# The European composites market 2009: development, challenges, opportunities

The production volume in the European market for fiber reinforced plastics decreased in 2008 and 2009 by approx. 1/3 compared to 2007. This slump affected all relevant areas of production and manufacturing countries, albeit to various degrees. Since the second half of 2009 the market has stabilized, and for 2010 new, if moderate, growth is expected. Generally, the future for composites is considered very positive.

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## Market development

The German professional association AVK (Industrievereinigung Verstärkte Kunststoffe = Federation of Reinforced Plastics) once more carried out a survey in order to determine 2009 production volumes for fiber reinforced plastics throughout Europe. In order to obtain comparable data, the "entire" European market analyzed in this context - as in previous years - was once more limited to those countries that are familiar to raw materials suppliers interviewed in this context. Market data collection focuses on glass fiber reinforced plastics (GFP). In quantitative terms, glass fibers are still heading the list of reinforcing materials; the development of carbon-reinforced plastics and natural fiber reinforced plastics in particular continues to be elusive, thus precluding a comparable survey.

The general development of the European production industry as well as the plastics industry between 2008 and 2009 had its effect on the market for fiber reinforced polymers/composites as well.

In 2009, the production volume of the entire European market analyzed in this context was about 815,000 tons and has dropped by about a third as compared to 2007.

The distribution of the total GFP production volume over the European countries respectively groups of countries included in this analysis is shown in Table 1.

Currently heading the list of large players in the European market are Spain, Italy, Germany, the UK, and France, whose share in the total volume has increased from approx. 2/3 to almost 75 % by now.

The table shows that the countries were staked in a very different way by the decline. The same goes for the companies involved in the market. The market is very heterogeneous and companies differ in terms of their processing techniques, their structure and size, as well as the industrial applications for which the respective component parts and the products are targeted.

An overview of the production processes in the last 3 years is shown in Table 2.

Despite the detailed representation of individual years in this context, it is recommended to consider three-year periods as entities. Viewed over shorter time frames, information obtained from raw materials producers in the composites market (here: resins and glass fibers), on which data acquisition primarily relies, may, after all, deviate from the volumes actually processed during this time period.

Especially at the start of the economic and financial crisis (2008), the depletion of stocks by companies caused the decrease of raw material sales initially to exceed the decline in composites production.

## Trends in development of procedures/components

The demand for, and the production of, thermosetting component parts made of SMC (sheet molding compound) BMC (bulk molding compound) respectively dropped considerably due to market developments in the main areas of application – automotive and electronics/electrical equipment. The decrease in vehicle production by as much as 50 % and more (in the truck sector) necessitated a structural reorientation in this market segment.

Processors using the open techniques of hand lay-up and spray lay-up are experiencing the greatest impact of general market developments. The contribution of these processing techniques to the entire composites production volume has dropped from almost 1/3 to less than 25 %.

Production of component parts made by closed RTM (resin transfer molding) has suffered somewhat less of a setback. This may be attributed to the continuous substitution of open techniques in conjunction with the low-volume production of component parts with large surface areas.

Among so-called continuous techniques, the market for pultruded GFP profiles in particu-

**Table 1**
**GFP production volumes in Europe, broken down by country/group of countries**

| | 2009* 1,000 t | 2009/08* ±% | 2008 1,000 t | 2008/07 ±% | 2007 1,000 t |
|---|---|---|---|---|---|
| UK/Ireland | 106 | -13.8 | 123 | -14.6 | 144 |
| Belgium/Netherlands/Luxemburg | 31 | -18.4 | 38 | -7.3 | 41 |
| Finland/Norway/Sweden/Denmark | 52 | -24.6 | 69 | -13.8 | 80 |
| Spain/Portugal | 188 | -20.3 | 236 | -12.6 | 270 |
| Italy | 122 | -33.3 | 183 | -12.9 | 210 |
| France | 87 | -24.3 | 115 | -12.2 | 131 |
| Germany | 118 | -18.6 | 145 | -6.5 | 155 |
| Austria/Switzerland | 13 | 0.0 | 13 | -23.5 | 17 |
| Eastern Europe** | 98 | -27.9 | 136 | -7.5 | 147 |
| Total | 815 | -23.0 | 1.058 | -11.5 | 1.195 |

* 2009 = estimated, ** Eastern Europe = Poland, the Czech Republic, Hungary, Rumania, Serbia, Croatia, Macedonia

Table 2

**GFP production volumes in Europe, itemized by techniques/components (2009* = estimated)**

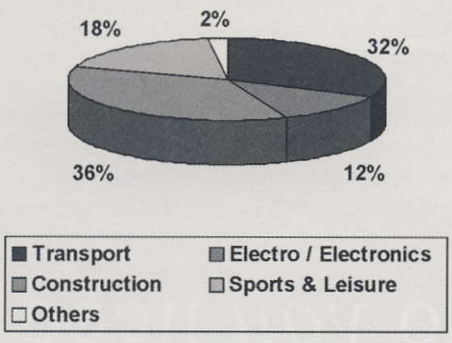
| | 2009* | 2009/08* | 2008 | 2008/07 | 2007 |
|---|---|---|---|---|---|
| | 1,000 t | ±% | 1,000 t | ±% | 1,000 t |
| SMC | 160 | -23.8 | 210 | -7.1 | 226 |
| BMC | 56 | -20.0 | 70 | -10.3 | 78 |
| ∑ SMC/BMC | 216 | -22.9 | 280 | -7.9 | 304 |
| Hand lay-up | 123 | -39.1 | 202 | -17.2 | 244 |
| Spray-up | 74 | -28.2 | 103 | -16.9 | 124 |
| ∑ Open mold | 197 | -35.4 | 305 | -17.1 | 368 |
| RTM | 94 | -11.3 | 106 | -13.1 | 122 |
| Sheets | 56 | -18.8 | 69 | -21.6 | 88 |
| Pultrusion | 39 | -15.2 | 46 | -8.0 | 50 |
| ∑ Continuous processing | 95 | -15.7 | 115 | -16.7 | 138 |
| Filament winding | 69 | -12.7 | 79 | -1.3 | 80 |
| Centrifugal casting | 55 | -11.3 | 62 | -6.1 | 66 |
| ∑ Pipes and tanks | 124 | -12.1 | 141 | -3.4 | 146 |
| GMT/LFT | 75 | -21.1 | 95 | -4.0 | 99 |
| Others | 14 | -12.5 | 16 | -11.1 | 18 |
| Total | 815 | -23.0 | 1058 | -11.5 | 1.195 |

lar is holding its ground relatively well; which is primarily due to individual new infrastructural projects. The partially publicly funded building sector as well as new sales territories, especially in Eastern Europe, have slowed down the decline throughout the GFP pipeline construction and the tank building sector. Just like other procedures, however, thermoplastic molding compounds and semi-finished articles depend largely on the development of the automotive sector and are showing corresponding setbacks.

Despite the difficult market situation in certain segments, composites companies ought to try and obtain orders for larger series production.

Pertinent automation efforts are still offering enormous growth potential.

**GFP production in Europe for individual application industries (2009)**




Apart from new materials, the emphasis is now on new processes and partially also on the development of "mixed techniques" and hybrid production techniques respectively.

Despite the variety of different developments shown by individual processing techniques, the contributions of individual application industries in general are much the same as in previous years. The slight downward trend in the transport industry was compensated by a minor increase in the building sector. Generally, the recession in Europe has affected almost all areas of application to a similar degree.

Despite the decline of the European production industry as well as the plastics industry between 2008 and 2009, future prospects and growth opportunities throughout the composites market are definitely favorable.

This potential for growth could already be seen in the last half of 2009 and even grew in the first months of 2010. The JEC in Paris/France especially points out the positive development.

## Application industries at a glance

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## Outlook

Production volumes in the GFP market will probably have to wait until 2013/2014 in order to return to the level of 2007 and 2008 respectively. This agrees with the general prognosis for the development of the plastics industry during the next few years.

Positive developments, however, revealed by current business confidence surveys performed by umbrella organizations also pertain to the composites industry. Managers are frequently convinced that the "bottom of the economic recession" has been hit.

It must be said that only tentative growth may be realized for now, starting at a low level. This is particularly true of the core business of the companies. The AVK identifies "3 primary strategic challenges facing the composites industry".

## Image and popularity of materials in question

Application industries are still largely unaware of the benefits offered by these materials. Compared to "conventional" materials such as steel, this sector of industry is still relatively young, and pertinent marketing efforts may be enhanced. Little light is thrown on this matter even during formal (engineering) education; besides, final consumers and customers ought to be informed about the pertinent areas of application as well as products containing component parts made of composites.

## Innovations

Apart from being able to replace other materials, composites also have an enormous unexhausted potential for new products and new applications in existing as well as new markets. Continuous observation of trends as well as future markets should be enhanced, along with systematic innovation management at the respective companies.

## Sustainability

In terms of "holistic" sustainability, composites often/usually have certain advantages over competitive products, as far as the entire product life cycle is concerned. Comparing ecological, economical, and social factors, composites have a definite "cutting edge", and despite current difficulties there can be considerable growth opportunities for this branch of industry during the next few years.

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