

## Master thesis

### ***Tests on high-strength direct nail fixings in fiber reinforced concrete***



In the construction industry, high-strength direct nail fixings have been widely used to fasten different components in concrete structures. However, due to the brittle nature of concrete, the failure of these fixings often occurs, resulting in safety hazards and costly repairs. These challenges may be overcome by the use of fibre concrete, which is gaining popularity in the industry. In this context, this thesis aims to investigate the performance of direct fixings in fiber reinforced concrete (FRC).

Objectives:

The primary objectives of this thesis are:

- To perform experimental tests on high-strength direct nail fixings in FRC and investigate their behavior for different nail types and fibre reinforcement quotas
- To statistically evaluate and compare the distributions of the tests as regards their resistance characteristic values and overall probability characteristics of the setting and pull-out performance
- To propose design values for the safe and efficient use of high-strength direct nail fixings in FRC.

This thesis offers an exciting opportunity for a student to conduct experimental investigations and quality statistics on the performance of direct fixings in FRC. The student will have the opportunity to work on a practical problem and contribute to the development of safe and efficient construction practices. This thesis is expected to provide valuable information for the construction industry and pave the way for future research in this field.

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