

menzolit®

Composite Lightweight Solutions



Your first choice in compounds

Leichtbaulösungen in

Faserverbundwerkstoffen

Lightweight composites for numerous tasks

Based on remarkable benefits composites are used in an increasing number of applications. The technical and economical advantages of composites result in replacing common materials in well known industries such as Automotive, Truck, Engineering, Electro, Sanitary, Building or Sports and Leisure.

Menzolit composites are custom made. According to our customer's needs, our engineers and technicians are developing individual solutions using customized polymers, functional lightweight fillers and fibres for reinforcement. The highest quality standards are implemented for the manufacturing of Menzolit SMC and BMC; this is the key for our customer's success.

Actual applications from serial production



Bodyshell made from low emission lightweight composite Menzolit SMC 0430

Mercedes-Benz relies upon Menzolit SMC composites for the trunk lid applications in their new SL and CL classes. In comparison to steel, the weight reduction is at least 30 % and although aluminium is comparable in weight, the lower costs and freedom in design gives further arguments for the use of SMC. Menzolit SMC 0430 grade is a lightweight composite with an excellent surface finish. Its high heat resistance combined with an outstanding dimensional stability guarantee excellent results after coating, even with stoving temperatures of more than 200°C. C-emission, fogging and smell is reduced to a minimum, a crucial factor that is most important to interior applications. In addition to its low density compared to steel, Menzolit SMC 0430 is completely corrosion free. A major attribute of SMC 0430 is its transparency for electromagnetic waves, thus allowing the ease of integration of antennas for radio, mobiles and navigation systems. The



Pic. 1 Trunk lid Mercedes CL

benefits and ease with the integration which Menzolit SMC 0430 provides, optimizes design and creates subsequent savings in assembly. The grade exhibits good moulding attributes which results in surface defect free body parts when moulded under constant moulding parameters and practices. After application of a conductive primer, electrostatic coating is possible both online as well as offline.

Menzolit® Light weight composites

Property	Standard	Value	Menzolit® SMC 0430	Menzolit® SMC 0500	Menzolit® SMC 0520	Menzolit® CarbonSMC 1100	Menzolit® BMC 3150
Density	ISO 1183	g/cm ³	1,45	1,2 - 1,4	0,9 - 1,0	1,40	1,35
Shrinkage	ISO 2577	%	-0,05	0,05	0,0	-0,07	-0,01
Flexural Strength	ISO 14125	MPa	140	130 - 150	50	324	65
Tensile Strength	ISO 527-4	MPa	60	55 - 65	13	138	25
Young's modulus	ISO 527-4	GPa	8	7	3	32	9
Impact Strength	ISO 179	KJ/m ²	65	60 - 70	18	57	15
HDT	EN ISO 75-2	°C	> 200	> 200	> 200	> 200	> 200
Continuous service temp. 20.000 h	IEC 60216	°C	150	150	150	155	155
CTE	ISO 11359	10 ⁶ m/mK	8	10	14	8	10

Low weight - High performance

Low weight – High efficiency

Low weight – High dynamics

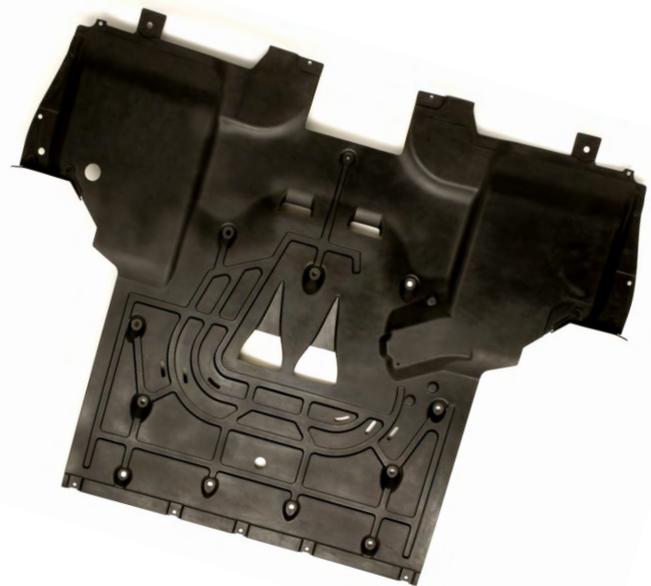
Low weight – High sustainability



Underbody protection shield made from impact resistant lightweight composite Menzolit SMC 0500

IMR Automotive is using Menzolit SMC 0500 grade to protect the engine of premium sports cars from dirt and other particles as well as to improve aerodynamics and ventilation. This lightweight composite is available in all standard colours and has been developed for all non coated applications around the engine. Excellent temperature and dimensional stability are combined with high impact strength and resistance against automotive fluids. Menzolit SMC 0500 was specifically designed to compression mould three-dimensional parts with a variety of wall thickness, openings and fixings in one shot.

Pic. 2 Aerodynamic Protection shield IMR



Further applications for Menzolit® lightweight solutions:

Automotive



Reflectors, spoilers, fenders, bonnets, spare wheel rests, hardtops, roof modules, sun roof frames and even more

Mass transportation



Interior panels, body panels, motor encapsulation, etc.

Engineering and agricultural machinery

Hatches, panels, roofs,...

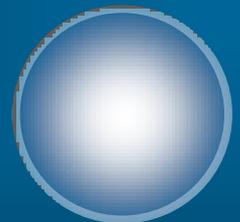
Renewable energy



Carrier and fixing systems for adjustable collectors, mirrors and housings

Advantages of Menzolit® SMC/BMC

- Cost-efficient
- Design freedom
- Heat resistant
- Dimension stable
- Paintable
- Corrosion free
- Low thermal expansion
- Electromagnetic radiation permeable



For injection moulding:

Menzolit® BMC 3150 with reduced density

This low density BMC combines outstanding dimensional stability, low thermal expansion, low tolerances and no creep at a low price. Possible applications are reflectors and other parts of headlamps as well as a variety of parts "under the hood" where thermal resistance and very small tolerances are needed.



Materials for BodysHELLs

Product	Steel	Aluminium	SMC 0430	C-SMC1100	PA / PPE (GF)	SMC 0520
Processing	Metal forming	Metal forming	Compression moulding	Compression moulding	Injection moulding	Compression moulding
Density (g/cm ³)	7,8	2,7	1,4	1,4	1,3	1,0
Wall thickness (mm)	0,8	1,1	2,5	2,0	2,5	2,5
Weight p. part (kg)	3,7	1,8	2,0	1,2	1,8	1,5
Weight index	100	50	55	32	50	40

Information in this brochure is to the best of our knowledge true and accurate.

Menzolit SMC and BMC is developed in collaboration with our customers. Properties shown are mean value of test results made with non pigmented, compression moulded specimens and are typical for a material group. However, since conditions under which our products may be used are beyond our control, recommendations are made without warranty or guarantee.

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Technical Support

The success of our composites is based on the possibility to customise our products. Please ask for possible changes.

We look back on a long lasting and varied experience.

Do not hesitate to contact our Technical Service.

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