

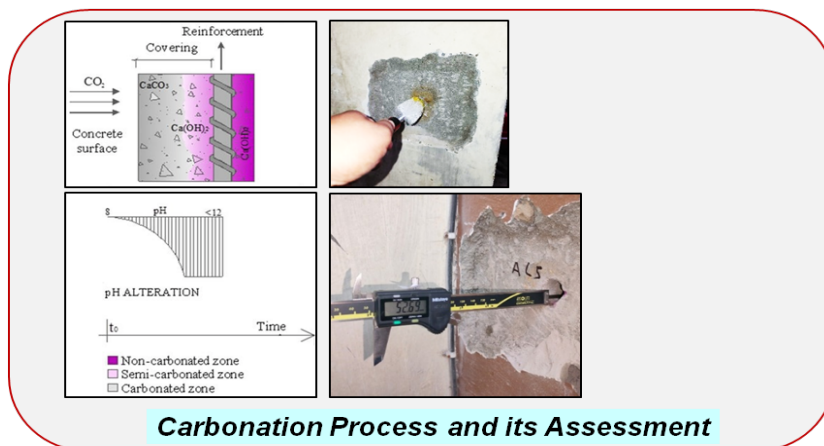
Rapid Onsite Concrete Carbonation Depth Assessment Method for Quality Evaluation

Technology in Brief

Carbonation reduces the natural alkalinity of concrete that acts as a passive layer and protects the reinforcing steel from corrosion. Once this layer is destroyed, rusting of steel bars with subsequent expansion takes place and durability of concrete decreases significantly. It is frequently observed in buildings and structures exposed to moisture, rainfall, and sunlight-shaded areas. The concrete carbonation test, conducted on-site, assesses the extent of carbonation in concrete. The widely adopted technique for determining concrete carbonation depth is the phenolphthalein indicator method. The conventional method involves the application of a phenolphthalein solution on surface of concrete during core samples extraction. This is a highly intrusive, time consuming, costly and skilled process. The developed technology is simple, fast, cost-effective, easy to execute, less intrusive and there is no waiting time unlike core extraction where the core sample/core hole has to dry up before application of phenolphthalein. This onsite assessment method is required to help in more efficient quality evaluation of concrete.

Salient features/Advantages

- Onsite assessment allows for immediate feedback on concrete quality, facilitating informed decisions about repairs and maintenance.
- Onsite carbonation depth assessment provides a valuable tool for quality control during concrete construction and maintenance.
- By identifying carbonation early, potential problems with concrete durability and reinforcement corrosion can be addressed before they become severe.



End Product(s)	Rapid Carbonation Assessment for Quality Evaluation of Reinforced Concrete Structures
License/Commercialization	1) M/s Aayka Water proofers Pvt. Ltd., 2) M/s Rebuild Technologies Services Pvt. Ltd., 3) M/s Globe Consultant Pvt. Ltd., 4) M/s Vijna Consulting Engineering. Pvt. Ltd.,
TRL	07
Environmental Impact	No adverse impact
Setup - Equipment required	Standard drilling/measuring tools.