

PRESS INFORMATION

Grilon BGZ FC – fast flowing, high impact strength polyamide 6 for ambitious thin-walled applications

For thin-walled power tools this plastic material scores points with both its toughness and with economic aspects such as the shorter cycle time. But the new range of high impact strength Grilon FC products can score points in other areas as well.

EMS-GRIVORY presents a range of new high impact strength Grilon products with improved flowability at the FAKUMA 2009. The grades with the additional designation "FC" follow the market trend in injection moulding towards fast-flowing polyamide 6 with a reduced cycle time.

The Grilon FC line stands out due to its exceptionally high flowability with unchanged toughness and a clearly lower tendency to warp. These properties have proved their value in thin-walled housings e.g. for electric hand-held power tools such as drills and grinders or milling machines. In daily use, these have to really take some knocks! The fast-flowing Grilon FC grades easily fill moulds for housing components with unfavourable wall-thickness/flow distance ratios. The unreinforced Grilon BZ 1/2 FC grade is particularly suited for applications such as dowels or clips.

Due to the improved flowability, cycle times are greatly reduced. Compared to the normal-viscosity Grilon BGZ grades, the new fast flowing Grilon FC grades provide a reduction in cycle time of more than 15 %.

Using conventional fast-cycling moulds, mould deposit is often a problem. Thanks to the excellent flow properties and wide processing window of the Grilon FC grades, this mould deposit can be significantly reduced.

Product	PA	Properties
Grilon BZ 1/2 FC	PA 6	Impact modified, fast-flowing, non-reinforced
Grilon BGZ-15 FC	PA 6 GF 15	Impact modified, fast-flowing
Grilon BGZ-30 FC	PA 6 GF 30	Impact modified, fast-flowing
Grilon BGZ-35 FC	PA 6 GF 35	Impact modified, fast-flowing
Grilon BGZ-40 FC	PA 6 GF 40	Impact modified, fast-flowing

Table: Grilon FC grades

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Picture: Properties BGZ FC.jpg

Grilon BGZ-40 vs. BGZ-40 FC: Main Properties

Property	Norm	Unit		Grilon BGZ-40	Grilon BGZ-40 FC
Density	ISO 1183	g/cm ³		1.43	1.43
Tensile E-Modulus	ISO 527	MPa	dry	11 200	11 000
			cond.	7 600	7 500
Tensile Strength @ Break	ISO 527	MPa	dry	175	170
			cond.	115	115
Elongation @ Break	ISO 527	%	dry	3.5	3.5
			cond.	8	8
Impact Strength (+23°C)	ISO 179 /1eU	kJ/m ²	dry	100	100
			cond.	>100	>100
Impact Strength (-30°C)	ISO 179 /1eU	kJ/m ²	dry	85	85
			cond.	80	80
Notched Impact St. (+23°C)	ISO 179 /1eA	kJ/m ²	dry	25	25
			cond.	35	35
Notched Impact St. (-30°C)	ISO 179 /1eA	kJ/m ²	dry	19	19
			cond.	15	15
Heat Deflection Temperature	ISO 75	°C	HDT/A	205	208
Heat Deflection Temperature	ISO 75	°C	HDT/C	120	125

The mechanical properties of Grilon BGZ-40 FC are on the same high levels as standard grades.

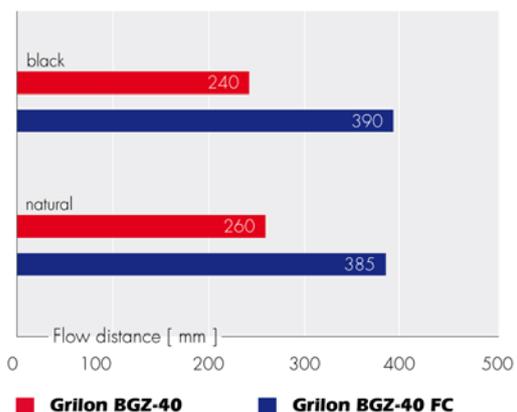
Picture: Power_tool_drill.jpg



Clearly higher stiffness with the same filling capacity compared to a PA 6 GF 30.

Picture: Diagram_Flowbehaviour.jpg

Flow behaviour



Significant increase in flowability with shorter cycle times.

