Investigations/RepairAdvisoryServices/LifeCycleCosting/TechnicallyLedProjectManagement

Investigation/RepairAdvisoryServices

Project Profile

Evaluation of Crack Lines on a newly cast Concrete Reactor and its impact on the Structural & Durability aspects

Introduction

Crack lines appeared on the surface within a day after a concrete reactor foundation was cast. Ascent Facilities Engineering Pte Ltd was engaged to investigate and evaluate the extent of crack lines and to provide recommendations for its repair.

Work Executed

The crack lines were mapped to study the pattern of the cracks. Next, core samples were marked for extraction of concrete samples; the purposes were (a) to determine the depth of the penetration of the crack line and (b) to obtain core cylinders for compressive strength. The findings indicated that the depth of penetration was less than 70mm and the core cylinders had comparable strengths to the cube compressive strengths. The results showed that there was no adverse impact on the structural and durability aspects of the concrete foundation. The method of repair using epoxy resin injection was proposed and the method statement prepared for the repairs.

Outcome

The independence of investigation, testing and advice provided by Ascent Facilities Engineering Pte Ltd to the various parties to the contract allowed the works to progress objectively with the assurance that the works were independently checked and the rectification works signed off for accountability purposes.

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