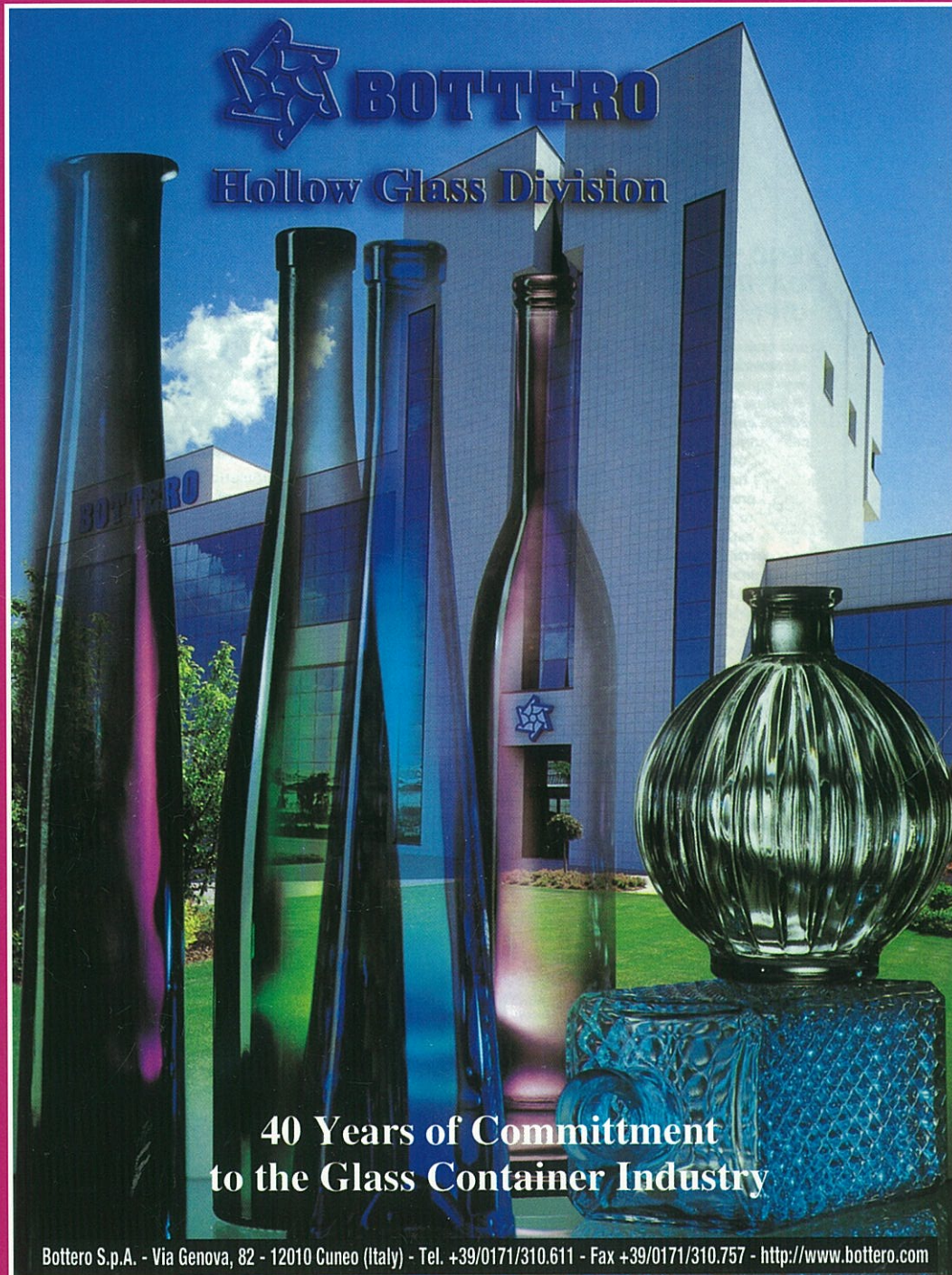


glassmachinery world plants & accessories

BI-MONTHLY INTERNATIONAL MAGAZINE FOR GLASS MANUFACTURING

YEAR 12 - ISSUE NO. 5/1999 - SEPTEMBER/OCTOBER



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A look at the Portuguese glass industry



THE GLASS SECTOR IN PORTUGAL CAN TYPICALLY BE DIVIDED INTO THE SUB-SECTORS OF FLAT-GLASS, CONTAINER GLASS AND CRYSTAL. DESPITE A WORLDWIDE ECONOMIC RECESSION DURING THE EARLY NINETIES AND RECESSIONARY TRENDS IN THE CRYSTAL MARKET DURING THE LAST DECADE, TOTAL GLASS PRODUCTION IN PORTUGAL HAS EXPANDED SIGNIFICANTLY IN RECENT YEARS. HERE, TRENDS IN THE PORTUGUESE GLASS INDUSTRY AS WELL AS THE SUB-SECTORS OF FLAT GLASS, CONTAINER GLASS AND CRYSTAL WILL BE DISCUSSED.

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RUI ALMEIDA**

INSTITUTO SUPERIOR TÉCNICO



OVERVIEW OF TRENDS

After a period of world-wide recession around 1992-1993 which affected both production and consumption, the glass sector has been recapturing a privileged role as a packaging material in the European and worldwide markets due to its unique recycling properties. Presently, efforts are mainly being directed at improving recycling, manufacturing procedures and energy efficiency. In the last decade, total glass production in Portugal has expanded by approximately 83 per cent.

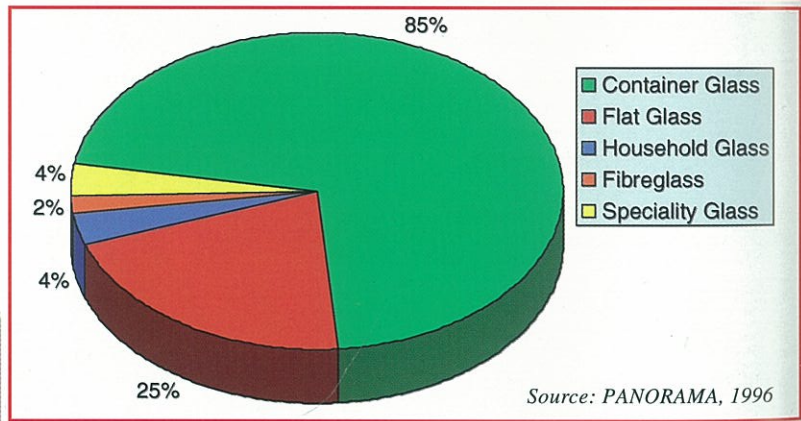
Going slightly further back, during the decade 1985-1994, the evolution of the various glass sectors in Portugal was distinct from that in the rest of Europe and elsewhere, as the Portuguese container glass sector was composed of a set of medium-size companies which underwent a marked effort to train their technical staff and renew their equipment. On the other hand, the household glass sector, traditionally incorporating crystal, is still dominated by small and medium-sized enterprises which tend to be family owned.

The flat and container glass industries are the most advanced of the glass sectors in Portugal.



FIG. 1

GLASS PRODUCTION CAPACITY BREAKDOWN IN THE EUROPEAN UNION (1996)



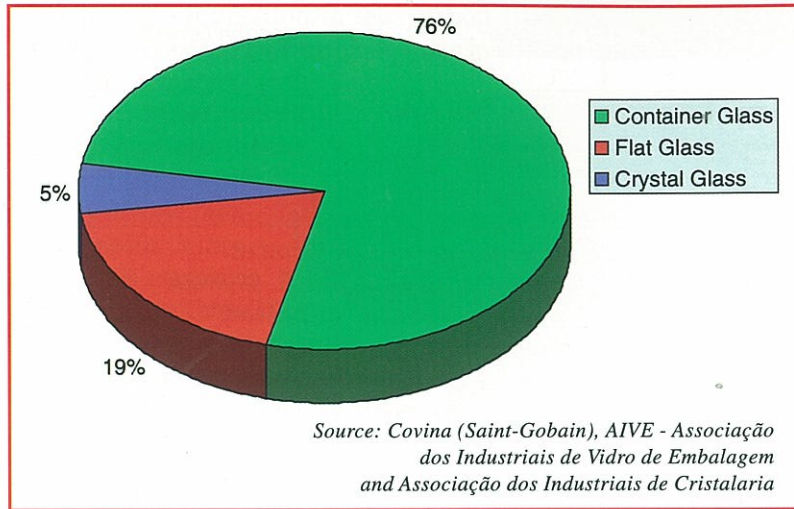
In terms of production technology, quality and yield, they are fairly competitive with other foremost foreign glass manufacturers. During the decade 1985-1994, the crystal glass sector, which is currently undergoing a process of restructuring, faced tremendous competition at the international level as well as a marked recession.

The main markets for Portuguese exports in the sectors of



FIG. 2

GLASS PRODUCTION CAPACITY BREAKDOWN IN PORTUGAL (1996)



container glass and flat glass are the member states of the European Union, particularly Spain. As regards crystal, export activity is more worldwide. Specific niche market products go to the European Union, the USA and, on a smaller scale, to the rest of the world. The manufacturing of fibre-glass is not considered to be significant in Portugal. In the speciality glass segment, only a small number of companies work in the transformation area. In 1996, the flat glass, container glass and crystal glass sectors showed a production capacity breakdown which very closely resembled the corresponding European structure (see Figures 1 and 2).

Although there is a tradition in Portugal that goes back hundreds of years in the manufacture of glass for laboratory, pharmacy and medicinal purposes, the current fierce competition between German, American and Italian companies limits the growth of national plants aimed at manufacturing such articles. Presently, there is only one factory in Portugal operating with these types of products.

FLAT GLASS

Flat glass is mainly produced near Lisbon by one single company, Covina, which belongs to the largest world glass manufacturing group; namely Saint-Gobain. (see Table 1).

In tonnage, the manufacturing of flat glass represents 19 per cent of total glass production in Portugal and in financial turnover it represents 10 per cent of the same figure. Covina's activity is diversified in a wide range of products for the building and automotive industries and other transformation products. During the first six months of 1996, glass production was suspended at Covina due to blast-furnace reparation and mod-

TABLE I

COVINA AND THE COVINA GROUP

	COVINA	COVINA GROUP
Type of company	Glass producer	Glass transformer
Locality	Lisbon	Lisbon, Porto, Faro
No. of plants	1	6
Capital structure	Saint-Gobain 20% Cristaleria-Española 80%	Covina Group
Range of products/production processes	Flat glass/Float	Transformed flat glass processes
Furnaces (tonnage)	1 furnace (500 ton/day)	
Energy source	Fuel/air	
Industrial cullet/urban cullet	Own industrial cullet (5% batch)	
Raw materials (national/imported)	National	
No. of employees (engineers, technicians, workers)	700	
Certification	ISO 9000 NP EN 45001	IPQ*
Total production (1996)	33 million Euros/year	
Markets	60% (national market) 40% (export)	

* Portuguese Institute for Quality



TABLE 2

MAIN PORTUGUESE CONTAINER GLASS COMPANIES

	RICARDO GALLO	SOTANCRO	SANTOS BAROSA
Type of company	Glass producer	Glass producer	Glass producer
Locality	Marinha Grande	Lisbon	Marinha Grande
No. of plants	1	1	1
Capital structure	Heye-Glas 16.17% J.P.Morgan 15% Larache Ent 14.78% Gallo Family 26.87%	Heye-Glas 54% National 46%	Santos-Barosa family 100%
Range of products/ production processes	Bottles, pots I.S. (7 section and double drop blowed/blowed and pressed/ blowed)	Market niches and small series I.S. (6 section and double drop blowed/blowed pressed/blowed and "narrow neck")	Bottles I.S. (blowed/ blowed)
Furnaces (tonnage)	2 furnaces (190 ton/day and 150 ton/day)	2 furnaces (200 ton/day and 60 ton/day)	4 furnaces (466 ton/day)
Energy source	Fuel/air (convection heat transfer)	Fuel/air (convection heat transfer)	Fuel/air, gas, electricity (convection heat transfer)
Industrial cullet/ Urban cullet	Clear glass-25% Green glass-40% (cullet treated in the factory)	Clear/green glass-15% Amber glass-20% (cullet treated in the factory)	(cullet treated in the factory)
Raw materials National/imported	National/ imported (dyes)	National/ imported (dyes)	National
No. of employees (engineers/technicians/ workers)	380		500
Certification	ISO 9000		ISO 9000
Total production	100,000 ton/year	100,000 ton/year	170,000 ton/year
Markets	50% national market 50% export	50% national market 50% export	50% national market 50% export

ification. An investment of 33 million Euros was made, leading to a 50 per cent increase in production capacity. The untransformed flat glass is mainly used in the construction and automobile industries. Contrary to what was observed in the rest of Europe, Portugal registered an increasing demand for flat glass in 1995 and 1996. A significant volume was spent in large architectural struc-

tures like the "Centro Cultural de Belém", the "Centro Comercial Colombo" and EXPO '98 (in Lisbon), as well as a set of other high quality buildings in the cities of Lisbon and Porto.

However, a recent increase in established production capacities and the construction of new float plants in Europe, together with a recession in the European markets of construction and automobiles, led

to a production surplus and a price decrease, with some negative consequences for Portuguese flat glass production.

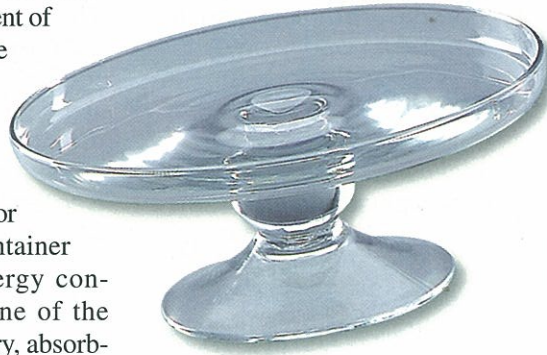
CONTAINER GLASS

Container glass manufacturing represents 76 per cent, in tonnage, of the total glass production in Portugal and 70 per cent of the same figure, in terms of turnover. After a period of recession at the



beginning of the 1990s, container glass production has grown in tonnage at an average rate of 7.5 per cent per year. At present, Portugal occupies eighth position in the ranking of countries which produce glass containers in the European Union, with 4 per cent of total production. Since container glass is not a highly diverse product, domestic competition in this segment is very strong (see Table 2 for the main Portuguese container glass companies). Energy consumption represents one of the main costs of this industry, absorbing almost one quarter of total production costs. It is likely that the introduction of natural gas, already installed in Portugal, may reverse this factor. Geographically, Portugal

is in a disadvantaged situation in Europe, due to the contribution of high transportation costs to the final product price; this limits export of container glass to markets at a maximum distance of approx-



imately 2,000 km. Currently national glass producers are aiming (on the technological side) to produce increasingly light and mechani-

cally resistant containers and also to improve product quality. Most of the container glass plants are already certified by the ISO 9000 standard.

CRYSTAL

In tonnage, the manufacture of crystal represents 5 per cent of total glass production in Portugal and, in turnover, 20 per cent of the same figure. Portugal suffered from the recession in 1994 and 1995 and has followed the European market fluctuations in crystal. This market recovered more or less slowly, depending on the type of manufactured products, with the producers of lead crystal glass being the most affected. The crystal glass sector is being restructured in Portugal. By the end of 1999, it is expected that the companies involved in this restructuring programme will have sufficient technology in order to be able to compete strongly with their European counterparts. Table 3 gives more detail about the Portuguese crystal glass companies, Crisal and Dâmaso.

CONCLUSIONS

The glass sector in Portugal is relatively small in European terms (4 per cent of total EU tonnage), but it is quite significant in national terms, even though it is not a labour intensive industry.

In worldwide terms, technological levels are adequate in the flat and container glass sectors, but less advanced in the crystal glass sector. Fibreglass and speciality glass sectors are practically nonexistent. There is an important tradition in the manufacture and use of glass products in Portugal, including artistic applications. Considering that Portugal is a member of the European Union (and of the single European currency) and taking into account the continued efforts

TABLE 3

CRISAL AND DÂMASO

	CRISAL	DÂMASO
Type of company	Glass producer	Glass producer
Locality	Alcobaça	Marinha Grande
No. of plants	1	1
Range of products/ production processes	Art glass/manual	Art glass and glass tile/semi automatic and manual
Furnaces	2 furnaces (6 ton/day each)	2 furnaces (clear glass/ coloured glass)
Energy source	Gas, electricity	Fuel/air
Industrial cullet/ urban cullet	Own industrial cullet (50% batch)	Own industrial cullet
Raw materials (national/imported)	Imported (sand and dyes)	National/ imported (dyes)
No. of employees (engineers/ technicians/workers)	380	
Certification	ISO 9001	
Total production	100,000 ton/year	
Markets	50% (national market) 50% (export)	50% (national market) 50% (export)

of modernization of the national glass industry and the crystal glass sector in particular, a sustained increase in the importance of this sector of Portuguese industry is expected.

ACKNOWLEDGEMENTS

This work has been financed by the Iberoamerican Cooperation Programme CYTED (Science and Technology for Development) within the framework of the Iberoamerican Network on Glass Science and Technology VIII-E.

This paper has been published in the book "El Vidrio en Iberoamérica. Investigación y Formación", edited by CYTED and SECV, Madrid (1998), pages 109-126.



THE PHOTOGRAPHS FOR THIS ARTICLE WERE KINDLY SUPPLIED BY DÂMASO, OF PORTUGAL

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BARBOSA LAUNCHES HOSTILE TAKEOVER BID FOR VILESA

Spanish glassmaker Vidriera Leonesa (**Vilesa**) said a takeover bid by Portugal's Vidros **Barbosa & Almeida**, through its wholly owned subsidiary Lambda del Piero SA Sociedad Unipersonal, was *unsatisfactory and undervalued the company*. *Barbosa & Almeida already owns 3% of Vilesa and it said in July it would bid for the remaining 3.48 million shares at Euros 14.5 each. In a report to shareholders filed to Spain's stock market regulatory commission, CNMV, Vilesa said the price was too low given the company's cash-flow generation over the past three years. It added that Barbosa & Almeida had not presented an attractive business plan for the company, and moreover there was little opportunity to save costs by combining the two firms.*

"If the offer is successful, the group's production would rise purely from the sum of its units, but this does not imply any economies of scale," Vilesa said in its report. It concluded that the offer was "unsatisfactory and low in price, and as such, negative for Vilesa shareholders".

Nevertheless, the hostile Euros 50.49 million takeover bid was approved by the CNMV, which granted the Portuguese glassmaker a forty-five-day period to complete its takeover. According to a report,

Barbosa & Almeida offered Euros 14.5 for each of Vilesa's 3.48 million shares. The bid would be successful, CNMV said at the time, if Barbosa & Almeida bought at least 1.67 million or 47.92%, of Vilesa's shares prior to 6 September, or 5.01 million shares at Euros 4.83 a share after that date. The reason for the difference in the amount of shares and price reflected Vilesa's three-for-one share split scheduled for 6 September, the report said.

If Barbosa & Almeida succeeded in buying 47.92%, it would gain a 51% controlling stake in Vilesa. Barbosa & Almeida said that if it failed to buy 100% of Vilesa it could "begin the necessary measures to delist Vilesa within twelve months."

Vilesa's shares were listed in Spain in February 1998. Barbosa & Almeida first announced its intention of bidding for Vilesa on 28 July and subsequently placed a Euros 50.49 million deposit with a Spanish branch of Banco Portugues de Investimento SA. Meanwhile, the Lisbon bourse bulletin said that the Portuguese glass company was due to discuss a capital increase of up to Euros 25 million at a general assembly on 1 October. The bulletin did not elaborate on terms of the capital increase. Barbosa & Almeida currently has a nominal capital of Euros 30 million.