

GreenBuildingNEWS

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Going Green From the Asphalt Up

Asphalt — a word that originates from the Greek word “asphaltos” for secure — is the most recycled material in America, with more than 70 million tons recycled each year.

One recycling method that offers cost savings in addition to its green benefits is full-depth reclamation — FDR — pioneered by Ruston Paving Company.

In the FDR process, all of the asphalt pavement section and a predetermined amount of underlying materials are treated to produce a stabilized base course, using different types of additives like asphalt emulsions and chemical agents like calcium chloride, portland cement, fly ash and lime for an improved base.

The process, which is typically performed at a depth of four to 12 inches, includes pulverization, introduction of additives, shaping of the mixed material, compaction and application of a surface or a wearing course.

Full depth reclamation has been recommended for pavements with a base or subgrade problem, deep rutting, load-associated cracks, nonload associated thermal cracks, reflection cracks, and pavements with maintenance patches such as spray, skin, pothole, and deep hot mix. It can be done without changing the geometry of the area and can improve frost susceptibility.

With low production costs, low engineering costs, and only a thin overlay or chip seal surfacing required on most projects, FDR also conserves materials and prevents air quality problems resulting from dust, fumes and smoke.

The process is used anywhere a facility has asphalt pavement, whether it's parking lots for retail or private businesses, airport runways or military facilities.

FDR serves as an alternative to the traditional method — removing all the existing material, dumping it in a landfill and bringing in new material with no recycling involved in the process.

“Since you're pulverizing and blending material in place, and creating a new material, nothing leaves the job site,” said Tim McConnell, Pavement and Soils Specialist with Ruston Paving. “The green aspect is, you're recycling the material in place, so it's not wasted.”

The process also reduces the costs and emissions from trucking material, adding to its green appeal, said Mark Ruston,



president and CEO of the company.

“The process has been around for a long time, but in the past the type of equipment that was available only lent itself to road projects where you had continuous opportunities,” Ruston said. “Because we're not a highway contractor, we did struggle with trying to adapt the equipment available at the time and the techniques available to smaller tighter areas.

“We did quite a few projects, but we just found that with the equipment we had we weren't as productive as we needed to be to get the price point to where it was attractive to customers,” he said. “Our big focus the last few years has been investing in more modern equipment that's more agile, that allows us to adapt smaller pavement situations and that's where we're starting to see this take off in the commercial segment in parking lots.”

The expected life span of a section of pavement that's been reclaimed is infinite as long as it's maintained properly, according to Ruston.

“The expectation is that after 20 years you're going to put another layer of maybe an inch to an inch and a half of fresh surface over the top of that,” he said. “But the base that's been stabilized underneath that should continue to last many decades.”

In terms of installation time, the FDR process takes about

half the time that a traditional excavation would take.

Currently, FDR is employed mostly in projects where the local Department of Transportation has adopted the process, said Lang Butler, vice president of Human Resources and Marketing with Ruston Paving.

“One of the things we’re trying to do as a company is raise awareness that it can be done,” he said. “We are trying to get the process out there in the marketplace so that it becomes more of a common practice. Right now most of the work we’re doing is in our southern offices, but we are successfully doing projects in the northern markets as well

We are trying to get more people aware of it and the success of it based on our own successes.”

“We see the future being bright because there’s a greater awareness of this green effort and conserving energy and materials, and as oil prices go up and the cost of hauling materials, it becomes more an attractive option economically,” Ruston said. “So we see it as a growing market and that’s why we’re currently investing in better equipment so we can better handle the need that’s out there.”

The company, which was founded in 1967 in Syracuse, N.Y., has offices in Rochester, N.Y., Manassas, Va. and Durham, N.C.

In addition to the FDR process, Ruston Paving offers soil stabilization as an additional green process.

“On the soil stabilization side, the thing that makes it green is on many sites, new construction sites especially, you may run into unsatisfactory soil conditions to build your building on,” McConnell said. “The soil stabilization process has the ability to go in and modify the soil that exists on that site rather than the alternative — pulling that material offsite, getting rid of it somewhere else and bringing in engineered aggregates and fill.”

Keeping material on site and preventing the fossil fuel emissions from relocating can help reduce a repaving project’s car-



bon footprint, he said.

“Switching over to sustainability, when you start to affect areas outside of your work footprint, that’s when it becomes less and less sustainable,” he said. “The idea behind sustainability is to make sure you’re only dealing with materials and you’re only impacting a localized footprint.”

The onsite work included in both soil stabilization and FDR allow for cost savings since no new material needs to be purchased and brought on site.

“One of the advantages of the FDR process is ... you’re actually creating a better productive than the alternative, which would be full-depth excavation and replacement,” he said. “In doing that, you’re also saving money.”

The cost savings can also be seen in trucking less material.

“It’s kind of refreshing to be in our industry where we’re typically thought of as someone who utilizes the earth’s resources, to be able to provide a product that is better but costs less to put in place,” Ruston said. ■