la sérigraphie
Siebdruck-Trockensysteme
Sistemas de secado para la serigrafía

Cugher Glass

ARTISTIC GLASS PRODUCTION

FABRICATION DE VERRE
ARTISTIQUE PRODUCTION
VON KÜNSTLERISCH
GESTALTETEM GLAS
PRODUCCIÓN VÍDRIO
ARTÍSTICO

► **CHAMBER ELECTRIC KILNS**

Fours électriques à chambre
Elektrische Kammeröfen
Hornos eléctricos de cámara

Pujol Hornos Industriales

► **ACCESSORIES**

Accessoires divers
Sonstiges Zubehör
Accesorios varios

Helios Italtartz

MISCELLANEOUS

MELANGE
SONSTIGES
VARIOS

► **AUTOMOTIVE GLASS QUALITY CONTROL**

Controlé qualite du verre pour vehicules
Kontrolle der Glasqualität für Kfz-verwendungen
Control de calidad del cristal para auto

**Bando Kiko
Bystronic glass
Cugher Glass**

► **DEIONIZING AND WATER SOFTENING EQUIPMENT**

Deionisateurs et adoucisseurs d'eau
Entionisierungs-Anlagen und Wasserenthärter
Instalaciones deionizadoras y ablandadores del agua

**For.El.
Lisec Group**

► **FLAT GLASS QUALITY CONTROL DEVICES**

Systèmes de contrôle de qualité pour plaques de verre
Qualitätskontroll- Systeme für Glasplatten
Sistemas de control de calidad para hojas de vidrio

For.El.

► **INFRARED TUBES**

Tubes à infrarouge
Infrarot Rohren
Tubos infrarrojos

Helios Italtartz

► **KILNS**

Fours
Kammeröfen
Hornos

Pujol Hornos Industriales

► **POWDER OR LIQUID APPLICATION SYSTEMS FOR PROTECTING FLOAT GLASS**

Systèmes d'application en poudre ou liquide pour la protection du verre
Puder-Flußigkeitauftragsgeräte zum Schutz von Flachglas
Sistema de protección del vidrio "float" mediante polvos o líquidos

Cugher Glass

► **QUARTZ EQUIPMENT**

Quartz machines
Quartz Maschinen
Equipos de cuarzo

Helios Italtartz

► **SIC HEATERS**

SIC appareils de chauffage
SIC Heizgeräte
SIC Calentadores

Helios Italtartz

► **SOFTWARE SYSTEMS FOR PRODUCTION CONTROL**

Systèmes de logiciels pour le contrôle de la production
Software-Systeme für die Kontrolle der Produktion
Sistemas de software para el control de la producción

**Cugher Glass
Edgetech Europe
For.El.
Lisec Group
Optima**

► **SORTING SYSTEMS**

Systèmes de classification
Klassifizierung (für Glasplatten)
Clasificadores

Lisec Group

► **UV LAMPS**

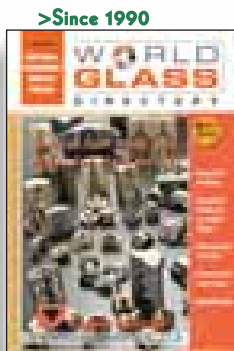
UV lampes
UV Lampen
Bombillas U.V.

Helios Italtartz

► **UV PORTABLE MACHINES**

Machines portables aux rayons U.V.
Tragbare U.V. - Strahlen Maschinen
Máquinas portátiles U.V.

Helios Italtartz



The world's leading glass publications!

NEW WEB SERVICE:
download the magazines
free-of-charge

ARTENERGY PUBLISHING

Via Antonio Gramsci, 57 - 20032 Corzano (Milano) - Italy • Tel. +39 - 02 - 66306866 - Fax +39 - 02 - 66305510
E-mail: publications@glassonline.com Website: www.glassonline.com

www.glassonline.com

SUBSCRIBE NOW TO THE WORLD'S

GLASS MAGAZINES



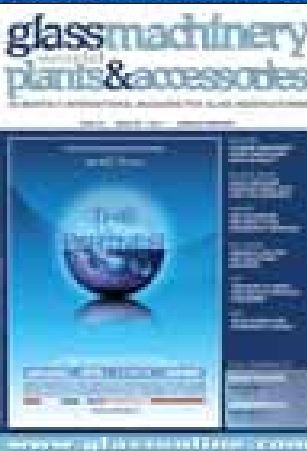
Glass-Technology International

since 1989

GLASS-TECHNOLOGY INTERNATIONAL is the leading international magazine for professionals involved in the flat and bent glass industry, from building to automotive, and from furniture to household appliances. **G-TI** is useful for those working in float glass plants as well as glass processors/fabricators, glazing contractors, automotive glass installers, window and door manufacturers, glass merchants, wholesalers, etc. With about 100 pages per issue, it is the bi-monthly tool for keeping abreast of new technology, new products, company life and all innovations in the world of flat and bent glass. A Suppliers Guide/Yellow Pages survey in four languages - English, French, German and Spanish - is published in every issue.

The magazine also includes the **GLASS INDUSTRY AGENTS GUIDE**.

GLASS-TECHNOLOGY INTERNATIONAL promotes the **SOLAR GLASS Conference** - The Italian Conference on the use of glass in the solar industry and for energy saving (www.glassonline.com).



glass machinery plants & accessories

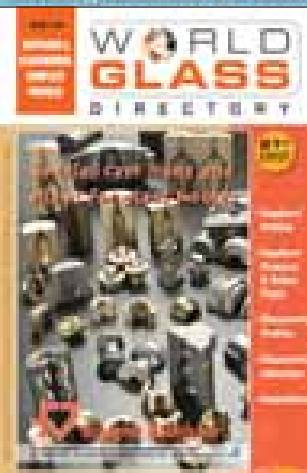
since 1988

GLASS MACHINERY PLANTS & ACCESSORIES is the leading international magazine for glass manufacturing, and is targeted at glassworks involved in the production and processing of hollowware and special glass (bottles, containers, household, lighting, technical, scientific, industrial and medical glassware) and fiberglass.

GLASS MACHINERY PLANTS & ACCESSORIES is a bi-monthly periodical with about 100 pages of product news, current world news, focus on..., country dossiers, technical articles and dossiers, worldwide exhibitions, glassworks in the world, Yellow Pages, etc.. In the last issue of each year, the magazine includes the **GLASS INDUSTRY AGENTS GUIDE**.

GLASS MACHINERY PLANTS & ACCESSORIES promotes **VHG - Vitrum Hollow Glass** - the International Exhibition for Hollow Glass Manufacturing (www.glassonline.com).

ANNUAL GUIDE



WORLD GLASS DIRECTORY

since 1990

In its 21st edition, the **WORLD GLASS DIRECTORY** is a unique international annual guide which gives a complete overview of international glassworks and suppliers involved in hollowware and special glass manufacturing. About 200 pages of complete company profiles: addresses, management, sister companies, plants, number of employees, turnover, banks, year of company foundation, capital, trademarks, areas of activity, innovations, product-by-product and country-by-country breakdowns. It has summaries in five languages (English, French, German, Spanish and Italian).

The **WORLD GLASS DIRECTORY** is the annual reference point for the international glass manufacturing industry comprising bottles and containers, domestic glassware, tubing, vials and ampoules, lighting glassware, technical and industrial glassware, scientific, laboratory and medical glassware and automotive glassware.

For multiple subscriptions: **10% DISCOUNT**

INTERNET



www.glassOnline.com

since 1996

GLASSONLINE.COM is the leading web service dedicated to the world of glass.

The service includes an international glass data bank **World Yellow Pages** and the **GLASSONLINE CLUB**, reserved for subscribers, offers: a **Daily World News** bulletin (more than 18,000 news items stored since 1996), **News Items**, and the

online issues of our magazines in Pdf format. Furthermore,

GLASSONLINE.COM also has: an illustrated glass dictionary, second-hand equipment, trade opportunities, employment opportunities, exhibitions and meetings, forum, "how to say glass", agents guide, glass antiques and more.

NEW WEB SERVICE:
download
the magazines
free-of-charge

LEADING SECTOR PUBLICATIONS

Subscription order form

- I wish to subscribe for **one year** (6 issues) at € **130,00**, air mail included
- I wish to subscribe for **two years** (12 issues) at € **220,00**, air mail included
- Please **send me** no. back copy/ies of issue no. year (single copy € 29,00 post free)

**Glass-Technology
International**

Tot. €:

- I wish to subscribe for **one year** (6 issues) at € **130,00**, air mail included
- I wish to subscribe for **two years** (12 issues) at € **220,00**, air mail included
- Please **send me** no. back copy/ies of issue no. year (single copy € 29,00 post free)

**glassmachinery
world
plants&accessories**

Tot. €:

N.B. Subscribers to the magazine will receive a free copy of the WORLD GLASS DIRECTORY

- Please **supply me** with no. copy/ies of this year's edition at the price of € **45,00** each, air mail included

**WORLD
GLASS
D I R E C T O R Y**

Tot. €:

N.B. Free-of-charge for subscribers to the magazine GLASS MACHINERY PLANTS & ACCESSORIES

**TOTAL PRINTED GLASS PUBLICATIONS
TOTAL, LESS 10% DISCOUNT (FOR MULTIPLE SUBSCRIPTIONS)**

€:
€:

+ GlassOnline Club **SPECIAL OFFER FOR PRINTED PUBLICATION SUBSCRIBERS**

Subscription to the **GlassOnline Club**, comprehensive of the following services: **Daily World News** (more than 21,000 news items stored since 1996), **Financial Reports** and **Magazine Articles** (more than 1,000 articles from previous years' magazines).

- Annual subscription**, at the cost of € **150,00** ➔ **Annual: € 97,00**
- Two-year subscription**, at the cost of € **250,00** ➔ **Two-year: € 156,00**
(I look forward to receiving my Password)

**glassOnline
CLUB**

TOTAL PRINTED GLASS PUBLICATIONS + GLASSONLINE CLUB

€:

I herewith confirm the purchasing order for the publications/services ticked () on the left:

EU COMPANIES: MUST ENTER VAT/TVA

NUMBER:

Name.....

Job Title

Company

Street

Post Code City

Country.....

Tel. (int. +/.....)

Fax

E-mail

www.

PLEASE TYPE OR PRINT IN CAPITAL LETTERS

PAYMENT

Please charge my credit card:

- Visa Mastercard/Eurocard
- Diners Club American Express

Card no.: | | | | | | | | | | | | | | | | | | | | | |

Expiry date: | | | | | | | | Corporate card
D D M M Y Y Personal card

Company name on card:

Card holder's name:
(only for Corporate cards)

Card holder's date of birth:/...../.....
DD MM YY

Signature:

Cheque has been sent to Arternergy Publishing Srl

Bank credit transfer payable to
ARTENERGY PUBLISHING srl has been sent to
A/c No. 000000001915 Banca Popolare di Milano,
Branch no. 93, Cormano (MI), Italy
Bank coordinates: ABI 05584 - CAB 33001
Swift code: BPMIITM1093
IBAN code: IT36 0 05584 33001 000000001915

N.B. AFTER RECEIPT OF PAYMENT WE WILL SEND YOU AN INVOICE. ALL BANK TRANSFERS MUST INCLUDE YOUR COMPLETE COMPANY ADDRESS AND THE MAGAZINE TITLES OR THE SERVICES REQUESTED. PLEASE ALSO NOTE THAT ARTENERGY PUBLISHING IS NOT RESPONSIBLE FOR ANY BANK EXPENSES, COMMISSION OR OTHER COSTS.

Date: Signature:

FAX THIS PAGE TO: +39 - 02 - 66305510

Arternergy Publishing S.r.l.

Via Antonio Gramsci, 57 - 20032 CORMANO (Milano) - Italy
Tel. +39-02-66306866, Fax +39-02-66305510

E-mail: publications@glassonline.com
www.glassonline.com



Photo by Stefano Cattelan

NEW AIR CONVECTION SYSTEMS FOR LOW-E GLASSES

BHT presents its last generation of flat tempering furnaces for low-e glasses:

- > excellent results on low-e glasses with emissivity up to 0,02
- > process validation by the worldwide mayor glass producer companies
- > products certification by the worldwide mayor glass producer companies
- > maximum glass quality, energy saving and production control

S.S.Adriatica Nord-Km.509 - 66054Vasto (CH) - Italy - Tel:+39 0873 311004 - Fax:+39 0873 311909 - bhtsl@tin.it - www.bht.it

