



Highland Colour Coaters

Case Study: Metalwork coatings Knowledge Transfer Partnership

Highland Colour Coaters provides a range of metalwork finishing services to designers, architects and fabricators to add a new dimension to products and buildings.

A Knowledge Transfer Partnership between Highland Colour Coaters and Glasgow Caledonian University (GCU) has resulted in significant cost savings and improved productivity for the Cumbernauld-based company.

Highland provides metalwork finishing services including its Colourgalv process, which blends hot dip galvanising with powder coating to offer both corrosion protection and colour aesthetics. The company decided a Knowledge Transfer Partnership (KTP) would be the best way to help investigate the causes and provide solutions to a technical phenomenon called 'pinholing' in which a gas seemingly emerges from galvanised steel and penetrates powder coatings, leaving small craters in the surface.

The company was introduced by Interface to GCU, which has expertise in surface engineering and metallurgy.

During the 30-month project, KTP Associate Rikki Speakman has been working under the supervision of GCU Professors Colin Chisholm and Mahmoud El-Sharif and Dr Ray Ansell, and with access to the research facilities of the world's largest manufacturer of coatings, Akzo Nobel.

Powder coating involves electrostatic charged powder being oven cured. Prior to the KTP, a bottleneck in production was caused because items were dried for longer than necessary. As a result of the KTP work, Highland is now able to sample and measure the moisture to determine when it is dry more effectively. When fully implemented it is hoped that this will increase productivity by 10-25%.

Geoff Crowley, Highland's MD said: "The KTP has found that there is no one single thing causing this pinholing problem, but a range of things. The work that Rikki has done has reduced the rate of re-works from 4% to less than 1% with an estimated saving of between £70,000 and £100,000 per annum to our business.



“As a mechanism for researching a problem that we don’t have the people, time or resources to do ourselves, this KTP was great for us.”

Knowledge Transfer Partnerships is Europe’s leading programme helping business to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. KTP is funded by the Technology Strategy Board with 12 other funding organisations.

KTPs can vary in length from six months to three years, depending on the needs of the business and the desired outcomes. KTP enables new capability to be embedded into the business and has benefited and continues to benefit a wide range of businesses across many sectors, including micro sized, small and large businesses, third sector organisations or public.

GCU’s KTPs have included those with Highland Colour Coaters, ScotRail, Street League, Shearwater Marine Services and SPT.

MAHLE Engine Systems UK is also collaborating with Glasgow Caledonian University on a KTP project looking at applications of surface characterisation and metallurgy knowledge to identify factors influencing integrity of bimetallic strip bond delamination.

As a leading global development partner for the automotive and engine industry, MAHLE offers unique systems competence in the combustion engine and engine peripherals. The project is looking at testing and process monitoring tools, techniques and procedures for the assessment of bimetallic strip bond integrity and monitoring of critical process parameters.

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School of Engineering and Built Environment Engineering



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