

Project Info

 21 / 12 / 2010

 CC8 bulk rolls

 2500sqm

 Transverse layers

 Alcobendas Station, Madrid, Spain

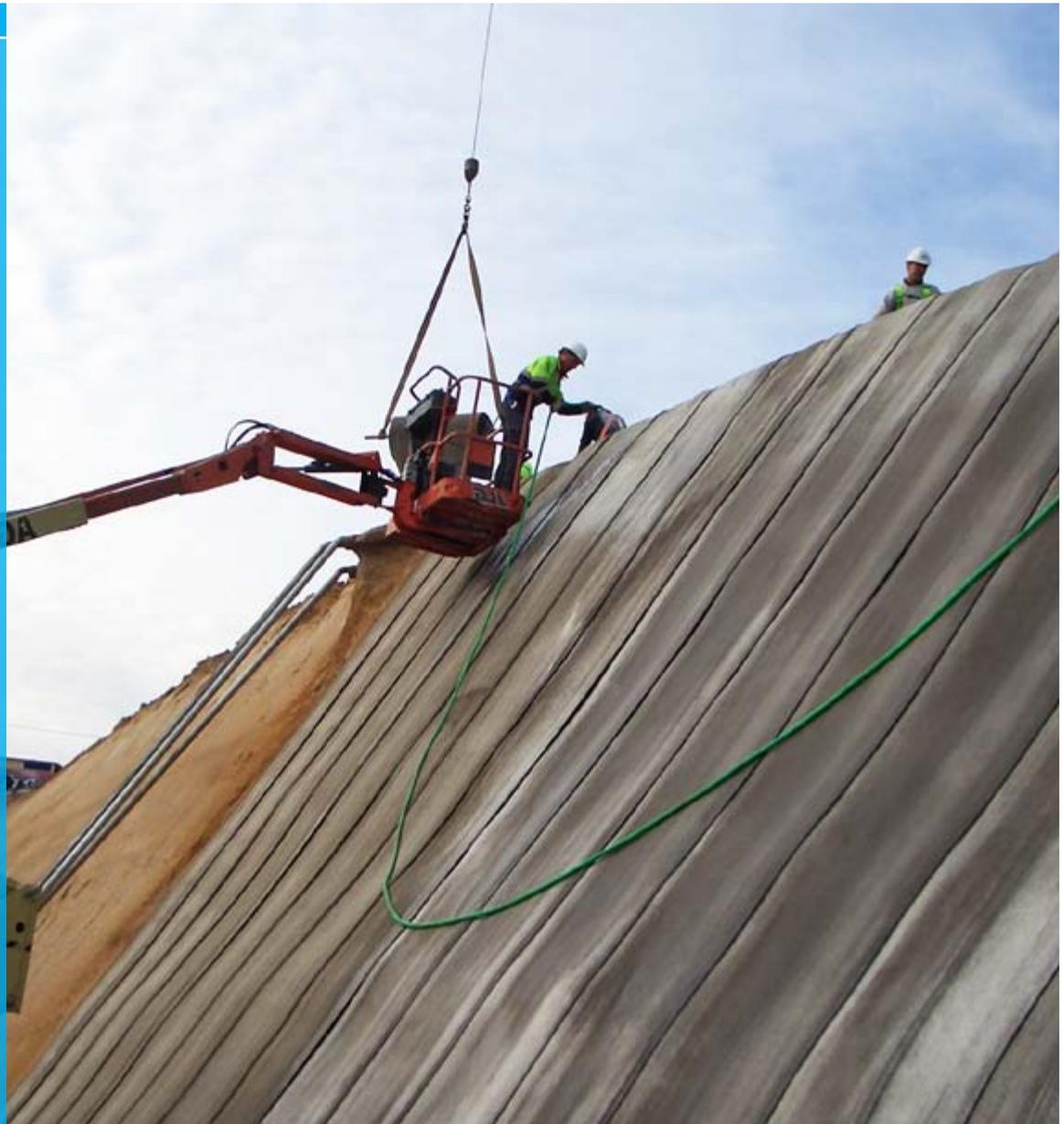
 ADIF

 - Slope stabilisation of railway embankments on a high speed rail line.

- Installation of CC allowed train traffic to continue without disruption of service.

- 2500sqm CC8 used

- Installed at a rate of 450m/day



Dispensing CC8 bulk rolls from spreader beam equipment

In December 2010, ADIF, the Spanish authority responsible for railway infrastructure management, specified Concrete Canvas (CC) to be used as slope protection for a railway station in Madrid. CC was chosen to address years of erosion and instability issues affecting the entrance of Alcobendas tunnel station. Erosion of the steep railway slope embankments had caused silting at the drainage pumps in the tunnel entrance. Shotcrete had been used twice previously but presented several problems with installation and durability.

2500sqm of CC8 was specified and delivered on site in bulk rolls, which were dispensed from spreader beam equipment and plant. The CC was fixed at the top of the 12m slope using galvanised steel pegs whilst adjacent CC layers were screwed together. A shallow surface runoff ditch was formed at the toe of the slope. Train traffic was not affected during the works: the station was able to remain open during the installation as there was no risk of discharge from material onto the tracks, often a problem with sprayed concrete techniques.

Installing at a rate of over 450sqm/day, the project was completed in under a week and was 70% quicker to install than if shotcrete or gunite had been used.



Alcobendas tunnel station. Train traffic able to continue during works



Damaged guniting section from previous remediation work



Dispensing CC from a bulk roll and fixing to top of slope using steel pegs



Hydrating CC



Completed CC lined embankment