

For many years, companies in the public street furniture industry had suffered problems with cladding for structures such as cycle shelters, bus shelters, smoking shelters & telephone boxes. The problems varied from glass panels being smashed by vandals to various types of plastic panels yellowing and turning brittle. It seemed all the different transparent sheets the manufacturers used had at least one major flaw which deemed it unsuitable in the long term for this particular application.

Plastics Direct were approached by a number of companies with this problem and were asked to offer a solution in the form of a suitable material.

Plastics Direct knew the cause of the yellowing was due to continuous exposure to UV light and the brittleness and loss of mechanical properties was likely to be the result of chemical attack (in the form of graffiti removers / cleaners.)

The objective was to ideally offer a product which would be:

- Strong enough to resist breakage on impact. (vandal proof)
- Suitable for continuous exposure to UV light transmitted by the sun.
- Resistant to chemicals used in graffiti removal and cleaning agents.
- Resistant to attack by fire
- Suitable for salty maritime wind exposure.
- Rigid enough to remain flat.
- Low in contraction and expansion to avoid swelling or warping
- Able to operate normally in freezing temperatures.
- Environmentally friendly
- Fully recyclable.
- Able to have visible physical damage removed through restoration.

Extensive research was carried out which involved gathering data from the end user through to the granule producer which produces the raw ingredients plastics are made from. Many different types of plastic were tested for strength, UV resistance, chemical resistance, rigidity, optical properties and Fire resistance. This work was carried out using prototype constructed shelters which were glazed with different types of plastic and exposed to the elements with a structured intense vandalism programme.

Plastics Direct, through working together with its customers and suppliers sourced and developed a unique product which met **all** of the target objectives above and has now created a range of finishes, sheet sizes, colours and thicknesses for many similar applications.