Tunnelling

**TYPE OF APPLICATION:** Precast Segmental Lining  
**LOCATION:** London UK  
**DATE OF CONSTRUCTION:** 2003 - 2004  
**ENGINEER:** Rail Link Engineering Ltd  
**CONTRACTOR:** Nishimatsu Cementation Skanska JV

**Description of the project**

In total there was 40km of steel fibre concrete tunnel lining in the CTRL phase 2 project - The Channel Tunnel Rail Link is the final section of tunnelling that links central London to France with a journey time to Paris in 2 hours or so. This section of the project is known as Contract 220 The London Portals and is 2 tunnels at 7.5km in length with the tunnel diameter at 7.15m internally with a thickness of 35cm, the ring is made up of 9 segments plus a key segment and is a single track twin bore set of tunnels, the design life is set at 120 years and was subjected to hydro-carbon fire testing that determined the use of micro polypropylene fibres to be incorporated with the steel fibre solution that had already been verified. In total over 200000 segments were produced for the contracts 220 and 240 with very little or no damage what-

**Solution with Dramix®**

**Fibre type:**  
**RC80/60BN**

**Concrete thickness:**  
35CM

**Concrete quality:**  
>60MPA

**Project size:**  
>6500 Tons (220&240) total

Dramix virtually eliminates all build damage on the segment joints

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