

Project Info



21 / 12 / 10



CC8™ Bulk Rolls



2,500m²



Vertical layers



Alcobendas Station,
Madrid, Spain



ADIF



Protection of railway
embankments on a high
speed rail line.



The installation at Alcobendas Station

In December 2010, ADIF, the Spanish authority responsible for railway infrastructure management, specified Concrete Canvas® (CC) GCCM* 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.

2500m² of CC8™ was specified and delivered on site in bulk rolls, which were dispensed from spreader beam equipment and plant. The CC8™ was fixed at the top of the 12m slope using galvanised steel pegs whilst adjacent layers of the material 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 450m²/day, the project was completed in under a week and was 70% quicker to install than if shotcrete or gunite had been used.

*Geosynthetic Cementitious Composite Mat





Alcobendas station



Damaged gunite section from previous remediation work



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



Hydration was given via a hose



The completed installation