



PowerCem

United Kingdom

Official partner of PowerCem Technologies!

PILING MATS AND CONSTRUCTION PLATFORMS

Virtually any soils or material found on construction sites in the UK including organic top soils and most contaminated soils and materials can now be stabilised by the use of our unique RoadCem Technology to produce strong, safe, effective Piling Mats and construction platforms.

By using the existing 'on site' soils or materials, construction can in most cases be commenced far quicker and with reduced planning and environmental constraint and delays. Removing soils or existing materials from site creates an unsustainable chain of events which involves the trucking to site of a similar quantity of quarried stone, bad for the environment the local road infrastructure and everyone living or working close to the site.

Using the in-situ soils and materials also avoids the increasingly costly exercise of land filling excavated site waste.

The early establishment of a stabilised all weather working platform will provide a safe and sufficiently durable working surface at all times of the year for trucks and construction plant, such as piling rigs and cranes to operate safely. With RoadCem we allow you to work with confidence all twelve months in the year.

RoadCem stabilised soil working platforms formed by effectively engineering the existing site soils can be utilised many times through a construction site life-cycle; they may provide support for the works plant, ensuring minimal degradation or improve the existing site top soils, to act as form work for casting pad foundations, provide a surface for steelwork erection and act as a structural element within a floor slab or pavement, as well immediately providing early temporary access roads, compounds and project car parking.

RoadCem stabilised soil piling mats are deflection free, simple to set up and most interestingly display a visco elastic behaviour, absorbing the dynamic forces created by the piling rig, leaving the mat clean and crack free for use as blinding if required.



The high Module of Elasticity and stiffness of the RoadCem mat allows fast safe working even when the sub grade is weak.

Piling Mats:

In most circumstances the stabilised site soils can be used to produce strong, safe effective and predictable piling mats.

A typical piling mat requires a platform that can be penetrated effectively in a safe manner without losing any integrity, without deflection of the driven piles and with minimum rebound.

With reduced risk of shear RoadCem mats can be designed and built on a smaller scale saving on time and material costs and because we can easily build to existing or planned site levels access on to the mat for cranes, rigs and trucks is simple and safe from all directions. We have our engineers who can design the mat to meet the ground conditions and your loading requirements and also provide certification for your piling contractor.

Driven Piles:

A 6000 m² RoadCem stabilised soil piling mat constructed recently for MWH Global at their Clay Mills project is a good example of how this new technology can be far better than traditional methods. Constructed in less than a week by DNS Midlands Ltd from the weak silty clay soils, the mat was ready immediately for piling specialists Bullivant's to commence their complex driven pile programme. Access to the Severn Trent Water Clay Mills project required the crossing of a busy unmanned railway crossing and keeping site traffic to a minimum was a priority.

We understand that the original design for a stone mat would have required an additional 1400 truck movements to and from site.

This soil mat, which effectively cut the piling programme by weeks, subsequently won environmental and innovation prizes for both Bullivant's and MWH Global.

Auger Piles



Auger piling on two tier RoadCem mat, note no shear problems at all

Work has now been completed at the site of new headquarters for Maritime Transport at Trinity Distribution Park, Felixstowe.

The groundworks, piling mats and large car parking areas have been designed by Rodgers Leask of Derby who specified the use of RoadCem soil stabilisation.

The 300 mm deep stabilised soil piling mats, roads and car parks were constructed by Geofirma using Wirtgen 2500 soil stabilisers.

Soil conditions across the site varied from alluvium to made ground in depths of 300 mm to 2300 mm covering a sub base of dense London Clay.

These existing soils were found to be very susceptible to wetting up in the rainy Autumn/Winter weather which were stabilised without the need to add stone.

Bored piling was specified to avoid noise and vibration problems and the piling work on the complex two tier stabilised soil mats has been highly successful, with fast clean penetration, easy set-up and no absolutely no deflection or shear problems.

With no risk of shear the rigs have been able to work close the edge of the mats with no tracking or break away.



The sustainable use of new RoadCem soil stabilisation technology can save both time and money when it becomes part of the overall construction design.

These strong flexible mats installed to the levels of the final build design were left in place once piling is completed as foundation for final building construction.

After serving their original purpose of providing an all-weather construction compound and truck roads. The stabilised soil access roads and car parking areas were left in as base to act as base for the thin asphalt and block paving roads and parking.

Summary:

RoadCem soil mats are faster, cheaper and in practically every way better than imported stone mats. The set up and placement of rigs is made simple and safe, and very stable with no deflection allowing reductions in piling programme times.

The flexible nature of the stabilised soil mats prevents any cracking or breakaway during piling making it suitable for both driven and bored piles.

Mats for piling must be safe to access and to use, piling is in most cases specified because the existing soils and sub strata is considered weak or prone to settlement.

The stiffness of the thin RoadCem mats is capable of bridging most weaknesses in the sub strata and because RoadCem mats are built from the pre-existing soils, unlike imported stone they do not add additional weight to the construction during the piling programme, reducing risk of settlement before the piling programme is complete.