



durability

- **Designability**
- **Reliability**
- **Senseability**
- **Flexability**



Polystruct
BY DUROMER

Long Fibre Thermoplastics

If products were square, reinforcement would be easy!

However, in real life nothing is square and we are continually confronted with a multitude of shapes. Products that are unique to each industry will go through various stresses, strains and impact scenarios. Heat, sunlight and colour can also add complexity let alone the number of components that will need to interact synergistically.



Working with Long Fibre thermoplastics offers:

- Improved impact strength and physical properties.
- Improved dimensional stability.
- Improved high temperature stability.
- Ease of processing.
- Weight reduction.
- Thinner wall sections.
- Superior structural properties.

Giving rise to LFT being used in items traditionally made from SFT through to various metals.

Design

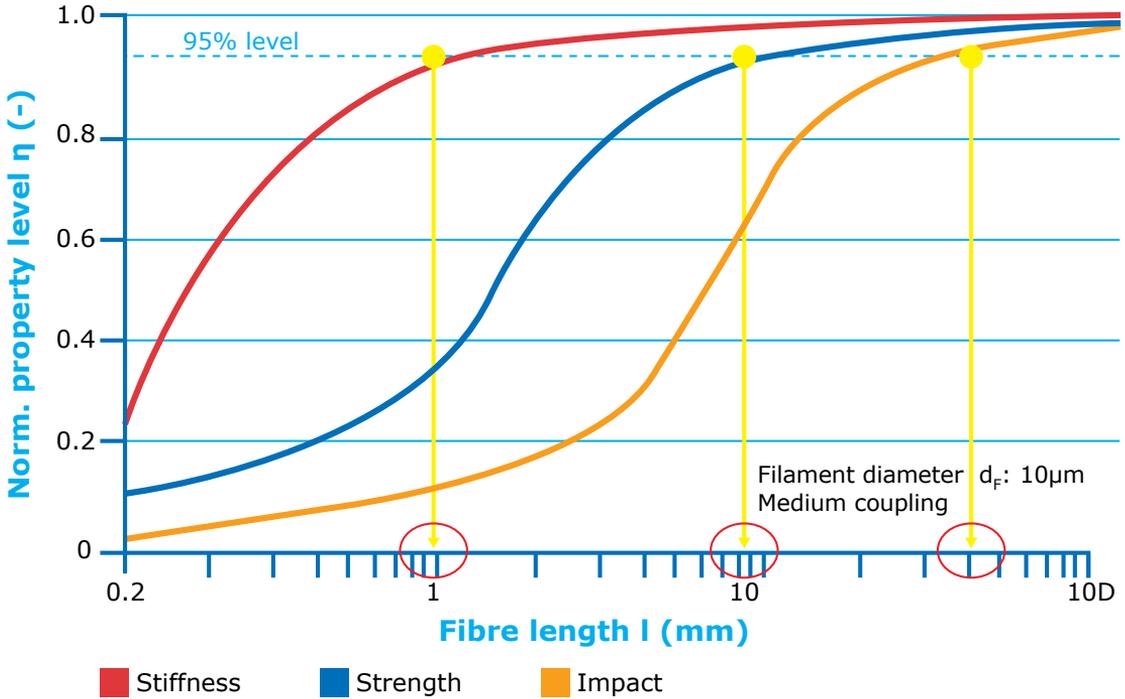
Being able to identify high stress locations in a part and using modelling to predict how the fibres will orientate has allowed the design of parts with thinner walls to enable functionality, reduce weight and to improve overall performance primarily through:

- Tailoring the fibre orientation in the direction of critical stresses.
- Tailoring fibre content to the strength and stiffness required.
- Tailoring melt flow in the mold to achieve desired fibre orientation and moving weld lines to areas of low stress.
- Employing low shear molding processes with generously sized runners and gates.
- And utilising FEA and MFA analysis to design and test in the initial stages before tool construction begins.

LFT vs SFT

Long fibres create a skeletal structure within the moulded article that resist distortion and provide unmatched strength, toughness and overall performance.

Influence of the fibre length with PP/GF (qualitative)



LFT vs Metal

Long fibre thermoplastics polymers are often at the top of the list of metal replacement options due to the performance abilities and cost structure.

A key element that makes the LFT polymers suitable to replace metal is the exceptional strength with low specific gravity.

SPECIFIC GRAVITY COMPARISON

Material	Aluminium	Magnesium	Steel	Iron	Nylon 6 40% LGF	Nylon 6 40% LCF	Polypropylene 40% LGF	Polypropylene 40% LCF
SG	2.6	1.74	7.8	7.8	1.45	1.31	1.21	1.11

Duomer Products is an Australian manufacturer and supplier of thermoplastic polymers and compounds to the plastics industry. Our expertise is the supply of locally manufactured customised thermoplastic solutions.

The Duomer difference is our ability to understand our customers' challenges in today's high tech market place. Through this understanding and our knowledge of plastics we are able to recommend either off the shelf products or where required formulate a customised compound solution.

We assist Injection Moulding and Extrusion companies to maximise profits by helping them to:

1. Access innovative technology.
2. Reduce inventories through fast turnarounds and short runs.
3. Improve part performance and aesthetics.
4. Reduce scrap production.
5. Maximise scrap re-use rates through repelletising.
6. Reduce time to market through a fast and efficient product development process.
7. Develop cost effective solutions to minimise cycle times.
8. Achieve all of the above with unmatched customer service.

Duomer is ISO 9001:2008 quality certified and maintains a UL registered site.

DUROMER PRODUCTS

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