

CASE STUDY NUMBER 84: Electricity North West and Thermal Road Repairs - Reducing Environmental Impact and Maximising Sustainability in Reinstatement Repairs by the use of Thermal Road Repair techniques

WINNER OF THE NJUG SUSTAINABLE METHODS AND MATERIALS AWARD 2015

The National Joint Utilities Group (NJUG) is the UK industry association representing utilities solely on street works issues. The 42 Utilities and 16 Associates we represent are major contributors to economic growth and work to deliver gas, electricity, water and telecommunications to both individual consumers and UK plc. NJUG members need to continue to drive forward further improvements. We have therefore developed the NJUG Vision for Street Works, which revolves around seven main principles:

- Safety
- High Quality
- Minimise Disruption
- Keep the Public Fully Informed
- Sustainable Methods and Materials
- Avoid Damage to Underground Assets
- Innovation

This case study is an example of the street works sector delivering on these principles and turning the vision into reality.

Overview

Reducing Environmental Impact and Maximising Sustainability in Reinstatement Repairs by the use of Thermal Road Repair techniques:



The thermal road repair system allows a failed reinstatement to be reworked to a high quality standard using a combination of sustainable methods and materials within a technique that has a significantly reduced impact on the environment.

Despite the significant improvements seen across the utility sector we are still experiencing reinstatements that fail to perform adequately in situ due to a combination of factors. Reworks are typically a combination of re-excavation and replacement of the bituminous layers often with associated traffic management and disruption to the highway network and always with significant environmental impact related to the use of hot lay bituminous materials and the need to transport and tip materials to and from site.

Reinstatement repairs and reworks completed by the thermal road repair system produce a high quality and durable solution that has a measurable reduction in noise, energy usage a positive impact on the carbon footprint, a reduction in waste and the need to use new materials, as well as supporting the implementation of sustainable, innovative methods and techniques.

Case Study

Electricity North West is continually striving to develop and support streetworks initiatives that have a positive environmental impact. Traditionally failing bituminous reinstatements are reworked by methods that utilise conventional planning out and replacement of the surface and / or binder course. As part of the considerations for the resolution of issues faced by Electricity North West,

dialogue was held with both Cumbria County Council and Lancashire County Council to seek solutions that met the necessary requirements and particularly considered all aspects of environmental impact. Electricity North West were aware of the fact that SP Energy Networks had recently undertaken works using the thermal road repair system as developed and delivered by a company called Thermal Road Repairs Limited (TTRL), and it appeared that this had produced a high quality reinstatement with several key environmental benefits. Electricity North West met with this company (TTRL) to review their materials and methods and commissioned them to undertake a variety of different works to evaluate the benefits of their system. Prior to the support and direction of Electricity North West there had been very little consideration given to the use of this system for utility work.

How Does the Thermal Road Repair System Work?

- A pre-site survey is undertaken to ensure the suitability of this method
- This system uses leading edge heat transfer technology to recycle the existing bituminous materials in situ
- Portable thermal units are positioned above the area to be treated and also span onto the immediately surrounding highway
- Computer controlled heat is introduced to ensure the treated materials are heated to the required depth
- The treated area is then agitated (either by hand or mechanically) and a polymer binder and where required new materials are added
- The treated area is then compacted using conventional plant and methods



What are the key environmental benefits?

Works completed using this system are constructed to leave a joint less (“seamless”) reinstatement which removes the potential for future issues related to reinstatement edges and by definition has a positive environmental impact by minimising the potential for future repairs. If this method is used on a reworks it will typically utilise around 90% of the in situ bituminous materials. This results in less vehicle movements which would ordinarily be required to collect new materials from a plant. Any additional materials used are nominal and are conventional asphalt concretes which are widely available, there is no need to use so called “enhanced” materials which are produced by the inclusion of additional bitumen – a process that has a negative environmental impact. TTRL delivers a non-aggressive action of repair which requires no saw cutting, no hydraulic breakers and no milling or surface planning - all of which results in significant noise reduction and reduced air pollution.