



## Slabstress

Chilled Warehouse - Waitrose, Bracknell

### Client

Waitrose

### Principal Contractor

R G Carter

### Structural Engineer

Hurst Pierce & Malcolm

### Concrete Package

Stuarts

### Post-tensioning Contractor

Freyssinet Ltd

### Contract Duration

1 month

### Works Completed

January 2010



Over the last 20 years, Freyssinet have built three warehouse slabs on grade for Waitrose at Bracknell and the Facilities Manager is delighted at the prolonged performance of the slabs.

They have maintained their flatness and wear resistance and there's virtually no cracking. Consequently, they specified post-tensioning again for their new chilled warehouse on the West Site.

The advantage of post-tensioning is that the tendons compress the slab in both directions thus inhibiting the formation of any cracking (as the slab is in compression). All the shrinkage takes place around the perimeter of the slab rather than at control joints that may have been induced or formed at intervals across the slab.

Freyssinet's solution was a 200mm thick PT slab on 300mm MOT type 1. To permit the slab to be stressed, 1m wide RC infill strips were left around the perimeter of the main slab. These were also 200mm thick except where traversed by fork lift trucks (eg at dock levellers) where they increased to 250mm. The back-to-back racking load was 85kN, the FLT wheel load was 100kN and the CBR of the ground only 2%.

The 104 by 96m warehouse slab was divided into 8 pours each approximately 52 by 24m. The slab was stressed with unbonded tendons which were laid on the blinding so that Stuart's laser screed could run over them, the tyres being soft enough not to damage the strand. The tendons were chaired up to the correct height immediately in front of the leading edge of the concrete pour.

In order to keep the responsibility in one package, Stuarts were employed by Freyssinet. The two companies worked together on site to master the pouring and stressing sequence to ensure a fully stressed and crack free slab was handed over to the client.

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