

FIELD INVESTIGATION OF THE VARIATION
OF CONCRETE STRENGTH USING THE
SCHMIT HAMMER

Project Report Submitted by:

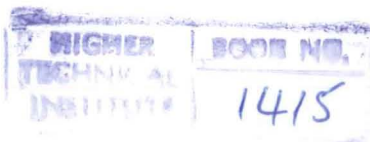
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S U M M A R Y :

This project deals with only one and very important property of concrete, and that is STRENGTH.

The concrete strength of a three storey building has been tested with the aid of a non-destructive method the SCHMIT HAMMER. The building's concrete strength was examined to check if it was within the specified standards that a safe design demanded. These tests were carried out on the three basic parts of the structure i.e. Slabs, Beams, and Columns. (Measurements were taken for all different points of the part tested e.g. For beams values were taken from the middle and from below.)

In the beginning of the project notes are given concerning strength as related to specifications and strength as related to the limit state design. Then Determination of strength follows i.e. how strength was considered as safe in the past and how in nowadays.

The factors which concern strength in a concrete mix are discussed. I.e. water/cement ratio, gel-space ratio, porosity, compaction, influence of coarse aggregates in the mix, etc.

Then a detailed explanation of the Schmit hammer is given including usage, maintenance etc.

Then the tables of the results are given together with graphs that came out when calibration of the instrument took place.

Finally the conclusions are given accompanied with comments.

The final results have shown that the building under testing is above the required standards and that it sufficiently satisfies the requirements of safe design.

C O N T E N T S :

1. A C K N O W L E D G E M E N T S .
2. S U M M A R Y .
3. I N T R O D U C T I O N .
4. M A I N B O D Y .
 - I. Strength and specification.
 - II. Strength and limit state design .
 - III. Determination of strength.
 - IV. Factors affecting strength.
 - V. General information about the Schmit Hammer.
 - VI. Tables of results.
 - VII. Graphs of results.
5. C O N C L U S I O N S .