



# EXTENDING THE SERVICE LIFE OF BRIDGES AND INFRASTRUCTURE THROUGH SUSTAINABLE CONCRETE PROTECTION

Bridges, flyovers, metro structures, as well as transport infrastructure and buildings are continuously exposed to UV radiation, driving rain, chlorides, carbonation, pollution, and thermal movement. In such environments, surface deterioration is not a cosmetic concern—it is the first trigger of durability loss and reinforcement corrosion. Yet, façade and surface protection of infrastructure is often treated as a paint decision, rather than a durability intervention. For long-span bridges, elevated corridors, and urban infrastructure, sustainability begins with a simple question: How do we delay deterioration and avoid premature repair?

## WHY SURFACE PROTECTION IS A SUSTAINABILITY ISSUE

Every instance of early concrete repair carries a high environmental cost—cement consumption, energy use, traffic disruptions, material waste, and carbon emissions. Water ingress, carbonation, and chloride penetration accelerate reinforcement corrosion, leading to:

- Spalling and section loss
- Frequent patch repairs
- Shortened design life
- Increased lifecycle carbon footprint

A well-designed anti-carbonation, breathable, crack-bridging protective coating directly addresses these mechanisms—making it one of the most cost-effective and sustainable durability strategies for infrastructure and buildings.

## FROM PAINTING TO HIGH - PERFORMANCE PROTECTION

**Assess Build Chem Private Limited** approaches infrastructure protection with a system-driven mindset. With over four decades of experience in

concrete technology and construction chemicals, the company designs performance-based protection systems, not decorative finishes. One such flagship solution for bridges and exposed concrete infrastructure is:

**SS – PROTECTOCON AC:** An Elastic, Breathable, Waterproof, Crack Bridging, Anti-Carbonation Protection for Concrete Infrastructure and Buildings

**SS – ProtectoCon AC** is a high-performance elastic-elastomeric acrylic coating engineered specifically for long-term protection of RCC structures above ground and above tidal / splash zones. Unlike conventional exterior coatings, it is designed to control the fundamental deterioration mechanisms of concrete.

## ENGINEERED FOR INFRASTRUCTURE IN CHALLENGING ENVIRONMENTS

Based on advanced acrylic polymer technology and mineral fillers, **SS – ProtectoCon AC** delivers a combination of properties critical for infrastructure sustainability:

- Waterproofing against rain and driving moisture
- Very high resistance to CO<sub>2</sub> diffusion (anti-carbonation)
- Low resistance to water vapour diffusion (breathable coating)
- Crack-bridging capacity > 2.5 mm, accommodating thermal and shrinkage movement
- UV stability with no colour degradation, even under prolonged exposure
- Resistance to chlorides, pollution, soot, and salt spray

The coating meets Anti-Carbonation Coating requirements as per IRC SP:80 and MoRTH “Orange Book”, making it particularly relevant for bridges, flyovers, and transport infrastructure.



## WHERE SS – PROTECTOCON AC ADDS VALUE FOR RCC STRUCTURES

**SS – ProtectoCon AC** is ideally suited for:

- Bridge piers and substructures above the tidal or splash zone
- Superstructures, girders, crash barriers, parapets
- Flyovers, ROB, and metro viaducts
- RCC chimneys, cooling towers, and industrial stacks
- Repaired concrete surfaces with hairline cracking
- Buildings, Exterior Protection for Elevated Water Tanks, Cooling Towers and Chimneys and much more.

It is equally effective for new structures as a preventive durability layer and for existing structures as part of repair and rehabilitation strategies.

## SUSTAINABILITY THROUGH SERVICE LIFE EXTENSION

**SS – ProtectoCon AC** contributes directly to infrastructure sustainability by:

- ✓ Reducing carbonation-induced corrosion, thereby extending reinforcement life
- ✓ Minimising water ingress, which limits freeze-thaw and chemical attack
- ✓ Bridging cracks, reducing the need for repetitive surface repairs
- ✓ Lowering maintenance frequency, cutting lifecycle costs and emissions
- ✓ Avoiding premature rehabilitation, saving embodied

carbon in concrete and steel

By extending the functional service life of concrete structures, the coating aligns strongly with the principles of sustainable infrastructure and asset management. Additionally, the coating is solvent-free, low VOC, and environmentally responsible, supporting green construction objectives without compromising performance.

## PRACTICALITY FOR LARGE - SCALE INFRASTRUCTURE

**SS – ProtectoCon AC** is applied by brush, roller, or airless spray, making it suitable for:

- Large surface areas
- Vertical and overhead concrete elements
- Complex geometries typical of bridge structures

It remains robust under varying site conditions, tolerates slightly moist substrates (non-saturated), and integrates seamlessly with polymer-modified repair mortars and rehabilitation systems.

## ASSESS BUILD CHEM: PARTNERING IN DURABILITY-LED DESIGN

Established in 1994, Assess Build Chem Private Limited is an ISO 9001:2015 certified

construction chemical manufacturer offering solutions across:

- Waterproofing and concrete protection
- Repair and rehabilitation
- Admixtures and dry-mix mortars
- Infrastructure, water, energy, industrial, and heritage sectors

Owner-managed and technically driven, the company is known for fast decision-making, system-based solutions, and hands-on technical support—critical attributes in complex infrastructure projects. Through integrated materials, methodology, and trained applicator networks, Assess Build Chem helps asset owners and engineers move from reactive repair to proactive durability management.

## SUSTAINABILITY BEGINS WITH PROTECTION

For bridges, buildings and infrastructure, sustainability is not achieved by replacing structures—it is achieved by preserving them intelligently. **SS – ProtectoCon AC** is not a paint. It is a durability intervention that protects concrete, steel, and the environment—all at once.

*For Technical Data, Specifications & Infrastructure Applications:*

**Assess Build Chem Private Limited**

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