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Eco Solutions: Making a Difference

We live in a world which is becoming increasingly aware of global ecology and our environment, and how this is changing at international, national and individual levels.



Each day we learn how, and are encouraged, to make a difference to our environment in numerous ways, no matter how small. For many decades pollution, its control and legislation have been high on the political agenda, especially in the more developed countries. Who in Britain could fail to notice the cleanliness of the beaches and seaside resorts in this country compared with only one or two decades ago? However, all too often both our individual and collective view of an obstacle is clouded by limiting our vision as to what is currently possible. This occurs when a way of doing something is so ingrained in our psyche that we cannot conceive of another route. Believe it or not, this is true of removing paint and coatings from objects before recoating them. For many years dichloromethane was seen as the only effective way of removing coatings both industrially and in the home! Fortunately, someone had a vision of the future.

Eco Solutions is a company based in North Somerset and run by a small team of people with over 60 years experience in the coatings removal and paint stripping industry. It was created from a company called KwikStrip that

DESIGN CRITERIA FOR A NEW PAINT REMOVER

- Water-based (80%) for use with modern furniture.
- Low-risk health hazard.
- Easy to apply.
- Hold-up on vertical surfaces.
- Rapid softening of paints.
- Effective on a wide range of paint types.
- Acceptable cost.
- Easy to prepare.
- Stable over time.
- Can be used in the home.



concentrated on furniture stripping and restoration. In its early days KwikStrip used a dichloromethane-based paint stripper in large open tanks into which the furniture was dipped, before being hand brushed. Though effective, the dichloromethane was hazardous to health and to the environment. Although Government regulations were tightened in the late 1980's, KwikStrip was already aware of the problems and was proactive in seeking and developing alternative methods. A new and effective system was patented by the company in the early 90's, which relieved operatives of working in a dangerous environment. However, KwikStrip believed that a *completely* clean and safe method of paint stripping and coatings removal could be developed. In 1995 the BCC was approached by the company to establish a research partnership building on our expertise in paints and coatings. It was from this work that a new company, Eco Solutions, was formed and the old process became obsolete.



Removing graffiti using Graffiti Go™

Eco Solutions is both a Health & Safety and environmentally conscious company, and so produced the design features of a new product with this in mind (see box above). The ultimate test was that it was an 'own-label' product, which was safe to use in the home environment with no health risks, and which performed effectively as a paint remover. ➤

Figure 1. Cotton braided cables in a telephone exchange after treatment with Lead Limiter™ (in red). The Eco Solutions technology penetrates through the cotton braided cable and encapsulates any lead particles into the product, allowing the cables to be safely cut and removed.



BCC identified and studied a set of active components that would cause the paint on a surface to swell and disbond. A variety of materials were selected with the overriding consideration, apart from health and safety issues, that the ingredients should be usable for as wide a variety of paint types as possible. A series of different thickeners and modifiers were also identified to control the rheology of the formulated material. The rheology of the formulation in the pot, during and immediately after application, was characterised to ensure its long-term stability. Hold-up to a vertical surface was established in the formulation by careful rheological control of the freshly applied material.

The product formulation produced had a number of active ingredients, an emulsifying non-ionic surfactant, a biological growth inhibitor and rheological modifying agents. The commercial production protocol of the formulation was developed by the BCC in conjunction with the company. It is worth noting that this is a very different process to a laboratory preparation because of the quantities involved, the time for heating and cooling as well as time for the complete solvation of materials.

This new water-based paint remover produced by Eco Solutions, with the assistance of the BCC, is perfectly

suitable for home use. A series of patents protects the company IP in several product areas, and in several important geographical locations. Eco Solutions products have been awarded the Millennium Products marque by the United Kingdom Design Council in conjunction with British Industry and a British Government initiative. The Millennium Products award has been issued to only 1,012 companies, who were carefully selected on the basis of technical merit, creativity and innovativeness for the 21st century. They are the only company known to us to be marketing a paint stripper with a CE-mark for safety as a children's toy. Their Home Strip™ product is thus being re-packaged for sale into the educational sector, both in the United Kingdom and overseas.

industry. One recent success was a purpose-designed product, Lead Limiter™, manufactured for British Telecom and used for removing old cotton braided cables, covered with lead-based paint, from their exchanges (see figure 1).

Eco Solutions is a world-leading technology and innovations-driven company that has developed internationally patented, leading-edge, solvent-free coatings removers and associated products. These can be used by consumers and professionals alike at an acceptable cost in a variety of applications across different industries. Eco Solutions is dedicated to providing safe and eco-friendly coatings removers without any of the usual risks that are associated with hazardous solvents. Unfortunately, dichloromethane still remains in the psyche of many people and in the corporate memory of some companies. There is still an educational job to be done and Eco Solutions and the BCC are actively continuing to help make a difference. ●

In addition, Eco Solutions manufacture a range of Trade Strip™ products for professionals and



Eco Solutions can be found at www.ecosolutions.co.uk