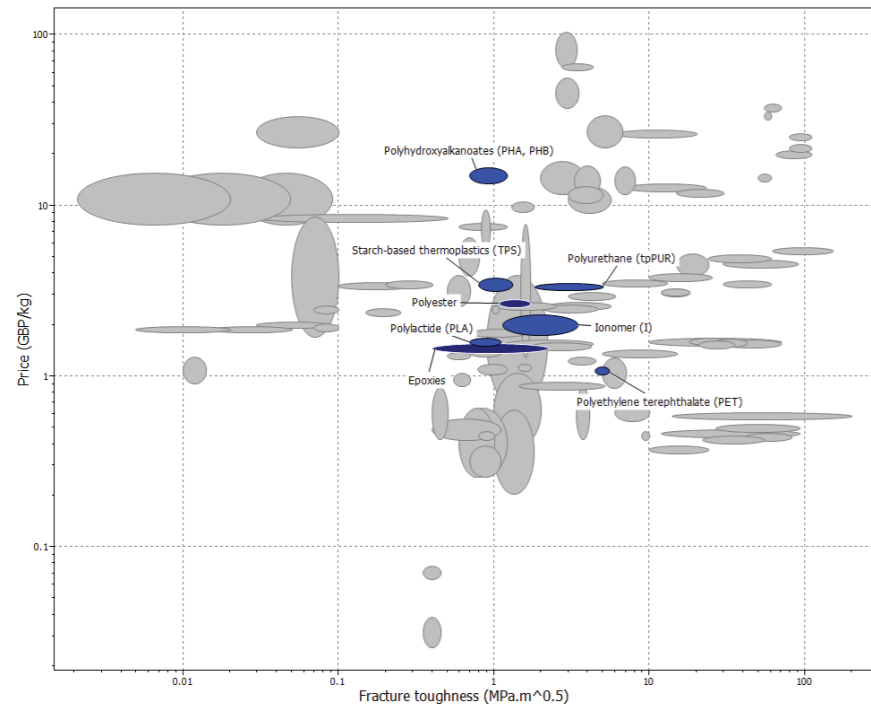


Materials and Manufacturing



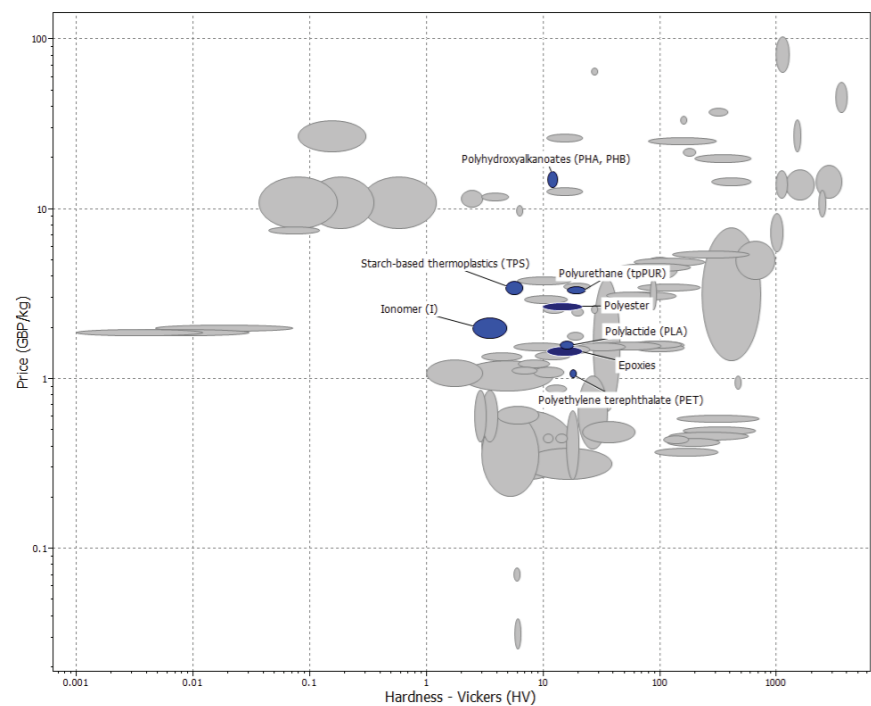
According to the specification, the product should be able to survive in a classroom environment.

The dangers we determined are therefore:

- Being **dropped/trodden** on etc.
- Being **scratched**
- Exposed to liquid
- **Electrical wiring errors** (too much V etc.)
- Being thrown at others

Added to this, the product has to be **light** so that the magnets can hold multiple blocks horizontally without support.

Below are drawings of how the product would be manufactured. It will be injection moulded and hand assembled, and the magnets will be clipped into place using the material's natural flexibility.



Material requirements are:

- **Hard**
- **Shatterproof/Tough**
- **Lightweight**
- **Inexpensive**
- **Water Resistant**
- **Transparent**

Using the Cambridge Engineering Selector, we compared material properties such as price, toughness, hardness and density (not shown here), and established that **PET** was the best choice. It is cheap, fracture resistant, hard and has a **low CO2 footprint**, making it ideal for this product.

