



Cliffe Lane CBGM Testing Case Study

Client: Stabilised Pavements Ltd

Project: Cliffe Lane, Market Weighton, Eroy

Services: UKAS accredited, Cement Bound Granular Mixture (CBGM) Testing

About the Site

Cliffe Lane is situated off the A614 Southwest of Market Weighton. The site is a narrow country lane and runs generally North/South off Market Weighton Road. The length of the site is approximately 1.6km.

As a part of the ongoing Road Recycling Works, Stabilised Pavements Limited (SPL) commissioned Construction Testing Solutions (CTS) to carry out a series of field and laboratory tests to ensure construction materials were suitable for use.

CTS were commissioned by SPL, to carry out materials testing at Cliffe Lane, Market Weighton, Eroy. The testing was required to provide information relating to suitability of the materials during construction, as well as end-product testing during the in-situ recycling of the existing carriageway.

Requirements

The scope of the testing, which was specified by SPL, comprised on-site moisture content and grading analysis, dynamic plate tests and compressive strength of cylinders. The tests were required to confirm the suitability of materials both during construction and the in-situ recycling of the existing carriageway.



The fieldwork was carried out between 24th July and 1st August 2017. All testing was carried out in general accordance with Part 9 of BS 1377 (1990), IAN 73/06 Revision 1 (2009) and RSTA-ADEPT Code of Practice for In-situ Structural Road Recycling.

Schedule of Tests

Rapid moisture content: 2 Per 1000m² during pulverisation/mixing, additional as requested. Tested on site.
Particle Size Distribution: 2 Per 1000m² during pulverisation/mixing, additional as requested. Tested on site
Compressive strength of cylinders: 2 sets of 3 per 1000m² during mixing. 1 test at 7 days, 1 at 28 days. Curing at 28 °C
Dynamic Plates Tests: 1 test every 20m (linear), alternating wheel paths. 1 tests at 2hrs, 1 test at 24hrs.

Why Construction Testing Solutions?

SPL had previously used CET on a contract and therefore due to the locality of this site, another CET Group laboratory was perfectly placed to undertake the testing package. A pre-contract meeting was held at the regional laboratory prior to starting, the experience and general competence in this type of testing was evident enough to be able to award the contract to CTS, with the confidence that the laboratory would perform.



Results

Dynamic plate tests (surface stiffness modulus) were carried out on the recycled material 2 hrs after completion of compaction, and again 24hrs later. Further additional testing was carried out on sub-formation layers prior to stabilisation. These dynamic plate tests give a conformation of initial mechanical stiffness, and confirmation that curing has commenced.



Structural Road Recycling Defined

The purpose of Structural Road Recycling is to effectively restore a failed road pavement by recycling and reusing the existing construction materials to construct a new pavement with strength and life expectancy that is equal to that of a traditionally designed and reconstructed pavement. The need to dispose of huge volumes of waste materials, import processed virgin aggregates and hot bituminous bound material is greatly reduced resulting in a lower carbon footprint overall.



Construction Testing Solutions

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