

Project Spotlight



Arco NDC, Hull, UK

Construction of a 21,000m² 'Jointless' Suspended Floor Slab for Arco

Family owned safety experts, Arco, offer the widest range of PPE in the UK. Their national distribution centre, with over 27,500m² of storage space, holds an impressive 22,000 products and they have a network of over 40 branches covering the UK and Ireland.

A new 21,000m² building to house additional warehouse and logistics capabilities was required by Arco to double its capacity. This extension is to be linked to the existing building and has been designed to optimise the space available having a 19m internal height storage capacity and the ability to store around 40,000 pallets. The new building will complement Arco's current facility which opened in 2000.

Twintec were chosen to construct the floor slabs for this new national distribution centre in Hull which will service Arco's expanding operations across the UK following a rigorous and detailed tender process.

Working closely with the main contractor, Clugston Construction Ltd, Twintec installed a 360mm thick, pile-supported, structural slab to a design produced by HBPW Engineers. The slab contains over 7,350m³ of C50 grade concrete and 650 tonnes of specially designed mesh fabric. The majority of internal joints are tied construction joints meaning that the slab acts as a single uniform mass and shrinkage movement is distributed evenly throughout the slab and around the perimeter. This design allows the client complete

Project Data

End User:	Arco
Main Contractor:	Clugston Construction Ltd
M ² :	21,000m ²
Pour Days:	22
Flatness Tolerance:	FM2 / DM2
Slab Depth:	360mm
Completion Date:	March 2019

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flexibility over the position of internal fitout items - racking and storage systems - thus providing a real long-term benefit to Arco.

The slab consists of both free movement areas cast to achieve FM2 flatness tolerance of TR34 4th Edition and also a 78m deep VNA racking area cast to DM2 flatness tolerances of TR34 4th Edition. The DM2 tolerance was achieved over 98.5% of the total aisle length (around 1,750m) and the specialist techniques employed by Twintec mean that there are no joints of any kind within the operating aisles. (In fact, the VNA area was also checked against the FM1 flatness tolerance - just for fun - and found to pass this comfortably). To achieve this level of flatness on a slab of this thickness in a single pass and at an output rate of around 1,000m² per day is truly exceptional and a credit to the highly skilled Twintec construction team and the proactive and supportive approach of Clugston as Main Contractor.

One other area of interest in the construction is at the junction between the existing and new buildings. The joint where an old and a new slab meet each other in this type of project is always an area of concern for an end user. To help with this specific situation Twintec have developed their Twinflex 'invisible' joint system. Twinflex is a jointing system that uses high quality specialist resins to remove the 'visible' joint between floor slabs and provides a smooth, long-lasting, aesthetically pleasing transition from old to new. Unlike other systems there is no joint 'line' or opening joint with this system so clients can have confidence that their MHE will operate smoothly and efficiently for years to come across the transition.

Although Twintec are predominantly experts in constructing large bay, steel fibre reinforced floor slabs, this project demonstrates that Twintec's skills are not limited to steel fibre only and they can be trusted to deliver a client's requirement whatever the chosen system.



TWINTERC ASSURANCE GUARANTEE

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