

KERGORD HVDC CONVERTOR STATION.

Shetlands



TYPE OF PROJECT
Dynamic Rockfall Barriers



YEAR OF CONSTRUCTION
2025



CLIENT
SSEN



PROD. RELATED
**Rockfall Barriers
(340m)**



CONTRACTOR
**Breeze Landscaping
And Plant Hire Ltd On
Behalf Of BAM Nuttal**



DESIGNER
NA

Challenge

The Shetland HVDC link, approved in 2020 after a decade of development, will connect Shetland to the GB transmission system for the first time. This milestone unlocks Shetland's renewable potential, decarbonises its energy supply, and supports future energy needs. Once complete, it will connect the 443MW Viking Wind Farm to the GB grid and play a vital role in achieving net-zero emissions.

To build a 320/132kV substation and HVDC convertor station at Kergord, major bedrock excavation was required, creating a 6m-high exposed rockface of the Weisdale Limestone Member. Several areas showed ravelling, posing a high rockfall risk to personnel working in the storage yard at the toe of the rockface.



Energy dissipating device connected to lateral anchor



Energy dissipating device connected to lateral anchor

Solution

Maccaferri was contacted by local fencing contractor Dave Breeze, on behalf of BAM Nuttall, to provide a low-height barrier system to mitigate this risk. After site assessments, rockface modelling, and trajectory simulations using Rocscience Rocfall 2, the RB35 (35kJ) low energy barrier (LEB) system at 1.35m height was selected as suitable for the site's needs. Maccaferri recommended its Galmac C3 metallic coating to ensure a design life of over 50 years in C3 environmental conditions.

A total of 340m of RB35 was installed around the storage yard in the site's northwest corner.

The RB35 LEB system is available in certified heights of 1.35m and 1.85m, with various corrosion protection levels and foundation options for soil, rock, or concrete. Full-scale dynamic impact testing under EAD 340089-00-0106 guidelines showed the barrier withstood 38kJ impact energy, retained 83.8% of its height, and had a maximum elongation of [1.57m](#).



RB35 NP (no plate) 1.35m high posts set



Double twist interceptor mesh connected



Fully constructed RB35 NP 1.35m high



OPEN GOOGLE MAPS



OPEN GOOGLE EARTH