ALMACO
ASSOCIAÇÃO LATINO-AMERICANA DE MATERIAIS COMPÓSITOS

COMPOSITES MARKET PERFORMANCE INDICATORS

2021| 2022

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Term of office
2022-2024

INTRODUCTION

Sectoral performance indicators provide greater assertiveness in viewing trends and creating scenarios. They also strengthen the representativeness and credibility of industries before government agencies and global markets.

Consistent data and market knowledge are essential for business planning and management.

Therefore, the Latin American Composite Materials Association (ALMACO) presents in this report the Composites Market Performance Indicators.

Based on surveys and interviews carried out with members of the entire material production chain, ALMACO consolidated data for 2021 and the sector's projections for 2022.

Enjoy reading and, above all, good business involving composites!

Composites pole

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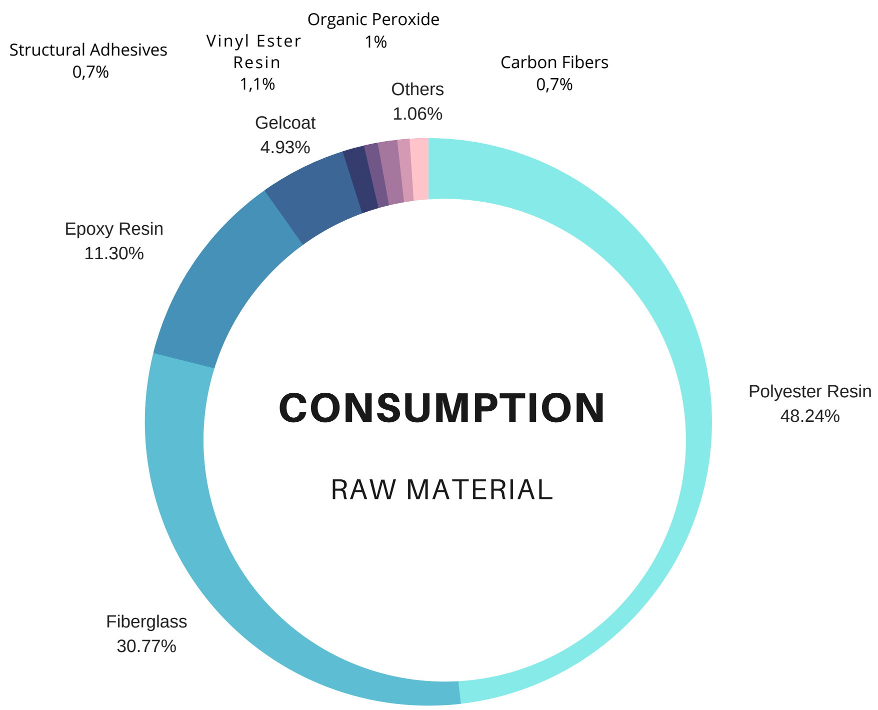
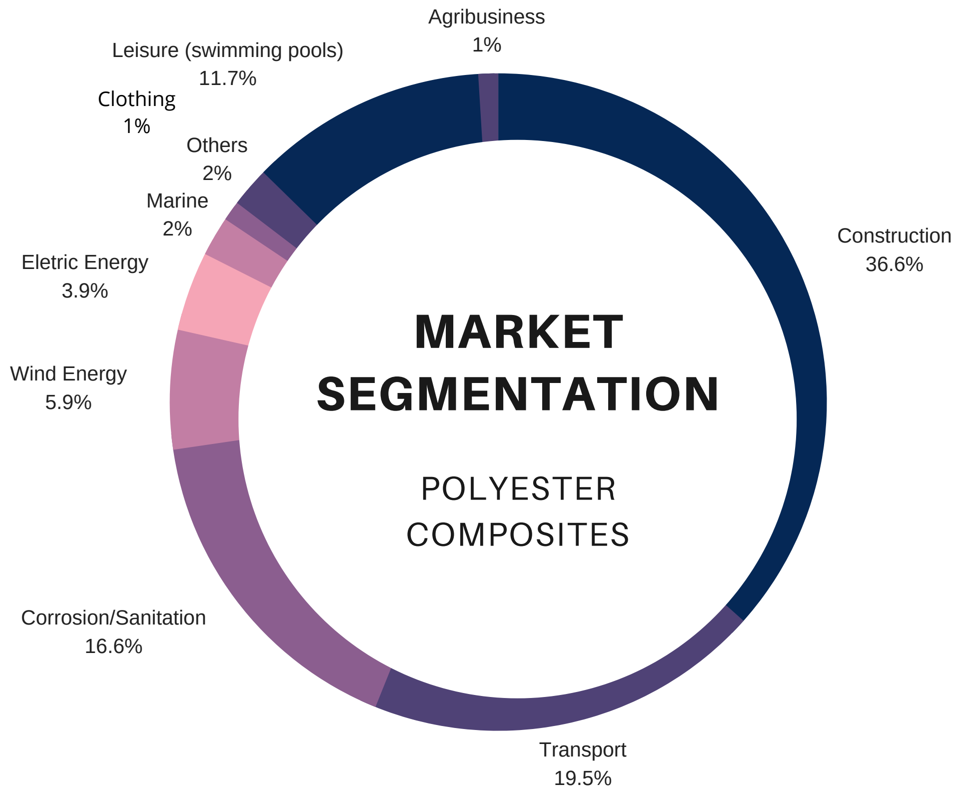
RESEARCH

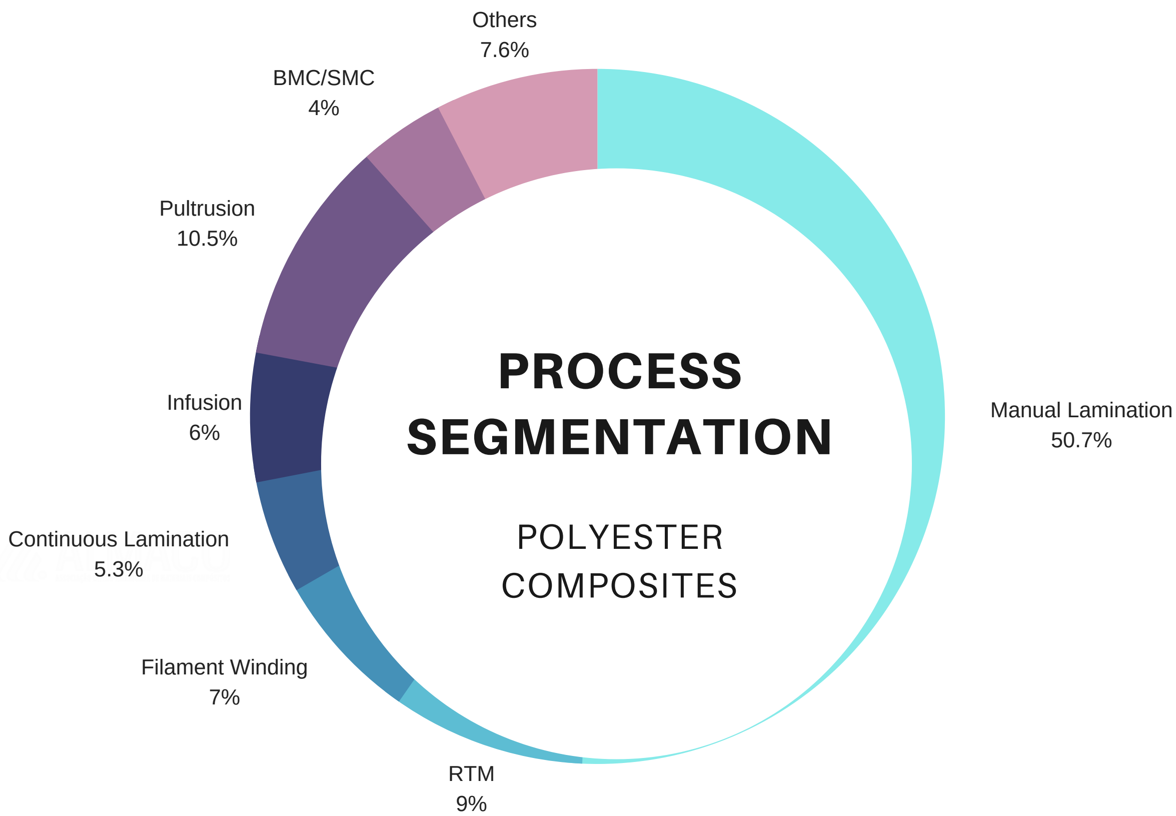
INDICATORS/YEAR	2020	2021	2022*	2020/2021	2021/2022*
PRODUCTION VALUE (MILLIONS/US$)	623	848	1000	36%	18%
RAW MATERIAL CONSUMPTION (THOUSAND TONS)	208	245	252	17,8%	3%
JOBS	62,1	67,9	68,7	9,5%	1,3%
OPERATIONAL LEVEL (%)	59,0	71,0	72,0	20%	1,4%

RAW MATERIAL	VOLUME (KTON)
POLYESTER RESIN	118,2
FIBERGLASS	75,4
EPOXY RESIN	27,7
GELCOAT	12,1
VINYL ESTER RESIN	2,9
ORGANIC PEROXIDE	2,6
STRUCTURAL ADHESIVES	1,7
CARBON FIBERS	1,8
OTHERS	2,6
TOTAL	245

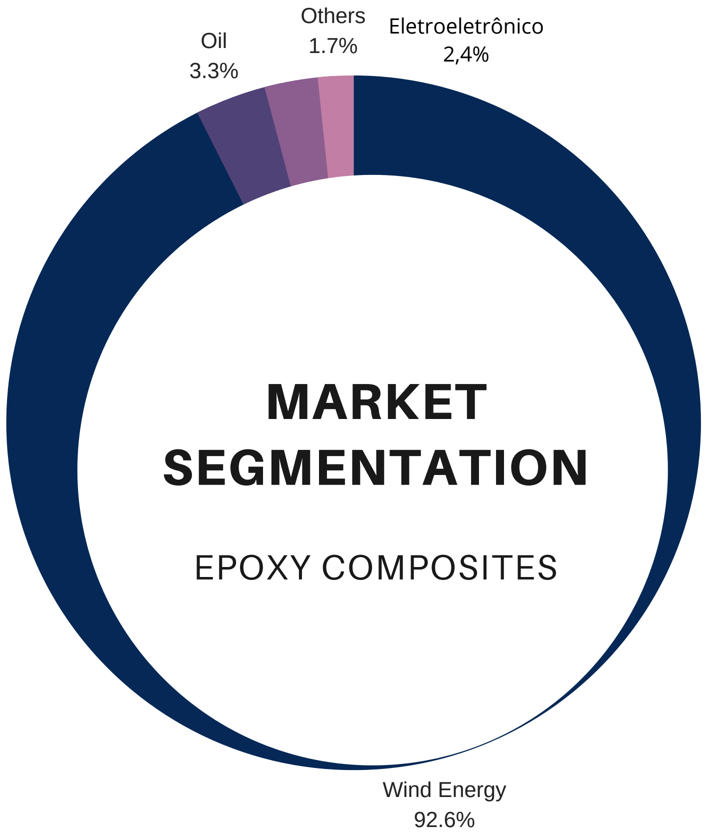


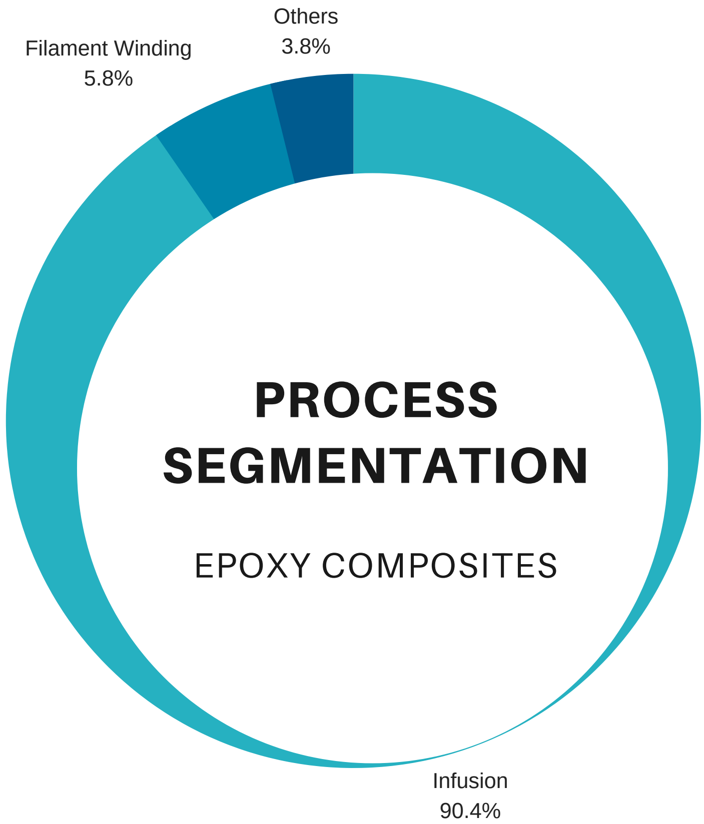
RESEARCH


MARKET SEGMENTATION
POLYESTER COMPOSITES
Agribusiness 1%
Leisure (swimming pools) 11.7%
Clothing 1%
Others 2%
Marine 2%
Eletric Energy 3.9%
Wind Energy 5.9%
Corrosion/Sanitation 16.6%
Transport 19.5%
Construction 36.6%


PROCESS SEGMENTATION
POLYESTER COMPOSITES
Others 7.6%
BMC/SMC 4%
Pultrusion 10.5%
Infusion 6%
Continuous Lamination 5.3%
Filament Winding 7%
RTM 9%
Manual Lamination 50.7%

RESEARCH


Oil
3.3%
Others
1.7%
Eletroeletrônico
2,4%
MARKET SEGMENTATION
EPOXY COMPOSITES
Wind Energy
92.6%


Filament Winding
5.8%
Others
3.8%
PROCESS SEGMENTATION
EPOXY COMPOSITES
Infusion
90.4%

CONSTRUCTION

Civil construction ignored the challenges of 2021 – second wave of the pandemic, raw materials shortage and escalating costs – and achieved the best performance of the decade: growth of 7.6%, according to data from the Brazilian Chamber of Construction (CBIC).

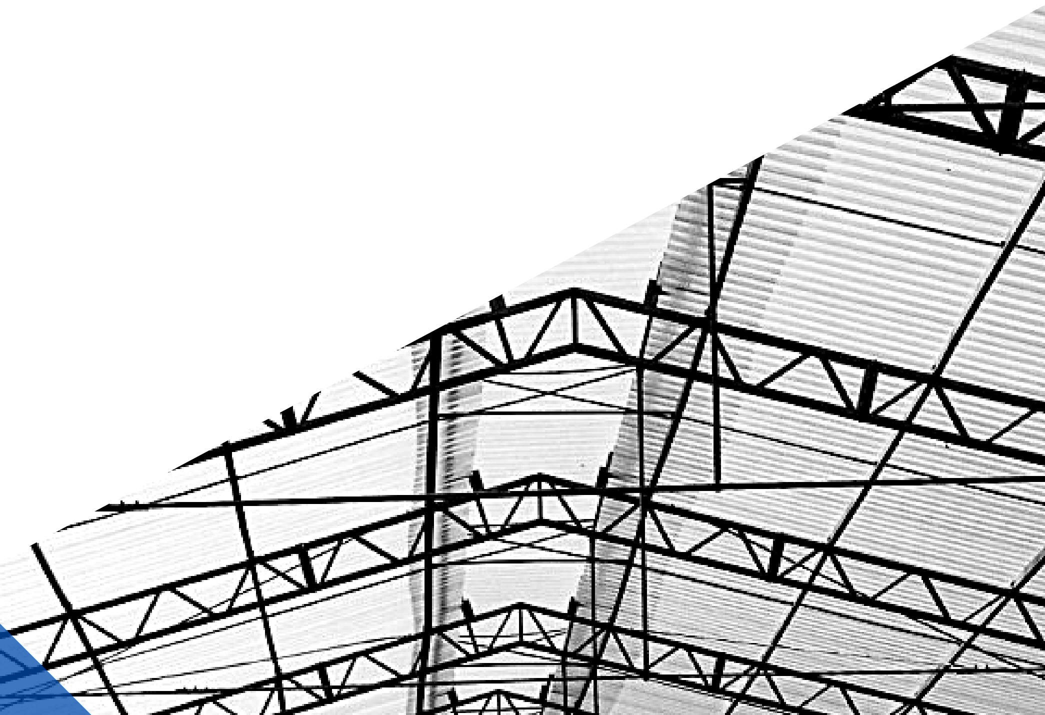
Responsible, in 2021, for a share of 36.6% of Brazilian composites consumption, construction in good shape is all that a significant part of the material production chain wants to hear, even if the margins have not experienced exuberant days.

More well-established applications, such as water tanks, continued to capture representative market shares. They even relived the good times when manufacturers of polyethylene water tanks had some work to do, absolute leaders who, due to successive increases in the prices of thermoplastic resin, had their competitiveness slightly shaken from time to time.

Despite the reduction in government aid, popular new construction and renovations continued to push up the sales of sinks and washing tanks made of synthetic marble, products sold in a channel – the building material stores – whose performance jumped 16% in 2021. At the same time, composite tiles benefited from the doubling of the number of logistic sheds in the period, a jump caused by the increase in online sales, a modality that exploded during the pandemic. In the 4Q alone, Brazil built 1 million m² of warehouses, a historic record.

For 2022, the construction industry works with a much less favorable horizon. Some analysts point to a growth of 2%. The drop compared to the performance of 2021 is credited to the combination of inflationary pressure, population with less purchasing power, economic weakness in the country in general and political instability in an election year.

In any case, the construction market is what brings together, in Brazil, the greatest chances of boosting the demand for composites, whether through traditional or new applications.



LEISURE/SWIMMING POOL

The pandemic will be remembered as the golden period of the Brazilian swimming pool industry. According to the National Association of Swimming Pool Companies and Professionals (ANAPP), the average growth in the years 2020 and 2021 was 18.7%, a leap basically guaranteed by the mantra "stay at home". An icon of composites applications, it is estimated that swimming pools accounted for a 15% share of polyester resin consumption last year.

In 2021, however, signs were already noticed that the party was ending. Rising raw material prices – around 70% in resin and 100% in fiberglass, the latter of which was still scarce –, associated with lower purchasing power and, of course, the fact that the same consumer does not buy a swimming pool every year began to dampen market sentiment.

In 2022, with more inflation and less money circulating, closing the period with the same volume of pools sold in 2021 will be cause for celebration for the entire chain.

TRANSPORT

The Brazilian bus market grew by 2.6% in 2021, totaling 18,881 units. Of this amount, 2,395 fall into the road buses category, 18.4% lower than the already paltry result of 2020. In other words, the martyrdom started in the pandemic worsened last year.

To the delight of the composites production chain, the scenario changed in 2022, with a 10.2% increase in the volume of buses produced in the year (until April). The main responsible for the rise was precisely the one most affected by the health crisis: road buses, which recorded a jump, so far, of 104.3% compared to the same period in 2021.

In terms of trucks, on the contrary, 2021 was a spectacular year, the best since 2013, with a total production of 158,800 units (+74.6%). It is worth noting that the period was marked not only by widespread increases in raw material prices, but also by shortages of certain inputs, such as semiconductors.

Despite the dismal forecasts for the Brazilian economy in 2022, the truck market should continue to grow. Agribusiness will continue to play a leading role, with significant support from construction, mining and urban logistics. In any case, the limitations to meet the demand for lack of electronic components will still be a brake on the performance of automakers.

CORROSION/SANITATION

The year 2021 marked the continuity of supplies of tanks and special composites equipment for the Star Project, name of the expansion budgeted at US$ 1.5 billion that Bracell made in its pulp plant in Lençóis Paulista. In parallel with smaller projects and maintenance stoppages – postponed in 2020 because of the pandemic and carried out in 2021 –, the demand for vinyl ester resin-based composites was slightly higher than that noted a year earlier in this area.

It is also worth mentioning the good phase experienced by the sugar and alcohol sector, a movement driven by the resumption of post-pandemic sugar consumption and the increase in the price of ethanol, at parity with gasoline. Capitalized, the plants invested in the renovation of their tanks, vinasse cooling towers and pipes.

The great unknown for companies that transit in the high corrosion sector is the competitiveness of composites. With the continuous rises in raw material prices – and, the worst, with fiberglass shortage –, defeats in disputes against metallic materials are already being recorded, even though steel has also risen significantly and constant.

In the area of basic sanitation, the vaunted universalization determined by the Regulatory Mark has raised questions here and there whether the production chains of pipes and tanks, including composites, will do the job.

However, what has actually been seen are resources being injected into "private sanitation", instead of government funds available for large-scale works.

Thus, in 2021, the demand for tanks and composite equipment for water and effluent treatment plants in industries, shopping malls and condominiums grew, a movement that tends to last throughout 2022.

ENERGY

In 2021, Brazil was the third country that installed the most wind farms, repeating the feat of 2020, and behind only China and the US. In comparison with 2020, the growth was around 18%. In all, the country has more than 9 thousand wind turbines distributed in 795 wind farms that generate 21.5 GW – by 2026, this number will jump to 36 GW.

The scenario could not be more auspicious for the composites sector, with emphasis on the use of epoxy, material for the blades, although polyester – around 6 thousand tons/year – is present in nacelles and spinners.

Today in sixth position in the Ranking of Installed Capacity of Onshore Wind Energy, Brazil is already discussing the release of offshore wind energy generation. In January, the government issued a decree that clarifies the mechanisms for the transfer of use in Union waters. The future is very promising for wind energy in the country and, as a result, for the composites sector.

Regarding electricity transmission, market for crossarms and composite poles, the pace of growth accelerated in 2021.

The total lines kilometers added to the National Interconnected System (SIN) last year was greater than the distance between Rio de Janeiro and Portugal: 7,822 km. Thus, 6,500 km of transmission lines were added to the system, 19% more than in 2020.

All this, obviously, was reflected there at the end, that is, in the demand for poles and crossarms. For 2022, year of elections, the expectation is for a 15% increase in the volume of transmission lines.

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AGRIBUSINESS

Engine of the Brazilian economy – it accounts for 27.5% of the country's GDP –, agribusiness recorded an increase of 8.36% in 2021. This sector in a good phase brings with it hundreds of others, including agricultural machinery and implements, areas where the consumption of composites is relevant.

In 2021, sales of tractors and agricultural machinery rose a robust 26%, almost repeating the same growth rate as in 2020 (27%). As a result, even as the prices of resins and fiberglass have increased, composites manufacturers have filled their factories with orders to produce hoods, roofs and fenders.

Market analysts believe that, in 2022, Brazilian GDP will not be negative thanks to the projected 3-5% growth in agribusiness. Thus, even if it does not repeat the brilliant numbers of the last two years, the farms will guarantee the positive balance not only of the country, but also of many companies in the composites sector.

It is worth noting that there are still many unexplored applications of composites in this sector in Brazil, such as solutions for the storage of raw materials.

CLOTHING INDUSTRY

With life gradually returning to normal in 2021, people began to get out of the house more, participate in events and resume socializing. This had a positive impact on the turnover of clothing items, responsible for chunks of local consumption of composites transformed into buttons.

Thus, apparel sales rose 13.8% last year, a result still insufficient to cover the 22.5% loss recorded in 2020.

More specifically in the area of buttons, local manufacturers continue to suffer from competition from imported products. About 40% of Brazilian demand is supplied by buttons made in Asia, and around 60% of the clothes sold in Brazil were produced in other countries – that is, they already have buttons.

This year, even with high inflation and economic instability, the Brazilian Textile and Apparel Industry Association (ABIT) projects a growth of 7.4%, reaching 2 million tons produced.

MARINE

Brazilian shipyards have nothing to complain about. In 2021, official data point to a growth of more than 10% compared to the previous year, a period that was already very good. The outbreak of the pandemic and the search for more reserved leisure, the kind of "buy a boat and get an island" type, caused waiting lines for the delivery of boats.

For 2022, the expectation is to at least repeat the growth rate of last year.

Even with widespread increases in raw material prices and more expensive credit, there is huge room for this sector to grow in Brazil. After all, a country with continental dimensions and 11,000 km of coastline has only 700,000 active boats.

ARGENTINA

Finally, the Argentine economy grew. In 2021, the country's GDP jumped 10.3%, surpassing the drop seen a year earlier. Even so, the evolution last year is based on a very flat performance – if the result is compared with the GDP of 2019, for example, growth was negative by 0.6%.

In any case, the turn of the page after such a bad 2020 meant a boost for the composites market, especially for companies operating in infrastructure and sanitation. Those working in the construction, leisure and swimming pool markets improved their already relatively good performance in 2020, thanks mainly to the evolution of purchasing power following the fall in the unemployment rate.

For 2022, the Argentine government forecasts a growth of 4.5% in the economy, a result that will depend on the ratification of the agreement with the International Monetary Fund (IMF) to restructure the public debt and contain inflation, which, in 2021, was 50%.

CHILE

Chilean GDP jumped 11.7% in 2021, the highest in three decades. Ultra-dependent on the mining and salmon fishing industries – large consumers of composites and which were able to continue operating even at the height of the pandemic –, the country combined last year the gradual reopening of the economy with the continuity of plans to release government resources to heat the consumption.

In 2022, the outlook is for growth of 3-4%, still benefiting from measures to support the population during the health crisis.

A proposal in the Constitutional Convention that would pave the way for the nationalization of Chile's mines and another that mining concessions would be temporary generated concern in the sector. So did the newly elected president's environmental criticism of the salmon industry.

COLOMBIA

The Colombian economy also hit a historic growth record in 2021, totaling 10.6% compared to 2020 – the biggest evolution in the last 115 years. Not bad for a country whose GDP shrank 7% in 2020, due to the health crisis.

Commerce, transport, food, manufacturing industries and the public sector supported this growth, and many of them are closely linked to the composites chain.

In 2022, analysts point to an evolution of 4.8% of the Colombian economy, a result that, if confirmed, will be the best of Latin American countries in the period.

ALMACO

Founded in 1981, ALMACO's mission is to represent, promote and strengthen the sustainable development of the composites market. With central administration in Brazil and regional headquarters in Chile, Argentina and Colombia, ALMACO has around 400 members (companies, entities and students) and maintains, together with the Institute for Technological Research (IPT), the Composites Technology Center (CETECOM), the largest of its kind in Latin America.

Resulting from the combination of polymers resins and reinforcements – for example, fiberglass –, composites are known for their high levels of mechanical and chemical resistance, associated with design freedom. There are more than 70,000 applications cataloged around the world, from water tanks, pipes and wind blades to parts for boats, buses, trains and planes.

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