

# Cumbria flood disaster emergency repair works

Project case study



## Client

Cumbria County Council

## Products

A range of specialist concretes

## Quantity

1100m<sup>3</sup>

## Overview

Structural repair works across Cumbria following flooding in December 2015.



## Hanson UK

14 Castle Hill, Maidenhead, Berkshire SL6 4JJ  
T: 01628 774100

W: [www.hanson.co.uk](http://www.hanson.co.uk)  
E: [enquiries@hanson.com](mailto:enquiries@hanson.com)  
T: [@Hanson\\_UK](https://twitter.com/Hanson_UK)



# Cumbria flood disaster emergency repair works

## Flood repairs

### Project description

A range of specialist concretes was supplied to help repair historic bridges and key tourist routes in Cumbria following the devastation caused by storm Desmond in December 2015. With tourism being a fundamental source of income to the community, particularly in the Lake District, it was essential that this repair work was carried out as quickly and efficiently as possible so that local communities and businesses that rely on the tourist trade could continue to function normally.

Hanson's concrete facility in Carlisle experienced first-hand the destruction of storm Desmond, suffering a six-foot deluge of sewage-contaminated water which destroyed its testing equipment and damaged the electricity within the building. Working around the clock, the company was able to reopen the plant in just two weeks and start work on developing a range of concretes to cater for the challenging repairs required in the county.

Throughout January and February, Hanson's local technical team worked 7 days a week, including night shifts, to test initial setting time patterns and early strength development on a range of exposure classifications with varying cementitious combinations and admixture technologies. This bespoke suite of fast track concretes offered contractors an innovative engineering solution not only to deliver on onerous deadlines but also to improve them.

With no structural specification to work to initially, the technical team designed each mix to meet the most onerous durability conditions, ensuring that when a specification became available most options were covered and they could react quickly. Within the value added engineering concept, a range of 'fast track' concretes, including waterproofing and self-compacting underwater concretes, were developed and available for use by the end of January. These were developed with three and seven day strengths, replacing the usual 28 day characteristic requirement; criteria which would later prove invaluable to the structural engineers in programme planning.



### A591 repair works

Among the large scale repair works was the A591, which connects two of the Lake District's main tourist destinations – Keswick and Grasmere. A section of the road between Thirlmere and Dunmail collapsed requiring significant repairs to a three-mile stretch, including long-term improvements to reduce the risk of future collapse. Work involved stabilising the mountainside as well as repairing retaining structures, drainage, the carriageway and boundary walls.

Following a period of research and discussion with local contractors, Hanson supplied over 250m<sup>3</sup> of bespoke high early strength concrete, underwater self-compacting concrete and combinations of the two to allow follow-on works to be undertaken in the shortest possible time. The £4 million project was planned, designed and delivered in just 156 days; 21 days ahead of schedule.

Mike Rippon, commercial manager at Cubby Construction, commented on the project: "The need for a speedy completion of this contract to the local economy and Cumbria as a whole cannot be stressed strongly enough. Concrete quality and supply was a vital component in meeting tight construction deadlines.

"Better than expected performance from some of the special concrete mixes helped us to pull forward the programme, which contributed to an earlier completion date. Throughout, Hanson's service and

technical expertise in delivering technically challenging concretes – and its overall commitment in going the extra mile for the community – was exemplary."

### Eamont Bridge

The Grade-I listed Eamont Bridge was among many bridges closed due to serious structural damage caused by the floods. It is a key strategic route, carrying traffic from the M6 and A66 to Ullswater and the northern lakes, and its supporting piers suffered significant erosion.

A rapid setting, underwater, self-compacting concrete was needed for the repair, which was pumped into place at a controlled rate to ensure accurate placement and minimal disruption to the river Eden.

Matt Healy, contracts manager at Metcalfe Plant Hire said: "Without the help, technical knowledge and overall service provided from Hanson, we would not have been able to complete the works ahead of programme. Restoring structural integrity to Eamont Bridge was critical in reconnecting both local and main Lake District tourist routes in time for the Easter holiday period.

"We were very impressed by the level of technical input Hanson gave us to deliver a difficult and testing engineering solution to a very complex project. The team's overall level of customer service, from the mix design conception to contract completion, was truly outstanding."