



Maintenance-free and flexible flooring

A key component of any industrial floor is the joint system. There are various types of joints available and correct selection is paramount to ensure the floor meets the end user's requirements. Headlam Group's new warehouse required a flexible and low-maintenance solution, as Paul Whitehead of Isedio reports.

To support continued growth, Headlam Group invested in a new £12 million head office and a further 90,000ft² (8360m²) of warehouse storage space at its Coleshill headquarters, near Birmingham. Headlam Group, a floor coverings distributor, supplies laminate flooring, carpets, vinyls, underlay, grippers and self-levelling compounds to the UK market and also has businesses in Europe.

Supply chain

Headlam appointed Rosco Wellingborough as the principal contractor as the companies had worked together successfully since 2000. Rosco let the contract for the floor as a design-and-build scheme to Stanford Industrial Flooring.

Requirements

The warehouse floor would be subject to heavy static loads, such as 135kN racking leg loads and also frequent, heavy dynamic loads from the forklift trucks. The warehouse would operate 24/7, so keeping any facility downtime for repairs or maintenance to a minimum was high on the agenda. All floors require a degree of maintenance and repair

throughout their life cycle, but minimising this downtime was a priority for Headlam. The high level of traffic movement dictated that the floor surface must be very durable. Another requirement was that the floor should be future-proofed, such that racking layout changes could be accommodated, as business needs change.

Floor construction

The design required a 225mm-thick floor, constructed using C32/40 strength class concrete. It took eight days to cast the 2000m³ of concrete, which was laid on 120 rolls of 1200 gauge polythene. The floor was reinforced with A252 steel fabric reinforcement throughout. Floor flatness was specified as FM2 (as per TR34⁽¹⁾) for free movement areas and CAT-1 for VNA racking aisles and an abrasion resistance of AR1 was achieved.

Joint selection

The existing warehouse floor was constructed in 1999 and used a lightweight version of a traditional straight joint. The joints were made with 5mm-thick top strips and several repairs had been required over the years at the joint-concrete interface to maintain the

Top left: Isedio's Shieldjoint system.

Top middle and right: Lightweight traditional joint showing floor repairs.



Completed Isedio
Shieldjoint at
Headlam.

integrity of the floor. Such maintenance requires facility downtime, which Headlam wanted to avoid in its new warehouse extension. It is now common practice for such joints to be made from a minimum of 8mm steel, with 10mm being the most common, in order to provide greater armouring against forklift wheel traffic, thus reducing the amount of maintenance required. Rosco was searching for a more advanced joint solution that could virtually eliminate maintenance and provide more flexibility for racking layout.

Flexible solution

Given the design-and-build nature of the contract, Stanford Industrial Flooring was responsible for selecting the most appropriate joint system. Kevin Louch, managing director of Stanford, says, "We chose Shieldjoint for this job as it provides the most flexible solution and also does not require any joint sealant. Eliminating the need to seal the joint saves both money and downtime for the client now and throughout the life of the floor. The joint design also eliminates any impact when trafficked and therefore needs virtually no maintenance compared with traditional straight joint systems. We have successfully used Shieldjoint on a number of projects and find it easy to install due to its straight edges."

Vital to overall ease of installation is how joints are connected together at intersections. One of the greatest challenges for any joint manufacturing company is to design innovative joints that offer useful benefits to the end client yet are also easy for the flooring contractor to install. One particular area of difficulty is at a joint intersection. Shieldjoint is installed with a telescopic intersection post. The height-adjustable post can be set to the

exact height to achieve the correct finished floor level.

Future-proofing the floor was another important requirement of Headlam. Warehouse racking layouts may need to change over time as product lines change. A floor design using traditional straight joints requires the joint positions to be carefully considered such that they cause the least disruption to the operations and still provide a sensible pour sequence for the flooring contractor. However, this effectively fixes the design of the racking layout. Any joint that offers zero impact when trafficked allows for a much greater degree of racking layout flexibility. Racking can be relocated to suit changing business needs and still the floor remains as a seamless floor to the forklift driver. Such joints will not have linear, straight top strips but rather some form of wave, such as Shieldjoint.

Mr Roswell of Rosco was impressed with the finished floor and the innovative joint solution, "It is more convenient for us and better for the forklifts as well, resulting in less damage on tyres. We have been really pleased with its performance and will be specifying it for use across highly trafficked areas within a new Headlam Group distribution warehouse that is due to be constructed in Ipswich."

The new warehouse extension at Coleshill was completed in 2014 and since that date no maintenance has been required to the floor joints.

A video of the construction process can be found at: http://rosco-construct.co.uk/?page_id=216. ■

Reference:

1. CONCRETE SOCIETY. *Concrete industrial ground floors – a guide to design and construction*. Technical Report 34, Fourth Edition, The Concrete Society, Camberley, 2013, third impression March 2016.