

Bitumen, Asphalt & Roads



**ASPHALT IS
OUR BUSINESS**





Application of road stone aggregates with the Chippy



A hand-operated bitumen sprayer

Time for the Chippy

wheeled and manually operated Chippy machine for road maintenance and road surfacing.

Coldmix

NCA's cold asphalt is a storable, premium-quality product for permanent repairs to potholes and utility cuts. Coldmix can be stored in bulk; it has a minimum two-year shelf life and remains workable even in cold weather conditions.

"The material is supplied in a 6.7 mm and 9.5 mm wearing course used for sealing all road repairs and also a -26 mm base prefill (base course) used as a long-lasting, durable, cost-effective filler for deep repairs," explains Shane Mullins, operations manager at NCA.

Hot mix in a bag

LT40 asphalt (commonly referred to as "hot mix in a bag") incorporates an additive made from 100% natural and renewable resources.

As Mullins points out, the product is perfect for edge breaks, reinstatement of trenches, patching and pothole repairs.

"In addition to reducing waste and time lost waiting in queues at HMA plants, plus product loss from inclement weather, LT40 allows for higher productivity. You can proceed directly to site with all the necessary tools and begin work immediately," he explains.

LT40 is supplied in 25 kg bags, has a shelf life of 12 months and is heated up to approximately 40°C to 60°C in a custom-built oven that can be supplied with a purpose-designed trailer. Once the product has reached the required temperature, it is transferred on to a wheelbarrow and transported to the repair site. From there,

When it comes to upgrading a gravel route to a blacktop riding surface, or when resealing an existing asphalt road, National Cold Asphalt (NCA) is a leading expert in these upgrade or repair interventions. Its technologies are also ideally suited for labour-intensive, community-based projects, and these solutions are sustainable, both environmentally and in terms of lasting durability.

This is clearly important when it comes to stretching municipal maintenance budgets, since getting the job right the first time round eliminates unnecessary rework, and wasted expenditure. Every municipality has a directive to ensure that its infrastructure planning facilitates socio-economic growth, and roads are the main conduit.

NCA has been involved on road repair projects since 2007 when trials were first conducted on potholes in the Western Cape. To date, these repairs remain intact and blend into the surrounding material, making them almost indistinguishable from the existing road.

The NCA product range includes Coldmix asphalt, LT40 hot mix asphalt, and the

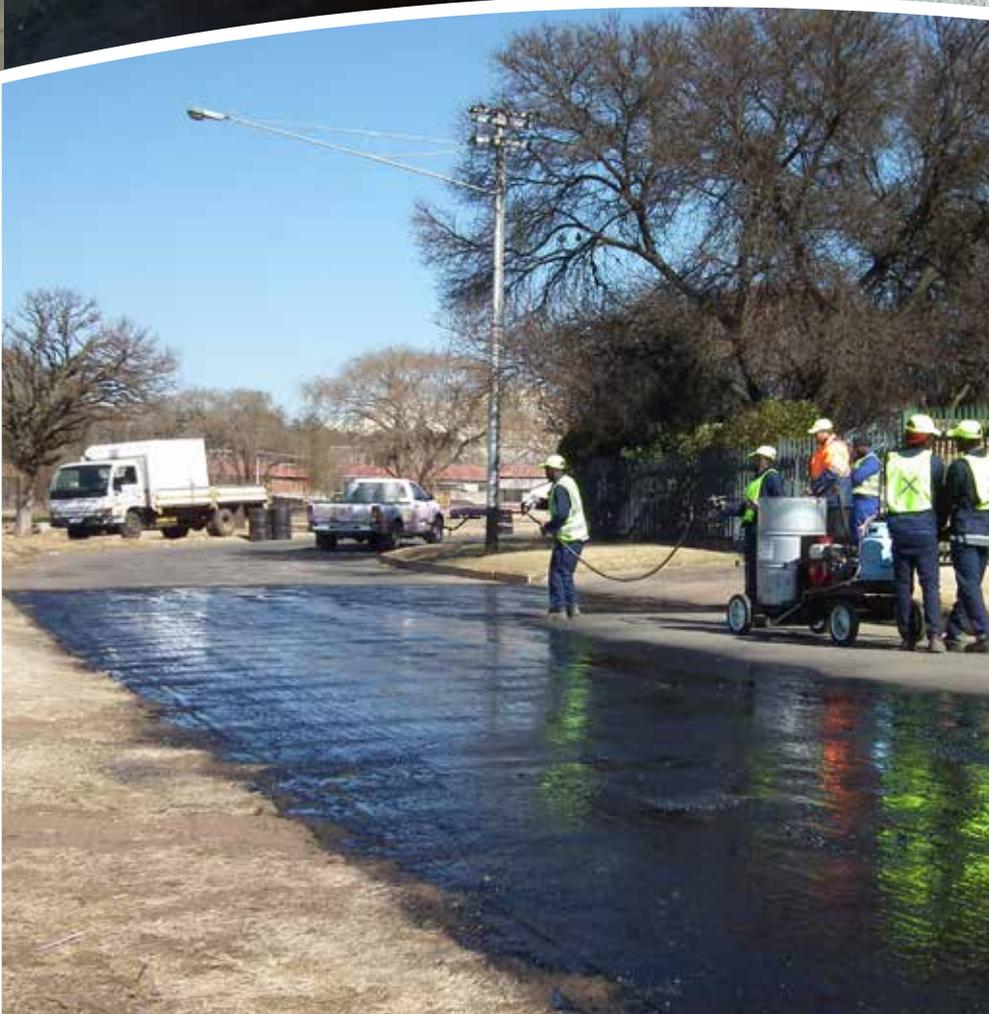
THE CHIPPY ADVANTAGE

- ▶ Building infrastructure
- ▶ Creating sustainable employment
- ▶ Saving on capital expenditure
- ▶ Providing fast-tracked service delivery with proven results and healthier communities

A world first developed a few years back, the Chippy™ is the answer to many of South Africa and Africa's pressing primary and secondary road surfacing needs, plus it's a job creator.



Based on the design put forward by the consulting engineer, three different stone specifications can be handled by the Chippy



Up to 65 job opportunities can be created around the surfacing process alone and, since there's no mechanisation component, SMMEs are not hampered by the need to invest in specialist paving equipment, which would traditionally represent a major barrier to entry in terms of expense and access to finance.

"The Chippy complies with the Construction Industry Development Board's practice manual on job creation and contractor development regarding labour-intensive construction methods," explains Mullins.

"The Chippy method is, therefore, well-suited for use by local authorities in line with the goals of the National Expanded Public Works Programme when it comes to job creation for unskilled and semi-skilled workers, as well as in meeting the minimum 30% subcontractor component stipulated by the Preferential Procurement Policy Framework Act (No. 5 of 2000)."

The Chippy has received many accolades and much recognition throughout the industry, including the Southern African Bitumen Association's 'Award for Excellence'.

In addition to South Africa, countries like Botswana and Zimbabwe have recently expressed interest in trialling the Chippy on local road projects. Meanwhile, further afield in Ghana, the Chippy is now a common feature thanks to ongoing labour-intensive works funded by a Japanese NGO.

"Depending on site logistics and conditions, as well as team size, the Chippy can comfortably meet single-seal production volumes of approximately 10 000 m² per day," concludes Mullins. **35**

the product is placed in the prepared area and compacted.

The Chippy

At the business end is the Chippy, a patented South African innovation launched in 2004 and aimed at the local and broader African markets for the application of road stone aggregates. Typical projects entail the upgrading of gravel roads to surfaced standard, or the application of single and double seals for the maintenance of existing routes. LT40 would be specified in these instances to repair badly potholed roads before resealing. (Traditional cold mix products release volatiles as part of their curing process, which means

that resealing can only occur months later.) Based on the design put forward by the consulting engineer, three different stone specifications can be handled by the Chippy, namely 13.2 mm, 9.5 mm or 6.7 mm products.

During gravel-to-asphalt projects, the process entails the use of a high-pressure distributor to apply the elastomeric polymer modified bitumen, or a hand-operated bitumen sprayer, depending on the specification, followed by the application of the graded stone aggregate. NCA provides technical advice and support, including how to optimise the size of the work crews depending on the number of Chippy's deployed on a given site.



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