

Project PI:	Rajesh Kumar
Project Title:	Comprehensive Assessment of Crystalline Waterproofing Admixtures for sustainable and Long- Lasting Concrete Infrastructure
Name of Client:	M/s. Penetron India Pvt. Ltd., A-13, Balaji Indus Park, Behind Hindalco, Tondre Vill Taloja Panvel, Raigad, Maharashtra- 410 206
Objectives:	<ol style="list-style-type: none"> 1. Study the performance of crystalline waterproofing and durability enhancing admixtures in concrete through microstructural studies (SEM, XRD, PSD) 2. To investigate the influence of admixture dosage on mechanical properties (compressive strength), dimensional stability (drying shrinkage), and durability aspects 3. To evaluate the self-crack healing capability of crystalline admixture in concrete for cracks up to 0.5 mm width using optical Microscopy and Ultrasonic Pulse Velocity methods 4. To analyze the effectiveness of admixtures in reducing permeability and water ingress by conducting depth of penetration tests under different hydrostatic pressures and studying reduction in chloride ion migration 5. To determine the effect of the crystalline admixture on concrete permeability by measuring the depth of water penetration under normal and high hydrostatic pressure at three different water-cement ratios 6. To establish the mechanisms responsible for self-crack healing, shrinkage reduction, and durability enhancement in concrete modified with crystalline waterproofing admixtures.