

Diagnosis and surveying of concrete bridges and masonry structures

Over the last twenty years, concrete repair technicians from Larsen Contracts have worked with consulting engineers on the investigation and diagnosis of defects in reinforced concrete bridge structures, primarily managed by the Roads Service or the National Roads Authority, from firms such as:

- WS Atkins
- Doran Consulting
- ESB International
- RPS Consulting

Staff experienced in performing concrete repairs were utilised to perform the fieldwork for assessments of major bridge structures across the M1 to masonry structures on minor roads throughout Ireland. Larsen Contracts collates results from non-destructive tests, in conjunction with specialist testing houses, such as:

- Examining exposed concrete and hammer testing cracks to identify the extent of the defects.
- Covermeter surveys to establish the depth of concrete cover to the reinforcement,
- Carbonation and chloride testing,
- "Half Cell" tests to determine the electrical potential of embedded reinforcement which indicates the approximate degree of corrosion,
- "Pull-off" tests and core samples,
- Photographs to provide visual record of the inspection works,



as well as destructive tests such as taking steel samples for yield tests. For each structure, the remit of Larsen Contracts included any opening up works as well as full reinstatement of the site at the end of the survey. Reports providing a factual record of onsite conditions with test results were submitted to aid planning and budgeting of maintenance works for remedial works.

Over this period, Larsen Contracts were successful in being awarded some of the concrete repair remedial works projects to include:

- M1 bridges at Ballyskeagh and Dunmurry,
- Measured term work on masonry arch bridges for the Roads Service,
- Belfast Foreshore bridges for Farrans Construction,
- The rehabilitation of the road bridges leading to Poulaphouca reservoir in Wicklow,
- Horse Leap Rail Bridge,
- Malahide rail station road bridge,
- Aghada Road Bridge, Whitegate, Co.Cork