

Managing Gore Quarry's environmental compliance, blasting efficiencies & costs using EPC Metrics' technological expertise

Project: Guaranteeing Compliance - Gore Quarry

Client: Tarmac Group

Location: Presteigne, Powys, Wales



An operating division of EPC-UK

A quarry with the capacity to deliver aggregates for projects of all sizes, Gore's operation sought to employ increasingly effective drilling and blasting procedures that would secure planning to comply status, streamline waste and reduce costs.

Committed to creating a consistently safe environment for its employees and all individuals with involvement in the business, Gore Quarry worked with EPC-UK and its Metrics team to implement an improved, technologically advanced route to planning regulation compliance.



The project

Tarmac's Gore Quarry in Powys, Wales is a site located close to residential dwellings. As such, it operates with a heightened need for operations to precisely meet all relevant planning restrictions. This has resulted in a significant requirement for blast operations to remain within limits and for a concentrated approach to amending blasting perimeters to be applied.

Through partnership with EPC Metrics, and by utilising the team's technologically advanced prediction tools, signature hole analysis capabilities, metrics applications and specific timing delays, improved processes have been achieved in managing building frequencies and vibration limitations to subsequently deliver optimal rock fragmentation results.



The objectives

- Alter required parameters to assure environmental compliance
- Install additional solar powered fixed remote monitoring units to enable more repeatable and accurate results
- Implement multideck technologies to reduce the Maximum Instantaneous Charge initiated at any one time
- Continually update the quarry's applied regression model to ensure continuous compliance with required planning restrictions
- Provide local residents with monitoring assurances and support public liaison meetings
- Manage blasting cost, blasting performance and compliance allowing quarry reserve extraction
- Assure a safe 'Zero Harm' working environment

Situational challenges

With residential dwellings close by, the quarry operation needed to stipulate blasting parameters that minimised vibration to an acceptable level and still achieve effective rock fragmentation. Too much alteration, or a reduction in the Maximum Instantaneous Charge, could potentially result in insufficient quantities of explosive being used to successfully fragment the rock or enable it to be heaved into an extractable muckpile.

Trust and transparency

Further developing a trusted working relationship with the Tarmac Group, EPC Metrics' collaborative approach has enabled a transparent working partnership to be built at Gore Quarry. The joint commitment of both companies has ensured that all procedural options explored at the site would prove compliant, remain optimal and simultaneously maintain blast performance results.

Implemented technologies

Prediction tools - The regression model created by EPC Metrics using signature hole analysis and continual updates has enabled the latest real geological data to be applied for future blast predictions.

Remote monitoring - Three additional solar powered fixed remote monitoring stations have been installed within the Gore Quarry site. Each is successfully providing immediate access to consistent and accurate event data, including blasting vibration and air over pressure. The stations are enabling the quarry to monitor compliance, whilst allowing the EPC-UK drilling and blasting team to check results and amend parameters for future blasts accordingly.

Blast parameter changes - EPC Metrics' expert knowledge and testing has explored multiple decking, reduced hole diameters, created tighter blast patterns and adjusted timing delays, which combined, have ensured compliance and optimised blasting results.

Consultancy support - The team's technical expertise and equipment knowledge base have brought state-of-the-art digital quarrying practice into the Gore operation, streamlining processes and heightening safety.

Specific timing delays - Electronic detonators have been utilised to control millisecond timing delays, purposefully customised to the Gore Quarry geology so vibration can be minimised and blast performance maximised.

"The compliance improvements delivered within the Gore Quarry have been marked. The skilled processes and technological advancements implemented by EPC Metrics have enabled optimal-level quarry operations to be realised and essential compliances to be assured."



Key results & improvements

- Gore, an aggregates quarry located within close proximity to Dolyhir Quarry.
- Combined, the quarries have a history of mineral extraction, dating back over 100 years.
- Gore is a high production output operation, supplying materials to Presteigne and the surrounding area.
- It is an environmentally compliant site where safe rock reserve extraction has continually been achieved.
- Gore Quarry is a long-term EPC-UK operating partner.



“EPC Metrics’ approach at Gore Quarry has been to work in close partnership with the Tarmac Group and successfully enable compliant blasting and optimal blast performance. Both companies recognise the importance of ensuring environmental compliance, not only for meeting and adhering with council planning limits, but to benefit the wider community.”

Values that define the way we work



Across every operation performed, EPC-UK and the EPC Metrics team apply methods that support the company’s established SPIRIT ethos, demonstrating **safety, passion, integrity, respect, innovation, and teamwork.**

The Gore Quarry ‘Compliance Management’ project presents an illustrative example of how our company’s SPIRIT ethos works in practice.

With **safety** placed as a consistent and paramount priority, technological **innovation** has been integrated across the project, with EPC Metrics demonstrating its **passion** for the improvements that can be achieved using digital quarrying methods. By working with **integrity** and benefitting from the advantages of **teamwork**, EPC Metrics and Gore Quarry personnel have together managed and adhered to compliance limits, whilst **respecting** the concerns and environment of the local community.



Improving operations using digital expertise

Digital quarrying operations are increasingly shaping blasting procedures on an international scale. Collaboratively, EPC-UK and the EPC Metrics team are leading the way towards safer, more efficient practice and blasting techniques.



Find out more

To find out more, scan or click the QR code to watch Dr. Liam Bermingham’s explanatory presentation.

