

ŞİŞECAM

growth, development,
innovation and sustainability



Producing specially designed glass packaging with a full range of volumes and colours for the food, beverages, pharmaceuticals, and cosmetics sectors, Şişecam Glass Packaging Group has a history that dates back to 1935, when the first plant was founded in Paşabahçe-Beykoz. Demand rapidly increased after that date, and production had to be transferred to the Topkapı Bottle Plant in 1969; in 1976, the company Anadolu Cam Sanayii A. company in Mersin was acquired. NNPB, which is an important milestone in glass packaging technology, was used for the first time at this plant in 1988. All companies and plants operating as part of the glass packaging group were incorporated under Anadolu Cam Sanayii A in 2000. The Group's domestic production plants further grew with the addition of Bursa Yenişehir and Eskişehir

With over 80 years of history, Şişecam Glass Packaging Group is continuing to develop, expand and innovate. This article takes a look at the company today, with its important ongoing investments and special projects, and sustainability and social responsibility in mind.

Company growth and development

COMPANY GROWTH AND DEVELOPMENT



plants in 2006 and 2013, respectively, cementing the leadership of the Group in the industry even more.

Şişecam Glass Packaging Group aims to become an international glass packaging supplier that is a regional leader thanks to investments and cooperation initiatives in surrounding countries, and dedicates half of its turnover to foreign operations. As such, its first investment outside Turkey was the acquisition of the Mina Plant in Georgia in 1997. This investment was followed by the establishment of Ruscam Glass Packaging company which was founded to follow the opportunities offered by the dynamic structure of the Russian market and to carry out the operations in Russia in 2002. Ruscam started to operate the Gorokhovets Plant as of 2002, the Pokrovsky Plant as of 2004, the Ufa Plant as of 2005, the Kirishi Plant as of 2008, and the Kuban Plant as of 2009. Şişecam Glass Packaging has most recently acquired an existing glass packaging plant in Meref, Ukraine in 2011, thus increasing its production capac-

ity abroad to 1.3 million tons.

The Şişecam Glass Packaging Group currently has a total production capacity of 2.3 million tons/year, which makes it the biggest glass packaging producer in Turkey, and the fifth biggest in Europe and the world. The business continues its production in a total of ten plants, three of which are in Turkey, five in Russia, one in Ukraine and one in Georgia.

INNOVATION

Şişecam and the Şişecam Glass Packaging Group are among the leaders of research and development in Turkey. They continuously invest significantly in technology and innovation in line with their aim of extending their high-quality product range, decreasing energy consumption, and increasing energy efficiency and the recycling of waste materials.

The Şişecam Glass Packaging Group focuses on making all of its processes and work applications such as forming, tempering, quality control, and packaging processes more efficient, high quality, and environment-

friendly; its aim is to continually develop and improve all its products, from newly designed products with new functions to standard products.

ONGOING PROJECTS

Lighter products

One of the focus points for the Şişecam Glass Packaging Group is to make glass packaging products lighter while increasing their strength, so that the inputs and emissions of the production process will decrease. One of the applications for making products lighter is the New Forming System (NFS) technology, which preserves durability while having a positive effect on production costs by saving on raw materials and energy. Thanks to technologies that make it possible to make glass packaging products 25 to 28 per cent lighter without diminishing their shock absorption values, it is now possible to have “ultralight” products.

Polymeric coating: new properties for glass packaging products

Supported by TÜB TAK, this project aims to create new glass





packaging products through the use of polymeric coating, and to increase durability and improve surface properties of products.

Antibacterial glass packaging products

Glass is by nature a material that does not interact with its contents and is impermeable with regards to oxygen. This prevents the decomposition of the contents inside the glass packaging and helps maintain its original freshness. One of the projects aimed at creating new and functional properties the of the Şişecam Glass Packaging Group is their antibacterial quality. This aims at extending the shelf life of products in glass packaging.

SPECIAL AND RARE COLOURS

Different rare colours are produced with the help of special colouring agents, usually applied to blue. The most common colours are cobalt blue, Maryland blue, turquoise light blue and sky blue. Dark or light alternatives are available.

On the other hand, different

green, grey, and brown colour tones can be produced by fore-hearth colouring. For example Georgia green is another common colour preferred by the market.

Decoration Painting Line

Bottles can be painted with different colours; organic paint spray system gives mat, satin, gloss surfaces.

Thermochromic paints are used to give different colours to the glass, depending on temperature. For example a bottle can be blue in the refrigerator at +4°C, but flint at room temperature at +20°C.

Phosphorus paints can be used to give effects in dark areas.

Three different colours can be worked, the main colours are flint, amber, emerald green and olive green. These colours can be worked at the different locations and necessary colour changes can be realized according to market demand.

3D bottle design and exclusive products

3D technology and 3D print-

ed samples are also available on request to decorate bottles. Non-round bottles and jars with corners, difficult shapes such rectangular can also be produced. Sharp shoulders can be designed according to customers' requests. Thick bottoms, different finishes and high push-up alternatives are available.

Logos can be positioned on the shoulder, the body or bottom. Embossing and engraving alternatives can be applied.

Basic bottles can be changed from blow blow to narrow neck press blow technology and this light-weighting is important for ecological footprint. Energy and transportation expenses can be reduced.

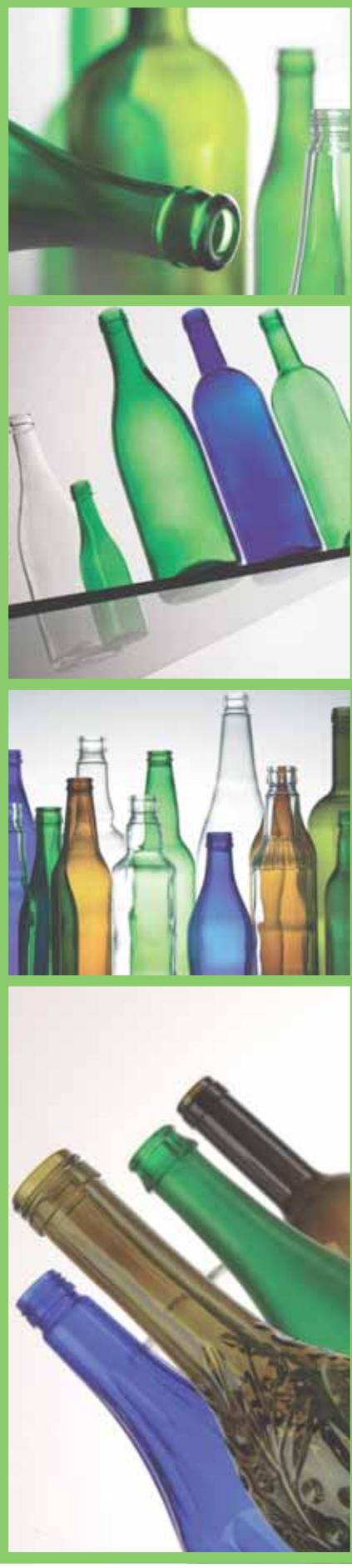
Flexible packaging, standard applications

Different alternatives can be applied as packaging standard according to customers' needs or requests:

- Standard Euro or USA pallet;
- Carton or plastic layer/tray;
- Horizontal or vertical strap;
- Different number of rows;
- Different polyethylene thick-



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ness according to distance or request.

Factory quality laboratories and chemical laboratories

Factory quality laboratories are equipped with high and latest technology to carry out all kinds of analyses. These laboratories use the fastest and most reliable methods, as well as special chemical agents to get the best results.

Latest technology for production and control machines

There are specific technologies which are developed by production and control machine manufactures. Ruscam observes and follows these improvements and obtains the necessary ones.

For example, high technology control cameras enables better quality control. The high speed, high resolution and high sensitivity properties of the cameras eliminate defects.

DESIGN CENTER

The Şişecam Glass Packaging Group holds an important place in glass packaging production both in Turkey and the world thanks to its innovative and creative approach. Since 2006 the Group has been responding to the demands of consumers and brands with unique glass packaging designs created by its Product Design Center.

The work by the Center targets the end user and involves industrial design, graphic design, and lid and cap technologies, making the Şişecam Glass Packaging Group an important solution partner at the design phase for customers seeking innovation. The innovative and creative glass packaging designs, which are the fruit of the work done jointly by a group of industrial designers, engineers, and technical experts as well as the extensive experience of the Group in this area, have won many awards at the

national and international level.

56 AWARDS IN TEN YEARS

One of the aims of the Product Design Center is to create high-quality designs for its customers that will receive awards at prestigious national and international competitions. Awards at international competitions such as Worldstar organized by WPO (World Packaging Organization) and AsiaStar by APF (Asian Packaging Federation) are the pride of the Şişecam Glass Packaging Group as the producer and designer as much as they are of the brands that own the products. The Product Design Center has a proven track record with 56 awards in ten years.

UNIVERSITY – INDUSTRY COLLABORATION PROJECTS

The first time Şişecam Glass Packaging collaborated with universities for glass packaging design dates back to 2004 when the Group worked with the Istanbul Technical Universities (ITU) Department of Industrial Product Design, which paved the way in later years to expanding such collaborations with the industrial design departments of other universities and turning this into a tradition.

The main aim of collaborating with universities is to introduce design students to the glittering world of glass packaging; to help them create new designs and form their design portfolio. During the project, students received information on all technical aspects and got the opportunity to personally witness glass packaging production at plants.

NEW PRODUCT DEVELOPMENT PROJECTS

The Product Design Center applies for new patents for its new product development projects and expands existing markets with its different system

designs while also creating new markets. Şişecam aim with new product development projects, which provide sustainable added value to customers as well as the company, is to expand the market with innovative product designs.

Double-Chain Twist-Off Head

Used for the first time throughout the world, this innovative idea uses a single mould instead of two, offering an economical solution appropriate to the periodical needs of customers.

Funny Finish

The 'Funny Finish' concept makes it possible to apply figures such as hearts or flowers on the mouth of the bottle, which is a quite limited area, and constitutes an answer to the claim that "what can be done in terms of form has been done already."

Olive Oil Bottle with Aerosol Head

This design allows olive oil to be used in a practical way at the table with a single use aerosol bottle, allowing customers to fill the glass bottles with no alteration to their filling line.

Petite

A different communication field has been created with the petite bottle, in which details such as product name and logo have been applied to the seal field, and as a next step, visual richness has been enhanced by the creation of wing-like pockets within the bottle.

IN HOUSE DESIGN UNIT IN RUSSIA

Şişecam Glass Packaging in-house design unit gives its customers the opportunity to materialize their ideas and adjust packages both to manufacturing capa-

Şişecam invests in its highest capacity glass packaging furnace

Making significant contribution to the Turkish economy and employment, Şişecam Group will increase its annual glass packaging production capacity in Turkey to 1.2 million tons together with the launch of the new furnace with an annual production capacity of 150,000 tons to be equipped with the latest Industry 4.0 technologies.

Prof. Ahmet Kirman, Şişecam Group's Deputy Chairman and CEO, stated that they continue to add value to Turkey, and added: "Our Group has invested its proceeds generated for more than 81 years since the very first date of its foundation back to our country, and has now come to a strong global position in its field. Şişecam Group continues its operations with the aim of achieving its sustainable growth targets. We will be launching our largest glass packaging furnace in Turkey as a result of this investment." With the fourth furnace to be put into operation in its Eskişehir Glass Packaging Plant, Şişecam Group adds one more to its investments in Turkey. Operating under the body of Şişecam Group, Şişecam Glass Packaging plans to put into operation its new furnace built with an investment of TL 240 million, in the second half of 2018.

The world's fifth largest glass packaging manufacturer with a total production volume of 2.3 million tons/year in four countries including Turkey, Şişecam Glass Packaging will have increased its annual production capacity in Turkey to 1.2 million tons as a result of its most recent furnace investment in its Eskişehir Plant.

Turkey's largest glass packaging manufacturer with its three plants in Bursa, Eskişehir and Mersin, Şişecam Glass Packaging had increased its capacity in Turkey to 1 million ton as a result of its investment of TL 120 million made in June.

Commenting on the new investment, Prof. Ahmet Kirman, Deputy Chairman and CEO of Şişecam Group, stated that they were the third largest manufacturer of glassware and the fifth largest manufacturer of glass packaging and flat glass today, and continued: "In addition to ranking among the top 10 soda producers of the world, we are also the world leader in chromium chemicals. Continuing its production activities in 13 countries, our Group strengthens its capacity and technological power with its innovation, creativity, expertise and qualified human force, and looks toward the future with trust thanks to its product and service quality meeting the changing market needs."

Noting that they continue to add value to Turkey, Kirman added: "Our Group has invested its proceeds generated for more than 81 years since the very first date of its foundation back to our country, and has now to a strong global position in its field. Şişecam Group continues its operations with the aim of achieving its sustainable growth targets. We will have opened our largest glass packaging furnace in Turkey as a result of this investment, and have made one more contribution to the country economy."

Reminding that Eskişehir Glass Packaging Plant was founded in 2013, Kirman said: "As a result of our fourth furnace investment in this plant, we are now proud to make one more contribution to both the country's economy and production in Eskişehir, where we have been continuing our production activities for four years."

Stating that Şişecam Group continuously renovates its existing facilities in response to the technological developments, Kirman said: "With the fourth furnace to be launched in Eskişehir Glass Packaging Plant, we will continue to carry out production activities with latest available technology. We will equip this furnace in accordance with Industry 4.0 requirements."

“We have made one more contribution to both the country's economy and production.”

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The 'Glass is Glass Again' Project

The 'Glass is Glass Again' Project is one of the most comprehensive sustainability and social responsibility projects in Turkey. Launched in 2011 by Şişecam Glass Packaging in collaboration with the ÇEVKO Foundation and local authorities, the 'Glass is Glass Again' project is one of the most comprehensive sustainability and social responsibility projects in Turkey. Aiming to create change in social behaviour and support the transition to a recycling society, the project has three primary objectives:

1. Creating awareness and informing society about recycling glass packaging;
2. Improving the infrastructure for collecting glass packaging waste;
3. Streamlining the facilities where glass packaging waste is collected and processed, and separating glass packaging waste found in household waste prior to storage.

Glass is a packaging material that can be 100 per cent recycled without loss in quality. For example, one recycled glass bottle is enough to produce one new glass bottle.

Recycling one glass bottle saves enough energy for a computer to run for 25 minutes and a television for 20 minutes. Using cullet in glass production at a level of 10 per cent makes it possible to save 21 per cent in raw materials and 2.5 per cent in energy, and to decrease carbon emissions by 5 per cent.

As part of the project, over 200,000 primary school students have received an education in recycling since 2011; approximately 12,000 glass banks have been donated and 550,000 tons of glass packaging waste have been recycled. The resulting reduction in carbon emissions equals 200,000 cars taken off the roads, and the amount of energy saved was enough to meet the heating and hot water needs of 23,000 households. In addition, Şişecam Glass Packaging collaborated with 130 district municipalities in 21 provinces in order to create social awareness, improve the infrastructure for collection, and streamline facilities for glass recycling.

bilities and in line with Russian or international standards applicable to glass packaging.

Şişecam's design team members are certified and remain up to date with regular training they receive including that from American Glass Research, one of the world's leading glass research institutions.

The company's tailor-made, process-specific software creates visual 3D virtual mock-ups. It allows numerous changes to be made before making a final decision on a model. On top of that, gypsum models are available thanks to a full colour 3D plotter, with a degree of precision is 1 millimetre (or 0.1 centimetre), in only two days.

The design centre offers actual bottle glass thickness and impact resistance assessments at critical

points and consults customers on optimal packaging weight to enhance end-user usability, reduce wastage or save on shipping costs.

DECORATION CENTER

The Şişecam Glass Packaging Group is a full solution partner operating in a heavily competitive market offering healthy and dependable glass packaging alternatives to its customers as well as printing and decoration services that will make these products stand out on shelves.

The decoration centre at the Eskişehir Plant is one of the biggest of its kind in Europe, extending over a total of 54,000 square meters with 34,000 square meters of indoor area, and a decoration capacity of over 300 million units per year. The centre uses the latest technol-

ogy for screen printing in up to seven colours and UV printing in up to four colours. Bottles coloured with organic and inorganic dyes easily stand out, while sleeve coating and transfer printing options add richness to glass packaging design. ■



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