

Ultra-Thin Concrete Whitetopping: The Best Solution for Today's Overlay Projects



Every municipality, county and state is facing the same pressures: do more with fewer tax dollars. So the key word among today's materials specifiers is value... value that delivers more performance for every dollar spent. In road maintenance and repair, everyone recognizes the long life and superior performance characteristics of concrete paving. But budget constraints often have stopped specifiers from choosing concrete. Until now!

With the development of Ultra-Thin Concrete Whitetopping, material specifiers in municipal, county and state governments have been given the opportunity to choose a no-compromise material that delivers the looks and performance characteristics of concrete ... at a competitive price.

Ultra-Thin Whitetopping:

Evolution of a Revolutionary Product

Whitetopping overlays of 4-inches or more, placed over asphalt for rehabilitation, have been constructed over the past 20 years in all pavement areas: highways, streets, airports and parking areas. Some states can claim as many as 300 miles of whitetopped county roads. And the process has performed exceptionally well.



Researchers began to ask: "What if we reduced the thickness of the whitetopping... reinforced the material... and reduced stresses by redefining joint spacing requirement?" *The result: Ultra-Thin Concrete Whitetopping.* And these days, UTW is the ideal solution for city streets and intersections... local or low-volume roads... parking lots... even general aviation applications such as taxiways, runways and aprons. It bonds to the asphalt surface and works like concrete pavement!



Before a UTW project begins, certain questions must be answered:

- *Mix Design*
- *UTW Thickness*
- *Joint Spacing*
- *Band and Support*

Ultra-Thin Whitetopping: The Secret's In The Bond

Essentially, UTW is a concrete product reinforced with synthetic fibers that rehabs deteriorated asphalt pavement that has sufficient structure, but a poor or rutted surface. UTW is placed over an asphalt pavement that has been milled, broomed and cleaned. There must be sufficient structure in the asphalt to permit bonding. UTW can be placed using conventional paving equipment. Experience shows that even inexpensive vibrating screeds or hand leveling equipment will work. And UTW projects can handle traffic in less than 24 hours after construction, developing compressive strengths over 3000 psi using Fast-Track paving materials and techniques.

Mix Design

The concrete mix selected for a particular project is matched to the traffic conditions and opened-for-traffic requirements. A normal mix design includes cementitious materials (cement and fly ash), coarse aggregate, fine aggregate, air entraining agent, admixtures (water reducers and/or plasticizers), synthetic fibers (as specified), and a low water cement ratio.

Fast-Track Paving UTW projects use high early strength concrete mixes. Your local concrete representative can provide guidance for the mix design for your project.

Thickness

Although there are many variables that should be considered on any UTW job, the general rule of thumb for thickness is this: The UTW should be between 2 and 4 inches thick depending on traffic requirements. The asphalt pavement that the UTW bonds to should be at least 3 inches thick to provide sufficient base for the UTW.



Jointing

Proper joint spacing is critical in a UTW project. Many successful projects have use short joint spacing to form--in effect-- a mini-paver block system. Experience seems to dictate that joint spacings be no more than 12-18 inches each way per in of whitetopping thickness. (In a 3-inch UTW surface that translates to 3-foot by 3-foot or 4-foot by 4-foot square.) Joints are then early sawed to control cracking.



Step By Step Through a Typical Project

1. Mill and clean the surface. This enhances the bond between the aspha
Many installers mill off the amount that will be replaced by UTW
so that they don't change the surface grade.

2. Place, finish and cure the UTW using conventional
paving techniques and material.
That's all there is to it. If you can put down any concrete
material you can work with UTW... including
slipforming 2-inch thicknesses.



3 Early-saw to prevent cracking.
This can be done shortly after the UTW is placed to reduce curling
and warping stresses

4 Open to traffic

What's the newest idea in pavement overlay that has everyone talking?

Ultra-Thin Concrete Whitetopping!



Ultra-Thin Concrete Whitetopping...

What's That?

Basically, a new process in which 2 to 4-inches of high-strength, fiber-reinforced concrete is placed over a specially prepared surface of distressed asphalt. The resulting composite pavement delivers the long life and superior performance characteristics of concrete pavement at a cost competitive with ordinary asphalt overlays.

The Durable, Fast, Competitive Choice Only Ultra-Thin Concrete Whitetopping delivers this combination of benefits:

- ❑ It's Durable: with the characteristics you get only with concrete. Research indicates that Ultra-Thin Whitetopping can last 2-3 times longer than asphalt overlays.
- ❑ It Looks Better: with the superior appearance and cool light reflectance that only concrete provides. And UTW looks better over the life of the surface... without the rutting and washboarding that often appear within a year on an asphalt surface.
- ❑ It's Competitively Priced: with asphalt overlays.
- ❑ It's Fast and Easy: with cure times of less than 24 hours, with Fast-Track construction techniques, common paving jobs, such as intersection repair, can be completed in a day or two. And paving can be accomplished with the equipment you have on hand with concrete mix delivered by local ready-mix suppliers.

Ultra-Thin Whitetopping Projects In North America

Public agencies from across the country send the message loud and clear: Ultra-Thin Whitetopping overlays are the wave of the future. For residential streets, county roads, intersections, general aviation airports.



For any use where asphalt is being considered. UTW goes down easy... it cures fast... it's competitively priced and it lasts longer, looks better, works better and requires less interim maintenance. That's a combination that can bring relief to the most stressed budget.

For more information, contact your local ready-mix supplier/contractor.
Or call the American Concrete Pavement Association or National Ready Mixed Concrete Association.