

WIC - CARBON FIBER COMPOUNDS

Lighter, stronger, sustainable.



WIC products are carbon fiber based high-performance plastics with a very attractive cost-benefit ratio.

WIC compounds, made from recycled carbon fiber sheets, have excellent mechanical properties whilst also being low density, and therefore, low weight. This particular strength means the material is ideal for lightweight applications. It can help, for example, to produce lighter-weight cars with lower CO₂ emissions, and lighter equipment and devices in more convenient shapes. Another interesting characteristic of WIC products is that they are very good at conducting electricity. This means that electrostatic charges can be avoided and it can be used, for example, in explosion prevention applications.

PA66, PA6 and PP based WIC compounds are now classed as standard products. Application specific solutions with other polymer bases or filler blends can be developed.

In addition to their special properties and lightweight potential, WIC products provide interesting cost savings in comparison to high-fill fiberglass compounds when the volume/piece price is taken in account.

- Cars – front-end carrier, engine cover, engine mount, fuel filter mount, crossbar, GOR, cowl, mirror mount, gas cap hinge arm, tailgate, glove compartment, airflow fin, central console support, seat components, door components, shelf support
- E&E – industrial vacuum cleaners, lamp housings, fan propellers, power tools, ATEX filters, wheels and transport boxes, EMI/ ESD components
- Sport & leisure – surfboard fins, paddles, kiteboard foils, air pumps, drink bottle holders, bike shoes, scooters, drones, ski boots, snowboard/ski bindings
- Medical technology – orthotics, prosthetics, walking frames
- Industrial – wind turbine blades, device cases, guide rails, antistatic transport containers, holders, grabs, mounting systems, filter housings

WIC – carbon fiber compounds: advantages at a glance

- Low density => lightweight construction
- High fixity/ rigidity (potential metal substitute)
- Good electrical conductivity
- Good resistance to wear and tear
- High dimensional stability
- Design freedom

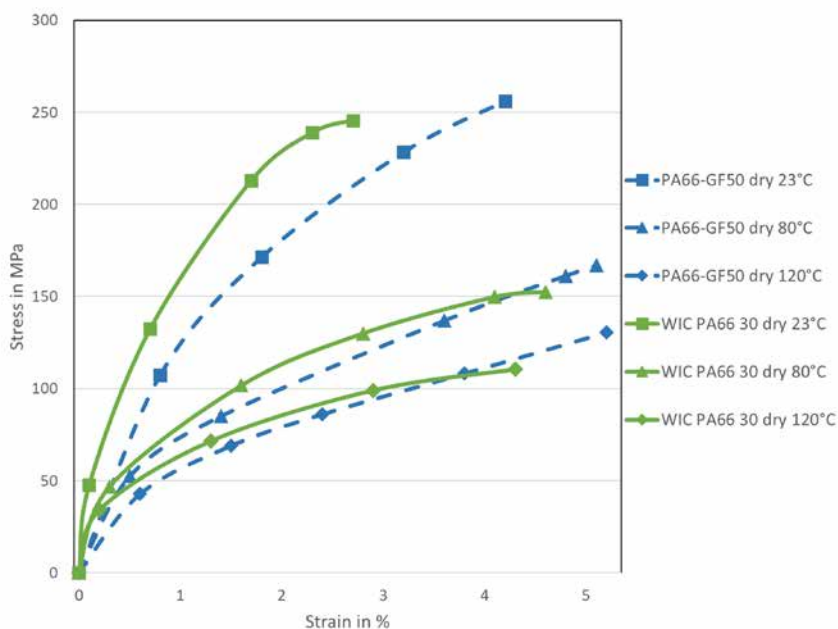
Product name	Carbon fiber content [%]	Product variants*	Density [g/cm ³] ISO 1183	Tension E-modulus [MPa] ISO 52731/32	Tensile strength [MPa] ISO 527-1/-2	Impact strength 23°C [kJ/m ²] ISO 179/1eU	Notched bar impact strength 23°C [kJ/m ²] ISO 179/1eA
WIC PA6 10**	10	N / BK / BKD / IM / LE	1.17	9,000	140	45	4
WIC PA6 20**	20	N / BK / BKD / IM / LE	1.23	14,000	170	55	7
WIC PA6 30**	30	N / BK / BKD / IM / LE	1.27	21,000	200	60	8
WIC PA6 40**	40	N / BK / BKD / IM / LE	1.33	27,000	210	60	9
WIC PA66 10**	10	N / BK / BKD / IM / LE	1.17	10,000	150	25	5
WIC PA66 20**	20	N / BK / BKD / IM / LE	1.23	16,500	200	50	7
WIC PA66 30**	30	N / BK / BKD / IM / LE	1.27	22,500	225	60	8
WIC PA66 40**	40	N / BK / BKD / IM / LE	1.33	29,000	250	60	0
WIC PP10	10	N / BK / BKD / IM / LE	0.95	6,000	60	30	6
WIC PP20	20	N / BK / BKD / IM / LE	1.02	9,000	80	48	9
WIC PP30	30	N / BK / BKD / IM / LE	1.05	12,000	87	50	10
WIC PP40	40	N / BK / BKD / IM / LE	1.11	15,500	92	45	10

Additional products and information are available on request.

* Notes: N = natural / BK = black / BKD = deep black / IM = impact modified / LE = low emission

** PA measurements are taken when freshly molded

Stress-strain curve PA66-GF50 vs. WIC PA66 30



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