

Powder Coating Plastics

Duromer Products continues to spread its plastic wings, and now they are becoming shiny.

One of the advantages of thermoplastics is its ability to be coloured, therefore eliminating secondary operations such as painting, but this can cause a challenge when it comes to assemblies that include the combination of metals and plastics. A red colour matched plastic may technically be the same colour as a red powder coated mating metal part, but when they are assembled the difference can be “chalk & cheese”.



Injection moulders and material manufacturers work hard to achieve surface finishes such as texture, reflection, surface roughness and/or gloss, in the attempt to provide the best looking part for clients and their applications, but may fall short through no fault of their own. As in the “Road Runner”, a coyote just can’t be disguised as a sheep, regardless of what it is wearing. This is also true when trying to match the appearance of plastics with metals.

The solution is to powder coat the plastic, but how to achieve this. Traditional powder coating techniques use electrostatic charges to attract the dry powders to the parts that require coating. Traditional injection mouldable plastics will not allow this to happen, especially with any consistency. The reason is the material to be powder coated with traditional methods needs to be conductive, but traditional plastics for injection moulding are not conductive, actually they are very good electrical insulators, with a surface resistivity of greater than 10^{10} ohms.

Duromer Products now has added to their brand range of products, materials that have the capability to be powder coated with traditional powder coating techniques. These materials include Duralon AS5106, a nylon 6 which has a surface resistivity of less than 10^3 ohms, as well as Duralon AS5104-A1, which is also a nylon 6, with a surface resistance of 10^2 - 10^4 ohms.

Traditionally powder coating curing temperatures are 200°C , therefore it is important that the material used is able to withstand these temperatures. Both Duralon AS5106 and Duralon AS5104-A1 have a HDT of 216°C , which will provide the thermal properties to allow the parts to be correctly cured, as well as the heat performance to avoid deformation during the baking process.

Both grades are glass reinforced nylon 6, with Duralon ET5106 having a higher loading providing improved stiffness and impact resistance. Duromer Products would welcome the opportunity to help with your part development and keeping manufacturing in Australia.

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