

PROPERTIES

Mechanical and Physical Properties of Performance Plastics

This section will acquaint you with the technical terms and concepts used to describe the properties or performance of a material. These terms are used by suppliers and end users to communicate how a material behaves under specific conditions.

Metals behave like a spring and the force generated by the spring is proportional to its length. They are Linear. **Plastics DO NOT** behave like a spring. They are non-linear. Temperature changes the behavior even more. Because the materials are non-linear, some design equations used by engineers will need to be adjusted. You should seek guidance from the material manufacturer when assisting customers with specific designs.

Questions that may be appropriate to help with design.

- **HOW MUCH** load/force will the part carry?
- **HOW** will the part be loaded?
- **WHAT** is the direction and size of the forces on the part?