



PROGRAFEN
GRAPHENE STRONG

Based on the knowledge and experience of AGP's research team and its previous experience with the production of filaments, AGP has decided to implement a new filament: PROGRAFEN Graphene STRONG, with increased graphene content. The filament will be available in PLA and PET-G variants. Tests have been carried out to determine the optimal concentration of graphene in the material. The addition of graphene allows for faster printing and increased mechanical strength, while maintaining ease of processing of PLA and PET-G materials.

Advantages of Prografen Graphene Strong filament

- **Dimensional stability**

Adding graphene into the polymer matrix improves the dimensional stability of the printout by reducing shrinkage. It makes the printout retain the desired shape.

- **High-speed printing - saving time and energy**

The addition of graphene significantly increases the melt flow rate of polymers, which means that graphene-filled filament can be printed faster than standard polymers. If you do not need faster printing, you can lower the extrusion temperature (relative to the same material without graphene), thus saving energy.

- **Low nozzle consumption**

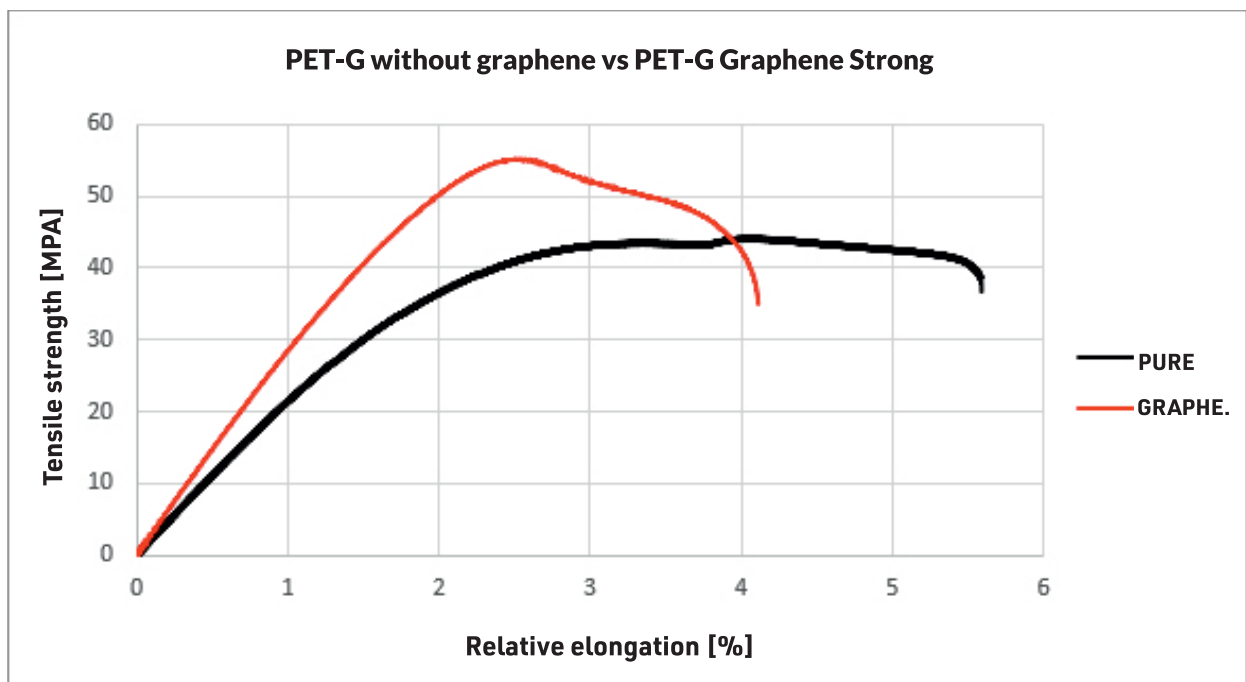
The ability to extrude using standard nozzles without the risk of excessive wear in contrast to carbon fiber materials.

MFR - Melt Flow rate [g/10min] at 230C	PLA Graphene STRONG	PET-G Graphene STRONG	PLA without graphene	PET-G without graphene
	43,0	27,0	20,5	10,0

- **High mechanical strength**

The addition of graphene results in a 25% higher tensile strength of the material and a 20% increase in stiffness compared to pure PET-G.

	PETG without graphene	PET-G Graphene Strong
Tensile strength [MPa]	44,07	55,17
Tensile modulus	1,17	1,40



FOR WHOM IS FILAMENT PROGRAFEN STRONG



IF YOU ARE LOOKING FOR A FILAMENT FOR PRINTING PARTS THAT WILL BE EXPOSED TO ENVIRONMENTAL CONDITIONS.



IF YOU CARE ABOUT TIME, SPEED AND QUALITY OF PRINTING.



IF YOU CARE ABOUT MECHANICAL PROPERTIES.



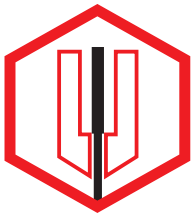
IF YOU CARE ABOUT THE LOOK OF THE PRINT AND HOW IT PRESENTS.



IF YOUR PRINT WILL CONTAIN MOVING PARTS.



IF YOU WOULD LIKE TO BUY A FILAMENT WITH GOOD PROPERTIES, BUT DO NOT HAVE SUFFICIENTLY LARGE FUNDS.



IF YOU WANT TO EASILY PRINT MATERIAL WITH STANDARD NOZZLE.



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Advanced Graphene Products S.A.

Nowy Kisielin – A. Wysockiego 4
66-002 Zielona Góra, Poland

+48 68 328 20 12
orders@prografen.com



Instagram: @prografen

Facebook: @Prografen



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