

'The Zym-Tec way for enduring roads'

What is your take on India's infrastructure growth vis-à-vis the development in roads & highways?

A well-developed network of efficient roads is crucial for the growth of any global economy and India is no exception. With an extensive road network of 3.3 million km, India today has the second highest road density in the world after the US.

According to the latest government estimates, Indian roads carry about 61 per cent of the freight and 85 per cent of the passenger traffic. All the highways and expressways together constitute about 66,000 km (only 2 per cent of all roads), whereas they carry 40 per cent of the road traffic.

To further the existing infrastructure, the government annually spends about Rs 18,000 crore (\$3.704 billion). Roads and highways development now forms the crux of the country's ongoing thrust on overall infrastructure development, with the government planning to award a mammoth 7,300 km of road projects in 2011-12 alone.

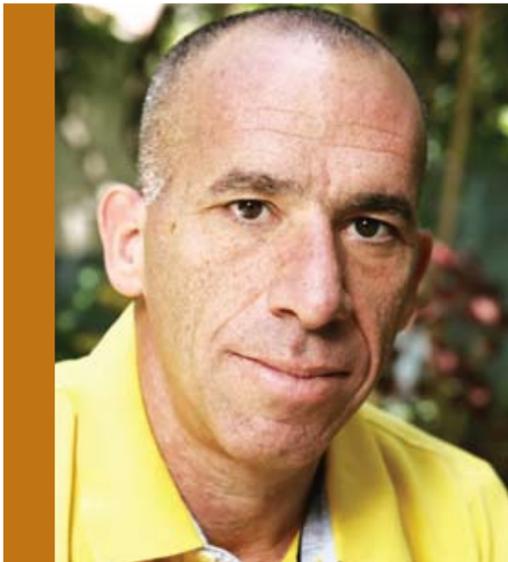
We envisage phenomenal infrastructure growth in India over the coming years. As a company with a portfolio of globally accepted green technology and products, we are confident that we can actively contribute to India's infrastructure growth.

Would you like to elaborate on your technologies for road construction?

Leading i-Tec India's charge at it attempts to make deeper inroads in the domestic market is our flagship product Zym-Tec that promises to revolutionise the method of road construction and deliver superior quality, environment-friendly roads at a fraction of the cost.

Zym-Tec technology is a non-toxic, non-polluting green product that has been approved by the Indian Road Congress (IRC) here in India, in addition to a host of countries around the globe. It is a highly concentrated liquid soil stabiliser and re-conditioning solution-based on a bio-enzymatic soil stabiliser that can be used with the onsite local soil that requires stabilization and re-conditioning.

Zym-Tec is formulated with an enzyme-rich material that has been



"Zym-Tec™ promises to revolutionise the method of road construction in India and deliver superior quality, environment-friendly roads at a fraction of the cost," says Alon Globus, Director, Innovative Technology Enzyme Company of India Pvt Ltd (i-Tec India), in an interview with Paresh Parmar.

A relatively new entrant, i-Tec India is a group company of the Nagpur-based Rs 800-crore Sunil Hi-Tech Engineers Ltd and the sole agent of Israel-based i-Tec-W Ltd, a global company that holds the patent in 96 countries for its state-of-the-art soil stabilisation technology and is one of the leading players in the manufacture of eco-friendly building materials including bricks, roof tiles and paved blocks among other products

tailored to provide the 'lock' for numerous soil materials and promote the desired alteration of their properties causing rapid cementation process to occur. It is also blended with a biodegradable surfactant that reduces surface tension, bringing the enzymes in closer contact with soil materials.

The chemical reaction accelerates the breaking down of organic materials, changes the soil's chemical

roads, township roads, secondary roads, airport runways, road shoulders, recreation paths and parking lots.

Firstly, the product can be used across all types of soil found in urban and rural areas. As Zym-Tec treats the clay within the soil at a particle level, a very small quantity per m² is required. Importantly, soil treated with Zym-Tec render improved density values by reducing void ratios to a

improving the overall road quality and providing additional benefits – not cutting mountains.

Given the abysmal condition of most roads & highways, what are the cost implications of using this technology in comparison with conventional methods of road construction?

Using Zym-Tec ensures huge



composition and alters its engineering properties. This speeds up the cationic bonds of cohesive soil particles to a semi-rigid monolithic configuration facilitating a reduction in the crust thickness of the flexible pavement structure, and thus leads to cost reduction.

What are the advantages offered by Zym-Tec?

Among other important benefits the technology is suitable for use in the construction of a wide variety of road projects including highways, rural

large extent, which in turn results in an overall improvement in the California Bearing Ratio (CBR). Tests done on finished roads that have used this product have shown much-improved CBR ratios, sometimes in the range of 500-1000 per cent (in some cases) depending on the soil type.

It also facilitates higher soil compaction densities and increases soil strength and stability for lasting roads. Zym-Tec also replaces the soling and WBM of conventional road structures, while reducing the crust thickness of asphalt layers, thereby

savings in both the construction and maintenance of roads. The overall cost reduction would be anywhere between 10-15 per cent of the total cost of construction, while the maintenance cost would be reduced by approximately 50-75 per cent. Moreover since there is an achievement in superior strength in the base level of a Zym-Tec road, further reduction in the bitumen layer is also possible resulting in an additional saving in the surfacing costs.

Since the technology allows for far greater use of onsite materials, it also eliminates to a large extent the need to indulge in the costly exercise of transporting borrow pit materials. As the cost of the technology is far lower, it allows for many more kilometers of road to be built within the same budget, thereby ensuring surplus funds that can then be utilised for a seal or accompanying works like drainage mechanisms, curbs, etc.

Unlike conventional stabilisers, there is no working period or time limit when stabilising a layer with Zym-Tec. The application of this technology requires no specialised machinery or construction procedure and the standard method of the construction is followed using a water truck, motor grader and a compactor/grader.

How does the technology help in reducing carbon emissions?

The use of Zym-Tec can help in reducing carbon footprints of infrastructure projects significantly as the product is completely eco-friendly and non-toxic formulated using vegetable extracts & sugar molasses.

Further, the technology eliminates the need for doing different layers

that are a mandatory requirement when constructing a road using the conventional method. Just a couple of layers of Zym-Tec are enough to eliminate the need for multiple layers. In addition, the increased use of onsite materials results in about 9,000 fewer tons to transport. Thereby we save about 230 truckloads of transporting materials to and from the site, or about 80,000 k of carbon dioxide.

Since the use of this technology reduces construction by up to 50 per cent, we also get significant additional reduction in the carbon footprint of the heavy machinery onsite. Zym-Tec also enables the recycling and utilisation of a wide variety of waste materials within ongoing projects which also helps in the reduction of carbon footprint in a scientific manner.

What will be your strategy going forward?

The product has been well-received in India and is currently imported into the country. We are planning to set up a local production facility that will cater to the needs of both the domestic and select foreign markets.

We are presently executing projects in about 15 different locations. These include different types of road projects pan-India like highways, airport runways and rural roads. We are targeting projects across both the private and government sector.

For the private sector we can offer comprehensive solutions to the specialized needs from BoT/BooT projects, in addition to real estate developers looking for long-term solutions for their ongoing realty projects like townships that need a well-developed network of quality internal roads, pathways and jogging tracks for use by its residents. In terms of the public sector, the development

of rural areas that need better roads to improve connectivity remains a big focus for us as also the many road and highway projects that have mushroomed across metros and urban areas.

How do you plan to confront the challenges ahead, given the high competition involved?

We believe it's more of a challenge to change the mindset of the decision-making people as compared to entering a competitive market. The accepted method of constructing roads hasn't changed much in the past 2,000 years since the Romans built the first roads. The real challenge here is to introduce a new, faster, greener and cleaner method that is radically different from the conventional method of road construction.

While the implementation of Zym-Tec technology in road development projects will continue to remain its core focus, i-Tec India also offers a portfolio of other building solutions based on this stabilisation technology. These include ecological housing: based on building materials manufactured from local soils thereby reducing the dependence on cement in bricks, eco-friendly brick manufacturing: from local soils, waste and recycled materials. The company's other green products include curbstones, sidewalks, decorative stones, roof tiles and cement pipes.

As a company, it is our fervent objective to provide the Indian people with better quality, sustainable roads and housing solutions. Given the technology and means at our disposal we are confident that we will be able to lead India to a new ecological infrastructure revolution and its people to a better quality of life.

