




Markolines Pavement Technologies Limited
(Formerly Markolines Traffic Controls Limited)

Markolines Infra Private Limited

Markolines Technologies Private Limited

**Say hello
to unlimited possibilities.**

Get in touch with us at:

 6th Floor, Wing-A, Shree Nand Dham, Sector 11,
CBD Belapur, Navi Mumbai-400614 Maharashtra, India

 +91 22-6266 1111 (30 Lines)

 info@markolines.com

**Paving the path
towards an
innovative future**

WWW.MARKOLINES.COM

Transformation through experience

Transformation is the key to continual growth of a company. It emerges from an in-depth understanding of its client's business, trust in teamwork and a keen eye to tap opportunities for tomorrow. Markolines is committed to transformation at every turn, and works with an innovative approach that is in tune with the global dynamics. We develop efficient solutions in operating and maintaining infrastructure assets for its clients.

Based in Mumbai, Markolines is a group of companies with expertise in offering superior services primarily in Highway Operations & Maintenance (O&M). Our offerings also include expert consulting for the latest technology driven to improve asset performance and client experience.

In over a decade and a half, we have transitioned from a single product company to a multi-product company and aspire to be a pioneer of transformation in Highway Operations & Maintenance (O&M). Going forward, we aim to consistently venture into new markets and other infra sectors, keeping sustainability and safety at the heart of everything we do.

Our journey





On the highway towards future

Mission

Markolines endeavours to enhance its potential of innovation, quality and speed to be the most trusted and reliable O&M company. We aspire to serve people across the world by expanding boundaries of possibilities and delivering efficient solutions for infrastructure needs, staying focused on sustainability and safety at all times. We apply superior O&M services to manage high-quality infrastructure through highly skilled resources and innovative technology.

Vision

Markolines strives to be at the prime position for Highway O&M Service through cutting edge technology and execution excellence. We pledge to uphold the values of honesty, transparency and integrity at every step of our journey towards a better future. We are paving the path towards unlimited possibilities to develop into an Indian MNC to deliver high-quality solutions for managing and operating infrastructure assets.

Core Values

OUR FOUNDATION IS ROOTED IN THE VALUES THAT GUIDE US THROUGH OUR JOURNEY TOWARDS SUCCESS.

01 FOR THE COMPANY

Markolines is driven by innovation to derive out-of-the-box solutions. We understand the unique needs of our customers and offer reliable services.

02 FOR THE TEAM

We nurture a sense of equality among our team members and offer them ample opportunities to pursue their passion and grow.

03 FOR THE CUSTOMERS

We are committed to surpass customer expectation and achieve customer loyalty with our excellent services delivered on schedule.

We adhere strictly to ethical practices to aim for 100% customer satisfaction, with integrity.



CORE PURPOSE

MARKOLINES ASPIRES TO BE A LEADER IN THE INDUSTRY TO:

- L**everage its domain expertise
- E**nhance creativity, sense of leadership and worthiness
- A**im to be an Indian MNC
- D**eliver quality products and services
- E**co-friendly technology usage
- R**etain commitment to clients & employees

Services

Roads make a crucial contribution to economic development and growth of a nation. Well-maintained roads bring vital social benefits like providing access to employment. India's ever-widening web of roads needs smooth operation and superior maintenance, and we are here to contribute to it by offering effective and efficient management solutions in Highway Operations, Highway Maintenance, Consultancy Services and Equipment Sales.

We adopt a customer-focused approach, committed to delivering a service that directly addresses the needs of our clients and the society we work in. Our unrelenting drive to improve and our unwavering commitment towards providing our clients with best-in-class services through focus on integrity, dedication and ethics fuels our success. Our professional and dedicated team is led by commitment to deliver the best and become the most preferred company in the sector. As we move forward, we continue to keep health, safety, security and environment at the core – and these are the tenets that we do not compromise on at any time.



Highway Operations



Highway Maintenance

Specialised Maintenance Services



Microsurfacing

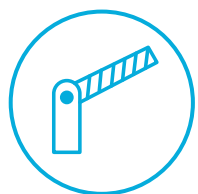


Cold-In-Place Recycling



Highway Operations

Highways are the vital roads that connect various regions. A perfectly running highway network is one which is well-managed and operated to deliver a safe and comfortable ride to the commuter. We offer a gamut of services to improve the performance of Highway Operations. Our solutions are designed to relieve vehicular congestion, maximise safety and boost the mobility of personal and commercial vehicles. We aspire to deliver a system that is safe, accessible and easy to navigate. Our excellent regional & cultural understanding and the contingency & risk management puts us ahead of the competition.



Toll Operations

Our team's prime objective is to collect maximum revenue by catering to maximum traffic and avoid leakages by minimising exemptions and violations. Markolines regularly imparts soft skills and toll operations training to Toll Staffers to boost efficiency and save time. All our toll operations services are designed considering aspects like safety, effective traffic management and minimum vehicle processing time.



The activities we cover under Toll Operations:

- Traffic Management
- Revenue Management
- Tolling Strategy Studies
- Staff Recruitment and Training
- Surveillance and Audit Systems
- Housekeeping Service
- MIS Reporting



Route Patrolling

Keeping the routes safe and obstruction-free is a vital aspect of highway operations. With the motto of prevention is better than cure, Markolines Route Patrolling Services ensure that the Highway is under round-the-clock surveillance. Our team rigorously monitors the route for encroachments, blockages, and unlawful activities. We keep an eye for any condition that can potentially disrupt services and takes adequate measures to limit and eliminate the impact. Moreover, Control Rooms manned by experienced personnel help in quick assessment of situations based on the inputs provided by our Route Patrolling Team, to avert major disruption. This helps them alert the Incident Management Team for timely action.



Under Route patrolling, our services include:

- Highway Patrol
- Control Room & HTMS Operations
- Prevention & Removal of Obstruction / encroachment along the corridor
- Highway Asset Monitoring and Reporting
- Security Service



Incident Management

Our Incident Management team undergoes special training to handle any untoward incident that may occur on the routes and manage it in a safe and satisfactory manner till the end. Our team attends to the incident scene in a minimal time frame and tries to restore the flow of traffic at the earliest. We provide emergency medical aid and immediate evacuation of the injured to a nearby hospital. The team also safeguards personal property, conducts accident investigations and supervises scene clearance. Our Incident Management method reduces the effects of incident-related congestion by decreasing the time to detect incidents, arrival of emergency vehicles, and resuming smooth traffic movements.



Under Incident Management our services include:

- Accident Management
- Ambulance Service Management
- Crane Service Management
- Fire Fighting Service Management



Highway Maintenance

Highways are lifelines of a nation, it is crucial to keep these in good working condition. Markolines provides a suite of maintenance services to address diverse road conditions. Weather, traffic volume and geographical conditions often impact the roads and it is important to take these factors into consideration while arriving at the right treatment. Our team of experts is experienced to handle repairs, replacements and maintenance projects, and is guided by the tenets of health, safety, security and environment (HSSE). We are updated with knowledge on the latest trends and technologies and implement the same on our site to deliver an improved solution.



Routine Maintenance

Efficient routine maintenance keeps the road in good condition all the time and makes journeys more safe and pleasant. We take responsibility to maintain and enhance the aesthetic appeal of highways regularly by keeping it neat and operational at all times. By maintaining these vital resources, we enable convenient travel along the route. Our commitment to enhancing the travel experience for all, correct assessment of road conditions and timely action makes us a preferred partner.



Services managed under Routine Maintenance:

- Corridor cleaning
- Horticulture: Watering and Maintenance of median and avenue plantation
- Highway Structures (Drain Construction, Culvert Construction etc.) and Asset Cleaning.
- Repair and Rectification of highway assets
- Electrical Equipment Maintenance



Preventive Maintenance

Preventive maintenance is performed in response to triggers of deteriorating road condition that requires action before the problem gets out of hand (e.g. Microsurfacing, crack sealing, pothole patching, Rut Filling etc). Our team is well-equipped and trained to perform the various Preventive or specialised activities such as microsurfacing

Roads are among the most important public assets involving massive investment. We help keep the roads to the extent possible in its original condition, thus preserving the investments made on road assets.



Services managed under Preventive Maintenance:

- Microsurfacing
- Crack Sealing
- Slurry Sealing
- Fog Sealing
- Pothole Filling
- Patch Repairing
- Rut Filling



Major Maintenance and Repairs

We undertake major maintenance and repairs of highways which covers rehabilitation, renewal or resurfacing of the assets. The complex nature of these projects involves temporary road closures and diversion during the works. Such maintenance project requires accurate planning of resources, adequate safety arrangements, advanced machinery, proper coordination, faster turnaround time and seamless traffic management. Under Major Maintenance our team designs tailor-made plans for each project and follows stringent time lines to minimise disruption time.

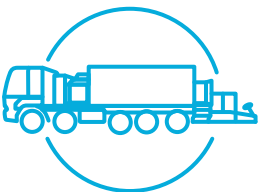


Our Major Maintenance activities involve:

- Pavement Milling
- Bituminous Overlay/ Resurfacing
- Cold - In - Place Recycling (CIPR)
- Repair and Rehabilitation of Pavement
- Repair/Replacement of Road Furniture like MBCB, RPM, Blinkers, and Pavement Markings etc.



Microsurfacing



Microsurfacing

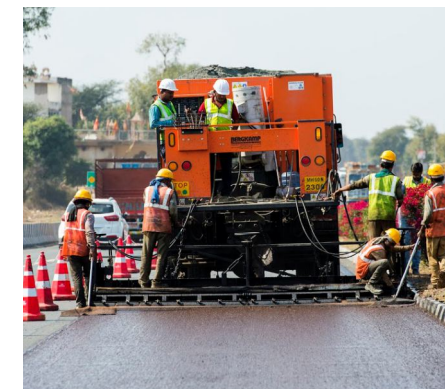
At Markolines, we always strive to adopt new technology in pavement preservation. In a short span, we have gained remarkable insights and experience in this activity. Microsurfacing treatment used to restore and preserve the surface characteristics of the road. It is a mix of polymer modified asphalt emulsion, graded aggregate, cement, water and additives. When applied in a semi-liquid condition with specialised paving equipment, it changes chemically and sets quickly. As a result, it gives a uniform coat of cold mix dense material that allows lesser downtime, resuming traffic within two hours of laying. It is Green Technology for pavement preservation. By using glass fibres in Microsurfacing, we have introduced the next generation known as Microsurfacing with Suspended Fibre Technology (MS - SFT) for the first time in India.

Moreover, as a step ahead Markolines has set up an exclusive Technology Centre. Our execution team works in consultation with the technical team to arrive at the right job mix design of microsurfacing layer. The Technology Centre supports the execution team to provide the precise technical needs of a project considering the vital aspects like condition of road, resources available & environment and delivers tailor-made solutions –making us the #1 in Microsurfacing in India.

Advantages

- Quick Application with minimum traffic disruption and traffic opens in max 2 hrs, causes minimum traffic disruption. Night placement is possible.
- Cost effective as compared to traditional methods and it extends the life span of the road
- Rectifies surface defects and Ruts including minor cracks, hungry surface due to ageing & surface oxidation
- Environment friendly, non- polluting for environment since no heating or hot paving required
- Restores surface structure, slows the age hardening in the original road surface
- Provides new wearing surface.
- No compaction required
- Seals the surface and prevents ingress of water
- Does not increase pavement height significantly (Road furniture, drainage is not disturbed)
- Saving of natural resources

Microsurfacing is a pavement preservation technology, which is relatively new in India. It is a cost -effective treatment for preservation and extension of life of the road. Microsurfacing was pioneered in Germany in late1960's, due to its several advantages it is now used extensively in USA, Europe, Australia and is making inroads in many developing countries. Experts say, workmanship is crucial in determining the success of Microsurfacing. Our paver operators and crew are well-trained and experienced for this activity. Our experienced technical team and exclusive Technology Centre guides the execution team to ensure the highest standard is achieved.



Our expertise in Microsurfacing:

- Own fleet of Microsurfacing Pavers
- Adherence to World-class Standards of Quality
- Captive Technology Centre for QA/QC
- Tie-ups with international organisations for
 - Pavers and allied machinery
 - Surface Treatment Chemicals
 - Glass fiber and composite glass grids
 - Antiskid runway treatments and grouting chemical
 - Safety Management and Project Advisory

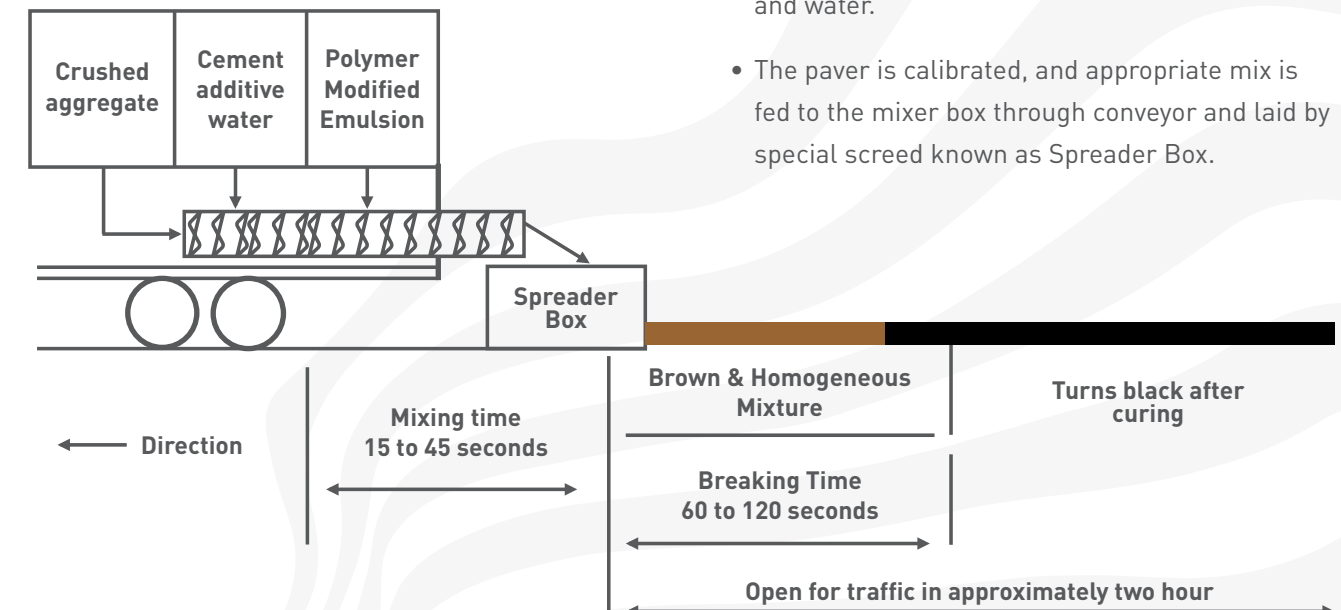
Application Methodology

Prerequisite:

- Structurally strong base
- Clean surface to ensure its free of dust and soil etc.
- Fill pot holes, cracks and Ruts.

Process

- Applied with a specially designed self-propelled truck mounted machine with bins for aggregate, cement additive and polymer-based emulsion and water.
- The paver is calibrated, and appropriate mix is fed to the mixer box through conveyor and laid by special screed known as Spreader Box.





Cold-In-Place Recycling

Cold-in-Place Recycling (CIPR)

CIPR involves removing and reusing the existing asphalt surface. It involves grinding off the top layer (up to 200mm) of the existing asphalt surface and mixing the crushed asphalt with foamed bitumen and placing it back down with a recycler and allied machinery. Our team of experts can undertake this complex and specialized activity.

As described in the ARRA (Asphalt Recycling and reclaiming Association) Basic Asphalt Recycling Manual, CIR “consists of recycling asphalt pavement without the application of heat during the recycling process to produce a rehabilitated pavement.

The cold-in-place process is typically performed using a “train” of equipment, which includes a water tanker, bitumen tanker, recycler, graders and rollers. We own the complete set of machinery used in the Cold-in-Place Recycling (CIPR) process.

CIPR can correct deep asphalt defects such as rutting, fatigue (alligator) cracking, and utility cuts that cannot be addressed by a surface treatment or an overlay, and allows minor corrections to the profile of a road surface, reduces reflective cracking, and results in a minor inconvenience to traffic.

Advantages of Cold-In-Place Recycling:

- CIPR overlay lasts 10-15 years as compared to 5-8 years of traditional overlay (Subject to traffic and overloading)
- Shorter construction period, due to high production capacity of recycling machines
- Cost effective due to reuse as well as on site execution.
- Conserves raw materials and natural Resources.
- Conserves energy
- Reduces greenhouse gas emissions
- Work is performed with minimal traffic disruption



Thousands of new road kilometers are needed and will be built over the next years to expand the network of traffic arteries in the booming economy. This requires fast-paced, reliable and economical construction processes. At the same time for the existing roads, the sub-base of roads exposed to major stresses due to heavy goods traffic is often damaged. To remedy this damage, the complete road structure must be repaired.

Cold-In-Place-Recycling (CIPR) and Soil stabilization is the best solution and meet both these requirements. It has become a standard construction method on large-scale construction projects around the world. As part of pavement rehabilitation services, we undertake Cold-in-Place Recycling (CIPR)

Soil Stabilization converts ground of insufficient bearing capacity into soil that is highly suitable for construction of roads, airports, ports, and factories. This improves the bearing capacity, Volume stability and the Resistance to water of the existing ground, which later forms the backbone of the new base strengthening the road pavements.

Lime Treatment reduces the soil moisture content (Drying). It reduces the plasticity of soil by aiding the compaction (Modification) and Increasing early strength (Modification). It also increases the long-term strength of soil by reducing its swell potential (Stabilization).

The permeability of cement-stabilized material is greatly reduced. The result is a moisture-resistant material that is highly durable and resistant to leaching over the long term. Cement-soil Stabilization is another technique, Where Portland cement can be used to stabilize and strengthen certain type of soils.

Advantages of Soil Stabilization:

- Higher resistance (R) values
- Reduction in plasticity
- Lower permeability
- Reduction of pavement thickness
- Elimination of excavation, exporting unsuitable material and importing new materials Aids compaction

Recycling with pre-spread cement and bitumen



Binder spreader



Water tanker truck



Bitumen tanker truck



Recycler



Pad Foot Roller +
Single-drum comp



Grader



Pneumatic-Tyred roller



Legacy of change

Our commitment to excellence has brought us far in the area of managing infrastructure assets. Even as we have delivered value to our clients, in the form of dependable services, we have built unmatched strengths within the organisation. With each challenge, we have emerged stronger and more resilient to take on greater projects. The journey so far has filled us with pride and fulfilment.

A Powerful Heritage

Founded in 2002

with single product:
Road Marking

Transformed into
**India's Largest
O&M Company**
in highway sector

Operated
Highest
number of outsourced
Toll Projects

Vision:
To Be A Leading
INDIAN MNC
in Highway O&M

PAN India
presence

Only Company in India with a
Technology Centre
for pavement preservation

Complete setup of
**Self-Owned
Machinery**

Every Achievement Matters

We have built Markolines on the pillars of passion, excellence and commitment. Every project completed is a step forward in understanding our client's requirement, precise implementation and satisfaction for our client. That is why, though we are proud of the amount and range of work we have done over the years, we uphold the quality of what we do with greater integrity and commitment.

Our Story Beyond Numbers

Experience of managing
25,900+
Lane Kms

Rs. 8,500+ Cr
of toll collected till date

3,29,000
Vehicles
processed per day

Workforce
of **3000+** Families

74 Lakh Sqm
Of Microsurfacing work in
India

197.52 Lane Kms
Highest CIPR Experience in
India

Ready for tomorrow

Buoyed by a winning culture assimilated over the years, Markolines is ready to enhance the way infrastructure assets work. We aim to utilise our competitive advantage to proactively assess clients' needs and deliver efficient solutions, going forward. We aim to enhance our potential by applying our expertise and skills to reinvent services. All this, as we pave the way forward with favourable prospects to offer expert services in emerging global markets.

Winning culture to take us forward

Excellent
Regional & cultural
understanding

Efficient
Contingency & Risk
management

Customer Centric and Proactive
approach

Strong, Experienced & Integral
Executive Team

Strict adherence to
SOPs and Ethical practices

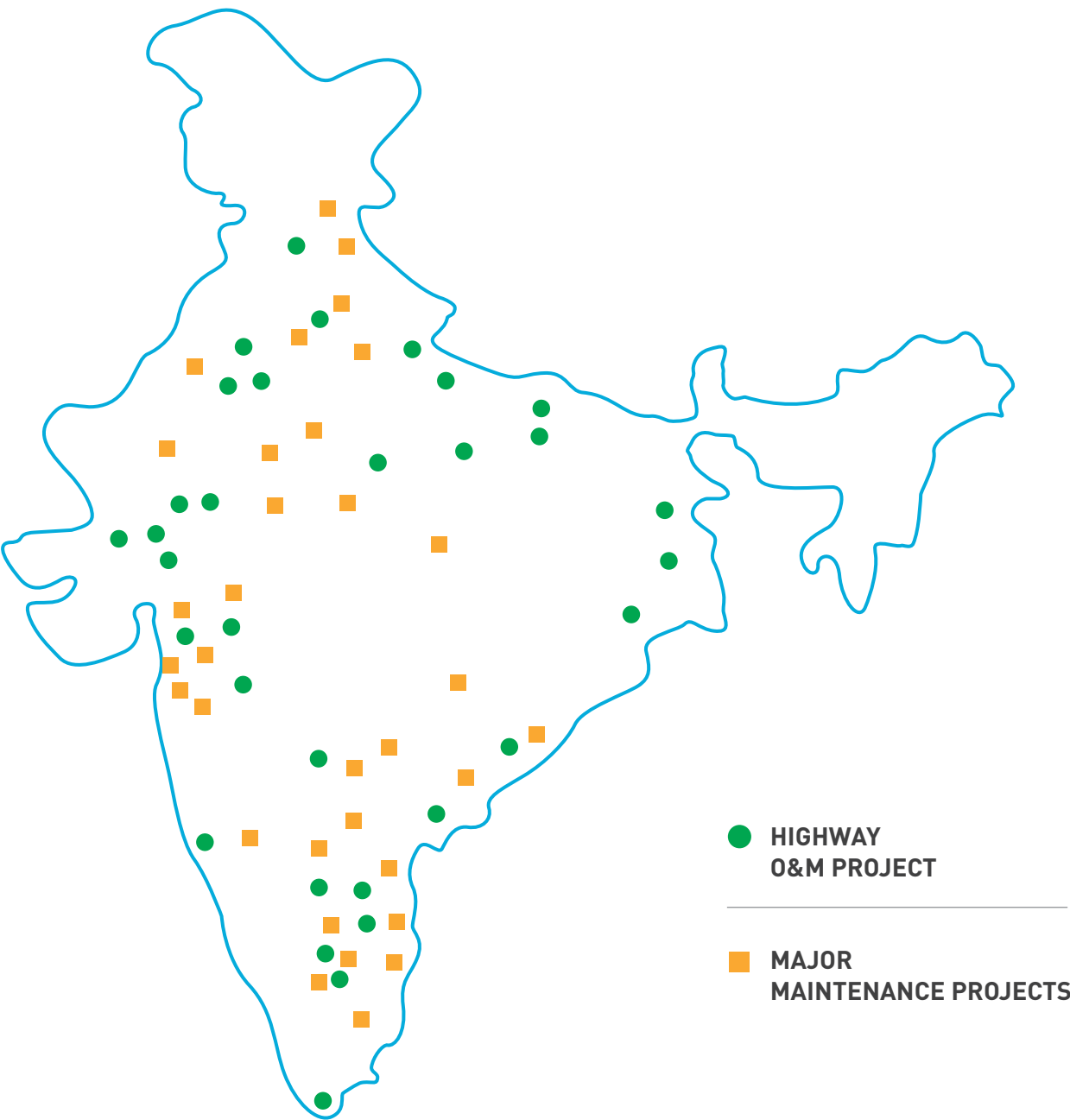
100% Compliance
of statutory requirements

Focus on
Health, Safety, Security and Environment (HSSE)



Establishing Latest Technology
Introduced Micro Surfacing with fiber in India

Paving the path towards innovative Future
CIPR for highway sector

Our Projects



Clientele

 CUBEHIGHWAYS	 HIGHWAY CONCESSIONS	 PEAK INFRA	 SAFeway CONCESSIONS
 LARSEN & TOUBRO	 ENGINEERS INDIA	 MMRDA	 PWD MAHARASHTRA
 PWD UTTARKAHND	 NAVI MUMBAI MUNICIPAL CORPORATION	 TATA REALTY & INFRASTRUCTURE	 UEM (MALAYSIAN CO.)
 HINDUSTAN CONSTRUCTION COMPANY	 MADHUCON PROJECTS	 ESSEL INFRA	 IJM CORPORATION
 NAVAYUGA	 ORIENTAL STRUCTURAL ENGINEER	 RAMKY INFRASTRUCTURE	 INFROVATE
 NCC INFRASTRUCTURE	 VISHVARAJ INFRASTRUCTURE	 IRCON-SOMA TOLLWAY PRIVATE LIMITED	 PINK CITY EXPRESSWAY
 ASHOKA BUILDCON LTD	 GAMMON INFRASTRUCTURE PROJECTS		

Expanding lines of Possibilities