INDUSTRIEVEREINIGUNG
VERSTÄRKTE KUNSTSTOFFE
FEDERATION OF REINFORCED PLASTICS

PRESS RELEASE

November 2020 – No. 06/20

The European GRP Market in 2020

The AVK – Industrievereinigung Verstärkte Kunststoffe – has published its annual market report for glass fibre reinforced plastics (GRP). In 2020, the European GRP market is now experiencing the sharpest slump since the economic and financial crisis of 2008/2009 due to the corona pandemic. Production volume has fallen by 12.7% to 996,000 tonnes. The greatest losses are in the transport sector. Germany remains the largest manufacturer of GRP with 207,000 tonnes.

This press release is a summary of the full market report which can be downloaded free at www.avk-tv.de

Markets considered in this report

As in previous years, the European GRP Market Report 2020 analyses those European countries for which production figures can be recorded and validated. The GRP materials considered here include all glass fibre reinforced plastics with a thermoset matrix and, in the thermoplastics market, glass mat reinforced thermoplastics (GMT) and long fibre reinforced thermoplastics (LFT). Data on European production of short fibre reinforced thermoplastics are only available as an overall quantity and therefore stated separately.

GRP production in 2019 – General trend

In the current year, European GRP production volume is expected to fall by 12.7 %. As a result, the total volume of the European GRP market is 996,000 tonnes (see Fig. 1). The market is thus experiencing its sharpest decline since the crisis of 2008/2009.

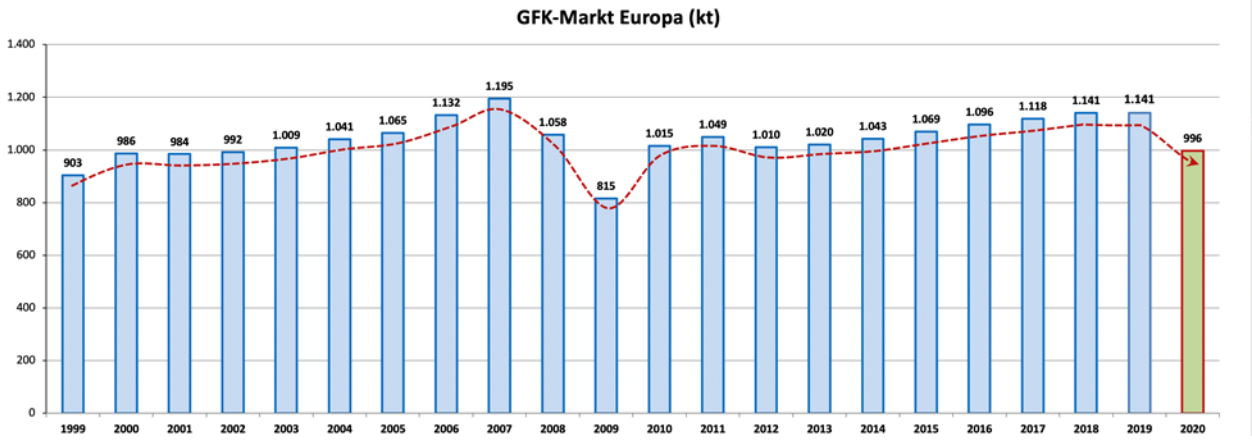

Fig. 1: GRP production volume in Europe since 1999 (in 000 tonnes) (2020* = estimate)

For 2019, a worldwide production volume of 10-12 million tonnes can be assumed for the composites industry, depending on the data source. Current data for 2020, that take account of the Covid-19 pandemic, are not yet available to the AVK. Even in recent years, growth in GRP production volume has been slower in Europe than in the world's other two major economic powerhouses – America and Asia.

The reasons for this slower growth, which has been ongoing for several years and is independent of the current pandemic, include the migration of certain manufacturing processes and methods, but also the outsourcing of the production of commodities with often low profit margins.

The two main application areas for GRP remain the construction/infrastructure and transport sectors (see Fig. 2). These two sectors are still the major buyers of GRP components, each accounting for around one third of the total production volume.

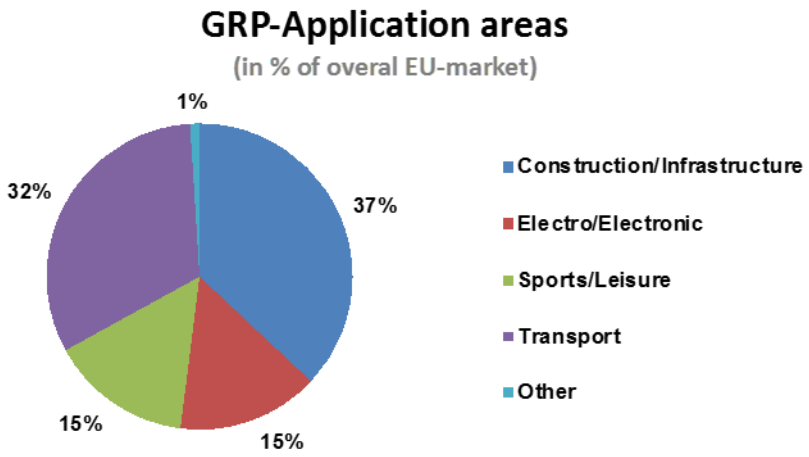

Fig. 2: GRP market by application areas in 2020 (as % of the total European market)

The market shift from the transport to the construction/infrastructure sector that began in 2019 has continued in 2020. The automotive industry, as one of the most important segments for GRP components, often reacts to crises much more quickly than the construction industry. At the beginning of the pandemic, this sector suffered rapid and very serious declines. In contrast, macroeconomic changes tend to affect the construction sector more slowly or for a longer period. This is also reflected in the market trends for the GRP industry.

GRP production in 2020 by country

The market trends within the European countries reviewed in this report vary enormously. While the overall market fell by 12.7 % year-on-year to 996,000 tonnes, growth rates in the countries considered ranged from -8 % to -17.4 %. Table 1 shows the trends for each country/region in detail.

	2016 (kt)	2017 (kt)	2018 (kt)	2019 (kt)	2020 (kt)
UK / Ireland	152	153	155	155	128
Belgium / Netherlands / Luxembourg	45	46	46	45	40
Finland / Norway / Sweden / Denmark	40	40	40	39	34
Spain / Portugal	158	161	167	166	141
Italy	154	158	162	161	135
France	110	112	115	114	96
Germany	220	226	229	225	207
Austria / Switzerland	18	19	19	19	17
Eastern Europe*	199	203	208	217	198
Sum	1096	1118	1141	1141	996

Table 1: GRP production volumes in Europe itemised by country/group of countries (kt = kilotonnes / 2020 = estimated / Eastern Europe* = Poland, Czech Republic, Hungary, Romania, Serbia, Croatia, Macedonia, Latvia, Lithuania, Slovakia and Slovenia)

None of the countries considered here recorded growth in 2020. The trend appears particularly dramatic in the UK/Ireland, where the market slumped by 17.4 %, and in Spain/Portugal where production declined by 16.1 %. As was the case during the economic and financial crisis, German industry currently appears far more able to cope with the difficult situation. With a decline of “only” 8.0 %, the situation in Germany is much more positive than the average. Eastern European countries are also standing their ground with similar “success” – declining by just 8.8%.

The figures presented illustrate the different orientations within the respective countries and regions. For this reason, a pan-European view can only ever provide a rough indication of developments or point to fundamental trends. The details of these developments often vary considerably depending on the specific core markets and primary applications within the countries. For example, façade elements and front doors are important applications in some southern European countries, whereas in Germany they hardly play any role at all. In Turkey, pipe and tank systems have dominated the market in terms of volume for many years, with a share of almost 50 %. In contrast, they play a fairly minor role in Germany, where automotive

applications and the electro/electronics industry are more dominant. In Norway and Sweden, however, the most important applications are found in the oil and gas industry.

Trends in the development of processes/components

Table 2 shows the trends in the production volume of essential processes/parts for GRP production over recent years. The names of the individual segments are not always entirely strict or selective, but this report will continue to use them to enable readers to compare the values as effectively as possible. However, in addition to these processes, there are many other production processes/technologies which can essentially be classified under one of the areas mentioned.

	2016	**2017**	**2018**	**2019**	**2020**
SMC (kt)	198	202	204	205	174
BMC (kt)	76	78	81	82	70
SMC/BMC (kt)	**274**	**280**	**285**	**287**	**244**
Hand lay-up (kt)	140	140	140	139	121
Spray-up (kt)	97	98	99	98	88
Open mould (kt)	**237**	**238**	**239**	**237**	**209**
RTM (kt)	**141**	**146**	**148**	**148**	**131**
Sheets (kt)	89	93	96	94	85
Pultrusion (kt)	50	53	55	56	50
Continuous processing (kt)	**139**	**146**	**151**	**150**	**135**
Filament winding (kt)	80	78	79	78	70
Centrifugal casting (kt)	68	67	69	68	60
Pipes and Tanks (kt)	**148**	**145**	**148**	**146**	**130**
GMT/LFT (kt)	**140**	**145**	**152**	**156**	**132**
Others (kt)	**17**	**18**	**18**	**17**	**15**
Total Market (kt)	**1.096**	**1.118**	**1.141**	**1.141**	**996**

Table 2: GRP production volumes in Europe according to processes/components – current year and the four previous years (kt = 000 tonnes, 2020 = estimate)

SMC/BMC

SMC (sheet moulding compound) and BMC (bulk moulding compound) components account for around one quarter of total production and are the largest market segment of the GRP industry. The semi-finished products/moulding materials are processed using compression moulding or injection moulding. Both materials have been well-established in the electro/electronics and transport sectors for many years. Typical applications include headlight systems, lamp housings, control cabinets and cases as well as exterior components for use in commercial vehicles, automobiles and vehicles for local public transport networks.

This year the SMC/BMC sector will shrink by 15 %, to a volume of 244,000 tonnes. Alongside thermoplastic systems, this market segment is thus the most severely and disproportionately affected by the current crisis.

Open processes

With a total production volume of 209,000 tonnes, “open processes” – hand lay-up and spray-up – continue to be the second largest segment in the European GRP market after SMC/BMC. For 2020, a minus of 11.8 % can be considered slightly less negative than the trend for the market as a whole.

RTM

In this report, the RTM (resin transfer moulding) segment comprises all processes in which resin is infused/injected into a closed cavity. These include a variety of injection methods (HP-RTM, P-RTM, RTM-Light, etc.) as well as infusion processes.

After a phase of continuous outperformance and increasing market shares, the RTM segment has now been stagnating for four years with a market share of around 13 %. The trend’s momentum is thus weakening to some extent. This year, the market segment declined by 11.5 % to a production volume of 131,000 tonnes.

The technology is used in a very broad spectrum of production processes and encompasses a wide range of process variants. Volumes can range from just a few units to larger series. It can be used to manufacture both small components and larger products. In addition, it is suitable for use with many different fibre and matrix systems. Typically, it also uses corresponding preforms.

As a result, it is used in a wide range of applications – from vehicle construction to wind turbines, boat and ship building, sports and leisure, and aerospace.

Continuous processes

The production of GRP components using continuous processes (pultrusion and flat panel production) has fallen by 10 % in 2020. Despite this huge decline, continuous processes are the least affected by the crisis. The overall production level for pultrusion is down by 10.7 % and for flat panels by 9.6 %. Total production volume for 2020 is expected to be approx. 135,000 tonnes.

At 85,000 tonnes, flat panel production is a much larger market segment than pultrusion, which has a production volume of 50,000 tonnes.

Panels have been used in vehicles for many years, primarily in truck side panels, caravan superstructures or the conversion of commercial vehicles. These applications are supplemented by products used in facades. Like pool construction, the caravan industry is also profiting from the unusual current market environment to a certain extent. It appears that exports to the USA are the principal reason that this segment is faring better than others.

Pultrusion is used to produce continuous profiles. Like SMC/BMC technologies and thermoplastic processes, pultrusion is often considered to have a very promising future due to the process specifications.

Pipes and tanks

The market segment of GRP pipes and tanks manufactured using centrifugal casting or filament winding processes has also declined significantly by 11 % this year. Total production volume for this segment will be 130,000 tonnes in 2020 – comprising 70,000 tonnes for the filament winding processes and 60,000 tonnes for the centrifugal casting processes. At -10.3 %, the filament winding processes are suffering a slightly less negative growth than the centrifugal winding processes with -11.8 %.

GRP pipes and tanks are principally used in plant construction and public/private pipelines as well as by customers in the oil/gas and chemicals industries.

GMT/LFT

The markets for GMT and LFT are experiencing a greater than average decline of 15.4 % this year. The market segment volume has fallen to 132,000 tonnes. For the first time in many years, its share of the total market has declined to 13.3 %

LFTs are the largest category of thermoplastic materials. For several years, however, continuous fibre-reinforced systems have become the focus of attention. Projects in the automotive industry, as well as applications in the electronics and sports sector, are generally the growth drivers for thermoplastic materials. Typical current applications for these products include underbody protection, bumpers, instrument panels or seat structures.

Other composite materials

Short glass fibre reinforced thermoplastics

The European market for thermoplastic, short glass fibre reinforced materials is declining for the second consecutive year. While production in 2018 still totalled 1.544 million tonnes, this fell by approx. 10 % to 1.39 million tonnes in 2019. This year, the decline of 15 % is even more pronounced than in the rest of the

GRP market considered in this report. A production volume of 1.19 million tonnes is expected in 2020. *(Source: AMAC)*

Applications are primarily found in the automotive sector, but also in the electro/electronics sector and consumer goods.

Natural fibre reinforced plastics

In addition to GRP and CRP – the two key groups already mentioned – natural fibre reinforced plastics (NRP) form the third most important group of materials in terms of production volume.

According to an AVK survey within this special composites segment, thermoplastics are the most important materials used in this market, although thermosetting materials are also used. Unfortunately, no current figures regarding the precise volumes being processed are available. However, it can be assumed that the market for these materials in Europe is at least 90,000 tonnes. The last survey of production volumes, for 2012, recorded a volume of 92,000 tonnes of NRP (S*ource: nova-Institut GmbH*).

The largest application area for these materials is the automotive sector, followed by the consumer goods industry. The fibres used are mainly flax, hemp, jute and kenaf. The dominant manufacturing processes are moulding/compression moulding. Injection and extrusion process are also used. The principal processors are Germany, France and several Eastern European countries (Poland, the Czech Republic and Slovenia).

Natural fibre reinforced plastics are mostly used because of their special material properties (low weight, low cost, sound insulation, good mechanical properties). But they can also help to reduce the environmental impact of a product. This area appears to be particularly rich in future market development opportunities.

Outlook

Last year, general uncertainties regarding the economic situation and political sphere were the major factors that unsettled industry as a whole and the market players in the composites market in particular. Despite its relatively modest size, the composites market is characterised by close international links. Brexit and trade disputes between the USA and China are further factors causing uncertainty in the market.

From January 2020, the novel coronavirus began to spread from Asia to Europe and the rest of the world. On 11 March 2020, the WHO classified the spread of the disease as a pandemic. The lockdown in Europe and Germany followed with serious restrictions for the population, industry and the economy in general. Its effects have been the most severe since the economic and financial crisis in 2008/2009.

The corona pandemic can certainly be seen as the decisive event that has triggered the current economic slump. Nevertheless, as described above, it should not be forgotten it hit an already uncertain economic environment and intensified its effects.

The most important areas of the economy for the composites industry are the transport sector, with the core areas of automotive, public transport, commercial vehicles and aviation, as well as the construction and infrastructure sectors. These two main areas together account for almost 70 % of the applications. In addition to other sectors, such as hotel/tourist accommodation, which is one of the most severely affected by the corona pandemic, the transport sector is also particularly affected.

The aviation industry – a key application area and one of the brightest prospects for the future until a few months ago – has been particularly hard hit by the pandemic. Experts consider it unlikely that the airline sector will return to its previous level, at least in the medium term. Experts consider it unlikely that the airline sector will return to its pre-corona level, at least in the medium term. In addition to the general decline in travel activity and strict travel restrictions, another phenomenon is emerging in the industry: home office and online meetings have increased considerably during and

after the lockdown. In many cases, companies have invested in the necessary infrastructure and are using it.

The automotive industry is another of the sectors that has been particularly hard hit, especially at the beginning of the pandemic. In the meantime, however, despite all the uncertainty regarding further developments, the mood has become more optimistic again. Many experts see a significant recovery taking place during the current year, or at the latest in the coming year. The basic prerequisite for this is, of course, that the situation does not deteriorate further and that markets pick up, especially in China and the USA.

However, it will probably be important for the automotive industry to respond decisively to the transition to more environmentally friendly modes of transport that was already emerging before the corona crisis began. This holds enormous opportunities for composites because it will involve a reconsideration of established construction principles. Familiar design concepts may be forced to give way to new, lightweight materials, load-bearing constructions or completely new aesthetics. Composites can be the ideal solution to all these needs.

The largest application area for composites is currently the construction and infrastructure sector. This sector has been far less affected by the crisis than the transport sector and seems to be able to recover more quickly.

The future development of the composites industry will initially be determined by the overall economic trend over the coming months and years. Beyond that, however, it will also be important to take advantage of opportunities that arise and actively present alternatives to established materials.

Press enquiries: Birgit Förster, Tel. +49 69 271077-13, birgit.foerster@avk-tv.de

About AVK

AVK, the German Federation of Reinforced Plastics, is the professional German association for fibre-reinforced plastics and composites. It represents the interests of manufacturers and processors both in Germany and at the European level.

Its range of services includes specialised workgroups, seminars and conferences as well as the provision of market-specific information (www.avk-tv.de).

In Germany, AVK is one of four support organisations of GKV, the General Association of the Plastics Processing Industry. Within Europe, it is a member of the European umbrella association for composites, EuCIA (European Composites Industry Association).

AVK is a founding member of Composites Germany.