



Maxi**GRATE**™

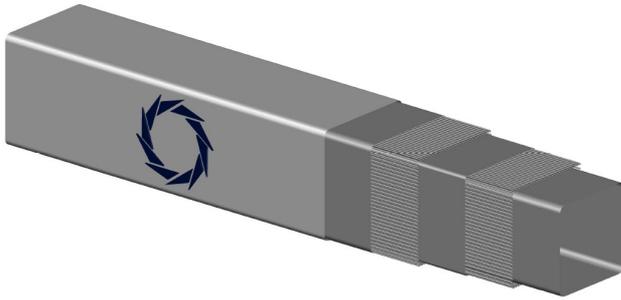
Maxi**RAIL**™

Maxi**STRUCT**®

Maxi**LADDER**™

# UV Exposure

## UV Exposure



When discussing the potential applications for Pultruded FRP profiles, one of the most common concerns raised is the material's ability to withstand UV Exposure. Much testing and development has been carried out over the years, and since the Pultrusion process was invented some 40 years ago, many major advancements have taken place. Composite Engineering Pultruded profiles contain a number of mechanisms to prevent any damage occurring from extended UV exposure.

The first line of defence is the external, thermally bonded coating (typically 250-350um thickness) to help reflect the harmful rays. Secondly, the actual profile features a resin-rich surface, under which lies the Polyester Surface Veil to protect the structural glass rovings in the core of the profile. And thirdly, specially formulated UV inhibitors are added to the resin matrix prior to production, helping absorb the UV radiation.



The square tube in the picture (left) has been under constant UV exposure since it was produced, some 30 years ago in the United States. Every year, the sample is load tested to determine if structural properties are diminished from continuous UV exposure. Since initial testing, the profile's colour pigments have almost completely faded, yet the tube has lost less than 1% of its strength (line load tested over 3' span).

Sample Identification	Tensile Strength at Break (GPa)	Modulus of Elasticity (GPa)	Strain at Break (%)
Control	0.52	39.2	1.49
Exposed	0.51	36.8	1.46

Due to their resistance to corrosion, decay and infestation, Composite Engineering pultruded profiles should last indefinitely, even in harsh environments.

The only significant maintenance that may be required is the re-application of a UV inhibiting paint coating after some 25-30 years of service.