

Best practice at Farringdon – Clayboard



Overview

Future Crossrail tunnels passing underneath the ITH and the Fleet Sewer require areas of the ITH sub structure to have a void created underneath.

Expanded polystyrene is more commonly used as a void former on construction sites because it is a low cost product. Polystyrene takes a very long time to biodegrade and is often a common form of pollution in the outdoor environment, particularly polluting shores and waterways.

At Farringdon we have taken the decision to use Clayboard. This is an environmentally friendly product. It has a biodegradable honeycomb core set between lightweight polypropylene facings and is used as a void former.

Innovation

When dry, Clayboard is strong enough to support the weight of wet concrete and steel reinforcement. Water is introduced to the Clayboard core once the concrete is set. This degrades the honeycomb centre leading to the creation of a void. The space accommodates clay expansion without exerting undue pressure on the structure above. The resulting void continues to accommodate natural soil shrinkage and expansion to prevent structural damage.

Traditional void forming systems can exert considerable pressure on ground slabs during the compression process. Clayboard is unique, with its central core designed to collapse under just 3Kn/m² once water has been introduced.

It also creates less waste. Sections of Clayboard as small as 300mm x 300mm can still be utilised due to the strength of the cell structure.

Benefits

- Clayboard is manufactured in the UK.
- It is an ISO 14001 certified company.
- The paper honeycomb core is made from 100% recycled paper and the polypropylene facings have up to 70% recycled material content.
- Clayboard is half the thickness of competitive products which means twice the amount of material can be transported and fewer deliveries required helping to cut CO₂ emissions.
- Due to the reduced thickness the required waste disposal is greatly reduced. This can save thousands of pounds in removal costs and landfill tax.



Clayboard used at Farringdon Project



Clayboard void former

Targets and objectives

The use of Clayboard has helped us meet our targets and objectives in the following areas:

- CEEQUAL – material use; energy; waste management; transport;
- Farringdon Sustainable Design and Construction Strategy - transport; energy and carbon; waste; sustainable material use
- Farringdon Targets and Objectives – minimise waste; restrict carbon emissions; use sustainable materials in a sustainable way.