

Offsite manufacturing can reap benefits of risk-free electrical installation in pre-cast concrete

Offsite manufacturing of pre-cast concrete panels for construction is becoming more common in the UK, helping to speed up building projects and reduce costs. Chris Lloyd, Managing Director of Spelsberg UK, explains how dedicated electrical infrastructure systems are enabling reliable, risk-free installation before the concrete is cast.

The 2018 report published by the House of Lords Science and Technology Committee, Building for Change, concluded that the construction sector, operating using its traditional methods, will struggle to meet the UK's needs for housing and infrastructure. It also noted that UK construction productivity is low and that there are skills and labour shortages.

In a separate report, management consultants KPMG highlighted only minimal growth in productivity over the last 20 years, as well as the increasing skills shortage. These challenges, combined with unpredictable weather, make it difficult to deliver projects on time and within budget.

Both reports made powerful arguments in favour of offsite manufacturing for construction as a way forward. When KPMG analysed a hypothetical project to construct a high-rise office building in central London, it concluded that offsite manufacturing would knock months off the project timescale and deliver significant financial net savings.

On top of this there were savings made in the interest on financial borrowing, improved cost and time predictability, reduced noise and disruption during construction as well as improved health and safety.

In real construction projects, offsite manufacturing has been proven to provide greater certainty for project delivery, with improved efficiency and productivity, combined with all of the benefits of manufacturing in a controlled factory environment.

It is easy to see why enthusiasm for offsite manufacturing for construction is growing in the UK, with pre-cast concrete, light gauge steel, engineered timber and volumetric construction techniques all becoming established methods of building. These techniques are now highly developed, particularly for large scale industrial projects, where using pre-cast concrete in particular has come to the fore.

In such projects, the concrete is prepared, cast and cured in a controlled factory environment using reusable moulds. The concrete elements are then delivered to site where they are joined together to form the completed building – far more quickly than using traditional methods.

In the past, simple pre-cast concrete panels were delivered to site and erected, then the building services were installed. This could lead to multiple trades trying to work on the same panel simultaneously, often in poor weather, low light or against the clock.

A solution to this is to cast the required electrical infrastructure into the panels at the factory. For this to be successful, equipment such as electrical enclosures, have to be strong and stable and its position within the panel has to be assured.

Spelsberg was one of the first electrical enclosure manufacturers to supply such enclosures for modular buildings and has the experience of many successful projects to call on. Being designed specifically for use in pre-cast construction, the enclosures eliminate many of the risks that the industry previously had to accept.

Suitable for vertical and horizontal sections, Spelsberg's IBT System allows conduit boxes, junction boxes, lighting outlets and other installation components to be fixed to the formwork before the actual concrete pouring begins. The housings are fixed to metal formwork by way of strong magnets, or to wooden formwork by nails and a support spar fixing; the required conduit is connected and then the concrete is poured. When the concrete is set and the formwork removed, all the required housings and conduits are in place ready for the cabling and accessories to be installed.

The IBT System range of products is made from halogen-free, high temperature resistant material, with a large choice of sizes that can be assembled easily to fit nearly all requirements. The crucial aspect of sealing is assured with a patented diaphragm system which ensures that after the conduit is inserted, the diaphragm returns to its original position and provides strain relief and sealing without the need for special grommets.

The Spelsberg IBT System offers the perfect solution for pre-cast concrete panels in a wide range of construction projects. The product range, specified for concrete installation systems, is designed to be as strong and stable as the concrete itself while assuring ease of assembly, simplicity of use on site and a high-quality finish.

Photograph Caption:

The Spelsberg IBT System offers the perfect solution for pre-cast concrete panels in a wide range of construction projects. Suitable for vertical and horizontal sections, Spelsberg's IBT System allows conduit boxes, junction boxes, lighting outlets and other installation components to be fixed to the formwork before the actual concrete pouring begins.

About Spelsberg

Spelsberg is one of the largest manufacturers of electrical enclosures in the world. With over 4,000 enclosures available as standard and further customisation possible, it offers solutions for almost any application.

With the largest supply of non-metallic enclosures, ex-stock in the UK, its products are often available for delivery within 24 hours; customisation is possible on any product, including bespoke entries, engraved corporate logos or fitted terminals, within 48 hours. Products can be ordered direct from Spelsberg or from most leading supply specialists including RS, Rapid, Farnell and CPC.

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