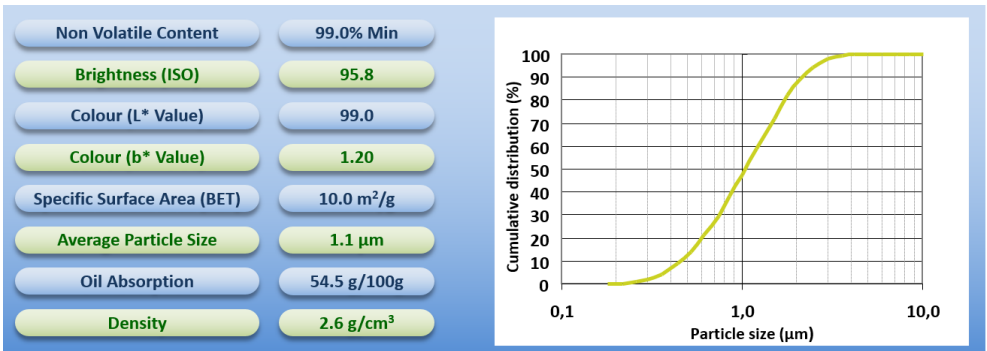


Cost Effective Performance in PVC Profiles, Pipes and Fittings

FP-440 Opacity Pigment™ is the first product of the next generation FP-Opacity Pigments™ - further enhancing our unique patented TiO₂ spacing technology.

Our improved process produces engineered particles of a remarkably uniform size containing additional entrapped air and further optimised spacing of TiO₂ maximising the scatter per unit TiO₂ employed.

FP-440 Opacity Pigment™ Product Characteristics

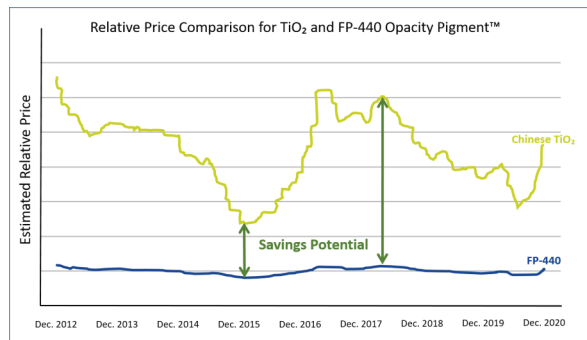


FP-440 Opacity Pigment™ is available in 25kg bags, 500kg big bags.

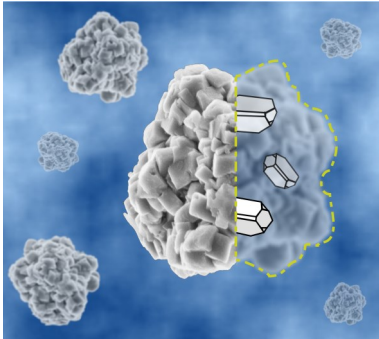
Designed for Performance and Savings

FP-440 Opacity Pigment™ has been shown to be a suitable, partial replacement for TiO₂ in PVC profiles and pipes, maintaining or improving brightness and showing excellent colour stability.

Titanium dioxide price is well known to fluctuate over time. FP-440 Opacity Pigment™ can provide a similar performance to TiO₂ at an optimised replacement ratio but without the price volatility.



In addition to always providing a significant saving, the use of FP-440 Opacity Pigment™ can help reduce capital outlay and provide more accurate cost forecasting.



FP-440 Opacity Pigment™

PVC Interior Water Pipe



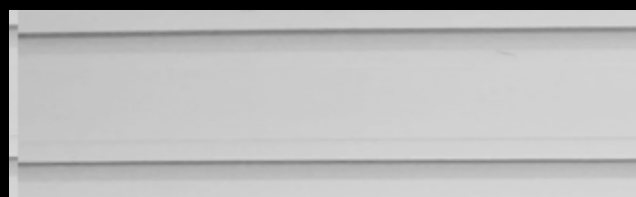
TiO₂ Standard 50% FP-440

Customer evaluations of **FP-440 Opacity Pigment™** in PVC Profiles and Pipes have shown some excellent results. Following FP-Pigments guidance, typically 10 to 20% of the TiO₂ can easily be replaced with FP-440 Opacity Pigment™ while maintaining both optical and weathering properties. Some evaluations have produced even greater replacement levels, for example, a 30% replacement in interior profiles and up to 50% in some pipes and fittings (see opposite). The example below shows one specific case with the results for a 30% replacement of TiO₂ with **FP-440 Opacity Pigment™**.

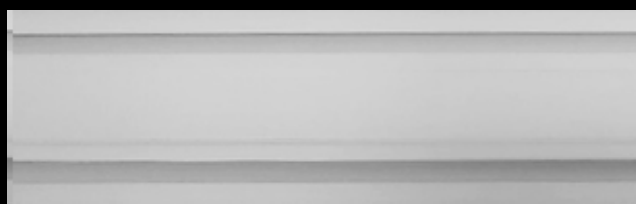
Performance Example in Interior PVC Profile

Example of a Profile Reformulation using 30% FP-440 Opacity Pigment™

Raw Material	phr	phr
	Standard	FP-440
PVC Resin	100.00	100.00
Calcium Carbonate Filler	71.00	71.00
Stabiliser	3.00	3.00
Processing aid	0.60	0.60
Plasticiser	0.90	0.90
TiO ₂ Pigment	2.90	2.00
FP-440 Opacity Pigment™	0.00	0.90
	177.40	177.40



Standard Profile with 2.9 phr TiO₂ pigment



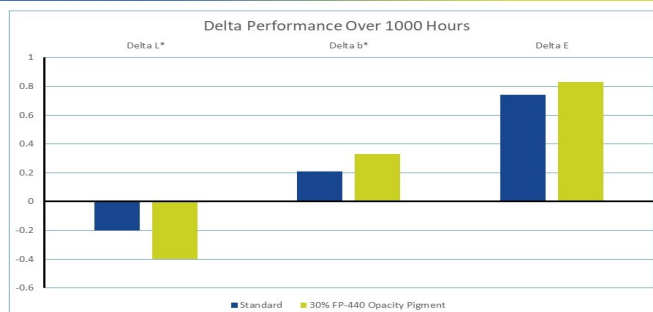
FP-440 Opacity Pigment™ Profile with 2.0 phr TiO₂ pigment and 0.9 phr FP-440

At a replacement level of 30%, the Initial colour of the profiles produced with **FP-440 Opacity Pigment™** is similar to that of the standard with a slight improvement (measured and visible) in the brightness.

The durability of the panels was evaluated using a Xenon Arc accelerated weathering test, measurements being taken every 250 hours. The initial report, made after 1000 hours, indicates that the colour performance of the **FP-440 Opacity Pigment™** profiles continues to match that of the standard profile.

Additional accelerated tested out to 6000 hours is also being made although a 20% replacement level is considered to be more suitable for such extended exposure periods.

1000 Hours Xenon Arc Weathering



The 1000 hour results obtained above suggests that **FP-440 Opacity Pigment™** should be acceptable for use in interior pvc applications at levels up to 30%.

Disclaimer of Liability: The suggestions and data provided are based on information we believe to be reliable. They are offered in good faith, but without guarantee as conditions and method of use of our products are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale.