

Concrete Fracture and Corrosion Monitoring Using Acoustic Emission

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Research and Testing

- Reinforced concrete corrosion and fracture AE signal characterisation
- Attenuation and AE signal propagation studies
- Fatigue and static load tests on dozens of beams
- Corrosion testing of hundreds of samples
- Testing on many different types of concrete mixes with different size bars and cover depths
- Quantification of concrete fracture and corrosion
- Advanced location of active damage including 3D moment tensor location
- Development of monitoring strategies for concrete joints and corrosion testing
- Trial applications on real structures in the UK

The Projects

- Development of commercially viable Acoustic Emission (AE) concrete structure testing technology (Concrete fracture and deterioration, Early stage corrosion damage)
- 12 man years of academic research at Cardiff and Loughborough Universities, UK costing over \$600k USD
- Technology Transfer from Physical Acoustic Nippon – World Leaders in Concrete AE
- Laboratory testing and field trials on bridges, car parks and other structures
- Working with industry and the UK Highways Agency to provide test solutions for Civil Engineers