



## CASE STUDY



### Overview

As the term indicates, jacketing is the process whereby a section of an existing structural member is restored to original dimensions or increased in size by encasement using suitable material like micro concrete.

This technique of column jacketing improves and restores the capacity of the reinforced concrete column. The column jacketing for RCC columns helps to increase the load-bearing capacity. Column jacketing improves the axial and shear strength of columns.

Concrete jacketing shields the concrete against deterioration and nourishes its strength capacity.

Advantages of the column jacketing with micro concrete include high early and ultimate strength, durability, appearance, protection of steel, increase the column's shear capacity, preventing of shrinkage in the plastic stage due to gaseous properties and increases its flexural strength.

### Project Details

**Private Villa at 18 Nov Street – Muscat Oman**

**Number of Columns:** 30

**System :** Micro Concrete from Fosroc

**Client :** Private Client

**Structural Consultant :** Al Amana

**Product :** Fosroc Rendroc LA Extra

Concrete Repair / Jacketing

Completed a project in Muscat Oman where the client wanted to raise his existing structure and needed to strengthen the existing 30 columns as the extra floors being added to the building were not part of the initial design.



## Work Process

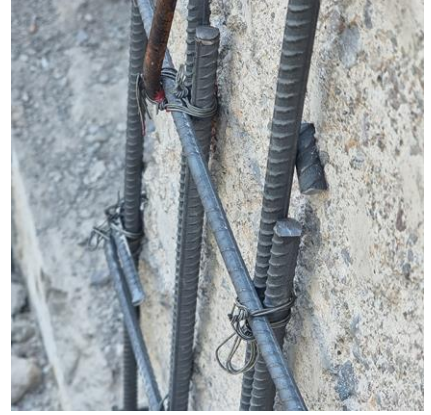
- Remove entire plaster to reach parent concrete surface if the beam is plaster.
- By tapping with a light hammer, identify if loose concrete portions are present. After identifying and marking, remove loose/bad concrete if any by using breaker machine attached with a suitable chisel.
- The concrete surface sounds will be clean of any loose particles, dust, oil etc.
- Required diameter holes should be drilled in the beam concrete staggered manner or as per drawing provided by the structural engineer.
- Holes will be clean using air blower and steel reinforcement bars to fix using high-performance resinous fixing and anchoring compound.
- Make shuttering ply according to the size of the jacket.
- Build a bird's beak on top of the shutter to facilitate the pouring of micro concrete.
- Place and fix formwork around the beam keeping in mind the required thickness of the jacketing.
- Before pouring of Micro concrete make the surface pre-wet by spraying water.
- Make formwork joint to be watertight using foam or sealant.
- Single component readymade Micro concrete Rendroc LA Extra from Fosroc in 25 kg bag to emptied in a mixer. Mixing is done for 3 to 4 min as per the manufacturer's instruction.
- Pour the micro concrete manually to form-work.
- Remove after 12 to 16 hours / next day and column to covered immediately with hessian cloth and sprinkled with water for curing.

## Solutions



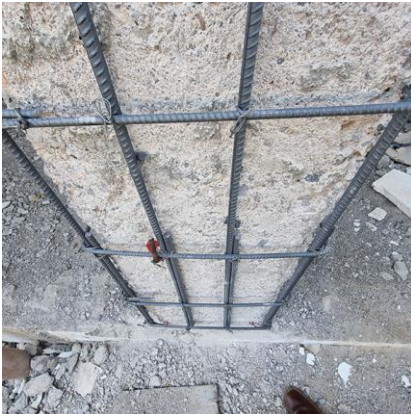
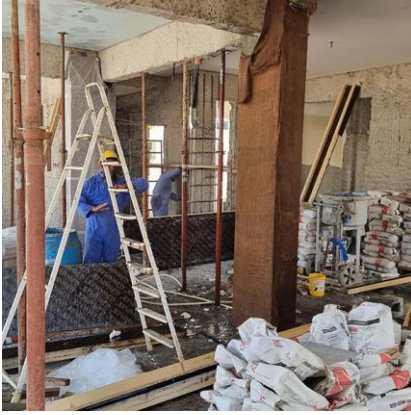


**Photos**





## Photos



## Conclusion

Project was completed as per schedule provided to the Client. Restoration of the beams in the project was in the scope of the main contractor.

Fosroc and Al Amana provided all the technical support required for the project. The drawings and load calculations were done by structural engineer from Al Aman. Material were delivered on time to meet the project requirements and schedule.

Abu Anas Team were trained and certified to carry out the application by Fosroc. On completion the Client, Fosroc and Al Amana approved and appreciated the works carried out.

We are well equipped with the tools and skilled manpower to carry out such projects so if you have any restoration / Jacketing works in your upcoming project, contact us at [www.abuanas.om](http://www.abuanas.om) / [info@abuanas.om](mailto:info@abuanas.om) or call us at 00968 91145302.

