

HOPE VALLEY RAIL LINE
BAMFORD, DERBYSHIRE, UNITED KINGDOM

Simple Drapery

Problem

Network Rail were undertaking a large-scale upgrade of the Manchester to Sheffield rail line that runs through Hope Valley. Part of the improvements included a new railway loop immediately to the southeast of Bamford station to allow passenger trains to overtake slower-moving freight trains in order to improve passenger journey times.

To construct the new line that formed the overtaking part of the loop it was necessary to cut into an existing rock slope running adjacent to the existing rail line. As the new line would be running in close proximity to the newly cut rock slope a drapery mesh rockfall protection system was required to protect both passing trains and the rail infrastructure from falling debris from the rock slope.

Solution

Project designer, Mott MacDonald specified Maccaferri MacMat HS30 P as the drapery mesh element of a soil-nailed rockfall protection system. MacMat HS30 P is a composite mesh that combines the high tensile strength/low elongation mechanical properties of Steelgrid HR30 P with the erosion protection properties of MacMat. The steel mesh features double-twist rockfall netting with integral high tensile vertical wire ropes which are spaced vertically at 300mm intervals. This provides a high tensile strength of 119kN/m at a low tensile elongation of only 6%.

The steel mesh is class A Zn-Al5% galvanized and then coated with an additional 0.5mm thick layer of Polimac high-performance polymer coating to give a BBA-certified design life in excess of 120 years in the harshest of environmental conditions.

The MacMat erosion protection matting is factory fitted to the steel mesh during production meaning only one application of material is required on the slope face rather than first installing an erosion mat, followed by a secondary installation of mesh.

The MacMat HS30 P was connected to the slope using crest ropes secured by soil nails and the face was also further stabilized with a soil nail pattern application. MacMat HS30 P mesh is supplied with specially designed HS links and rope grips to provide the contractor with a complete system approved under ETA n. 16/0758.

Client: Network Rail**Designer / Consultant:** Mott MacDonald**Contractor:** Keller Group Plc**Products used (Qty.)**- Macmat Hs 2600m²**Date of construction:** 10/2022 - 10/2022[Google Maps](#)[Google Earth](#)

Soil nailing of the newly cut rock slope adjacent to the rail line.



MacMat HS30 P being installed on the rock slope.