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Ideas for better solutions.

MATERIAL

In our production, we use a material composition of **polyamide 6** with **30% glass beads** (PA6 GB30) and **polyamide 6** with **15% glass beads** (PA6 GB15). This mixture of polyamide and glass beads creates a material with **improved mechanical characteristics** compared to conventional PA6. The addition of glass beads gives the material greater **strength**, **rigidity,** and **heat resistance**. Therefore, PA6 GB30 is particularly **suitable** for applications where **high mechanical loads**, **dimensional stability,** and **temperature resistance** are required.

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Why do we use polyamide 6 with 30 or 15 % glass bead content?

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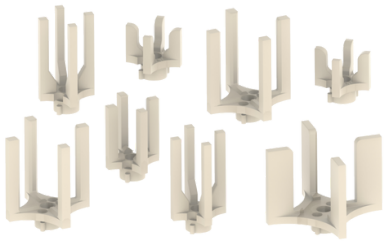
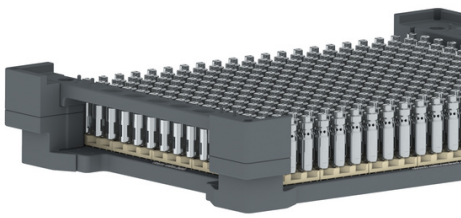
- Heat resistant
- Resistance to chemicals
- High mechanical strength
- Up to 35% lower weight compared to standard stainless steel carriers
- Improved dimensional stability (stability under changing environmental conditions)
- Recyclable

At ZELL Systemtechnik, we use different polyamide variants such as **PA6 GB30**, especially in the manufacture of clips and polymer carriers. The addition of 30% glass beads gives this polyamide good mechanical properties, such as **increased tensile, compressive strength,** and **flexural strength**. Due to the **hygroscopicity** of the material as well as its **rigidity**, clips and plastic carriers remain **stable**, which means that they do not break or fail even under pressure. PA6 GB30 is also characterized by efficient **heat dissipation** and **resistance** to base chemicals, which is very important for demanding manufacturing applications. The material retains its resistance even at **high temperatures**. And improved **resistance to wear** and **abrasion ensures** a **long product life**. Despite a certain susceptibility to acids and oxidizing chemicals, PA6 GB30 is ideal for industrial applications.

Hard Facts*

	Condition	Standard	Unit	Value
Density		ISO 1183	g/cm³	1.37
Molding shrinkage, parallel		ISO 294-4, 2577	%	1 - 1.2
Molding shrinkage, parallel		ISO 294-4, 2577	%	1.1 - 1.3
Tensile modulus	1 mm/min	ISO 527-1/-2	MPa	4200 / -
Stress at break	50 mm/min	ISO 527-1/-2	MPa	75 / -
Strain at break	50 mm/min	ISO 527-1/-2	%	14 / -
Charpy impact strength	+23°C	ISO 179/1eU	kJ/m²	45 / -
Charpy notched impact strength	+23°C	ISO 179/1eA	kJ/m²	3.5 / -
Short-term heat	≈ 10 min		°C	175
Long-term heat	Stunden		°C	135-145
Softening temperature			°C	220





The variety of production methods and their different processes require certain material characteristics. To find the best solution for your requirements, we recommend a free strategy meeting. If required, we can also provide you with technical data sheets from the material manufacturers to provide more detailed information.