Innovations in Concrete Paving & Dowel Baskets

Glenn Eder
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Concrete Pavement Competing against “Earth Roads” in 1919
We’ve come a long way since then…Today’s Innovations & Quality Materials are producing Long Life Concrete Pavements

- Pavement Design Tools
- Pavement Mix Designs
- Laser Guided Fine Grading
- High Capacity Twin Batch Plants
- Slip-form Paving 40’ wide
- Stringless Paving (GPS)
- Dowel Bar Insertion (DBI)
- Wheel Path Only Dowels
- Longitudinally Tined Pavement
- High Performance Dowels
Pavement Design & Pavement Mix Designs Software Tools

Pavement Design

Pavement Mix Designs

Ensuring that agencies can specify—and contractors can deliver—durable concrete pavements, every time.
Laser Guided Fine Grading
Job Site Twin Batch Plant
Feeding the “Beast”
Stringless Slip-Form Paving 40’ wide
Moving at 4-1/2 Feet per Minute
High Performance Long Life Dowels spotted on grade for Dowel Bar Insertion (DBI)
Wheel Path Only Dowel Bar Insertion (DBI)
Quieter Concrete Pavements
Longitudinally Tined
Curing 40’ Wide with 275 gal totes
Concrete Pavement continues to the Horizon
Innovations for Dowel Baskets?

To invent the next great thing, to have a better idea.
Dowel Baskets Innovations

- Dowel Basket Alignment Stripe
- Dowel Basket Frame Improvements
- Preparing Dowels for Welding
- New thoughts on cutting shipping wires
- Fully Coated Baskets
- Stabilized Dowel Baskets Frames
  (for thick sections of concrete pavement)
- High Performance Dowels
New Innovation: A visual guide for alignment

- Marking the mid-point on the dowel bars at the manufacturing plant adds a visual guide for placing the basket on the center of the transverse joints on grade
- This alignment guide will also facilitate inspection in the field
Dowel Bar Alignment Improvements

“J” Style Legs

“A” Style Legs: 24 more welds per basket & 12’ more of wire
Dowel Bar Alignment Solution: Preparing the dowel bars for welding

Burning through the epoxy coating to weld the dowels

Preparing the dowel bars for welding
Shipping Wires: To cut or not to cut, is that the question?

Cut shipping wires makes the basket less stable during paving.

Uncut shipping wires add greatly to the stability of the basket.
Fully Epoxy Coated Dowel Baskets

Looks Fully Coated

But it’s Not
Stabilized Dowel Basket frames for dowel bar alignment in thick Pavement Sections

Stabilizer inside Side Frame

Stabilizer Deployed
HIGH PERFORMANCE DOWELS
ARMOUR COAT™ by SIMPLEX
High Performance Dowels for Long Life Concrete Pavements

• There are many different types of High Performance Dowels
• At many different price points
• It ranges from a high end of Solid Stainless Steel dowels welded in a stainless steel wire frames to an affordable option slightly higher than a standard DOT Basket
• With so many choices it is important that the high performance dowel selection matches the project life expectancy, one doesn’t want to put a 40 year dowel in a patching project when the pavement will be replaced in 10 years
• It is also important for a welded rigid frame to ensure dowels stay in the frame and aligned
The End... Thank You
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