ACPA Digital Toolbox and Resources Update

Tennessee Concrete Pavement & Cement-Based Pavement Solutions Conference

January 31, 2014

Andrew Maybee, P.E.
Executive Director
Rebranding Some Roots to acpa.org

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Construction

Documents

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Development And Implementation Of The Next Generation Concrete Surface

Date added: 09/03/2011
Filesize: 1.03 MB
Downloads: 7

Concrete Pavement Field Reference Paving (EB238P)

Date added: 11/12/2010
Filesize: 7.51 MB
Downloads: 62

If you are interested in purchasing a professionally printed copy of this publication, click here.
Utility cuts

Concrete pavements have long been recognized as clean, smooth riding, strong, and durable, and properly designed and constructed concrete pavements should provide several decades of zero- to low-maintenance service. At times, it is necessary to cut trenches in some concrete pavements, particularly in urban areas, in order to repair or install utilities such as sewers, drainage structures, water mains, gas mains and sanitary lines, telecommunication lines, and power conduits. Unless the cost of trenchless methods that do not disturb the pavement is justified, the pavement must be opened up, the utility installed or repaired, and the pavement restored using a utility cut restoration. If these operations are carried out properly, there will be minimal impact on the pavement's functional serviceability, ride quality, and lifespan.

Experience has shown that it is best to repair or restore concrete pavements with concrete. Proper utility cut restorations, constructed even with the surrounding pavement, provide a smooth transition that can withstand traffic loads without future settlement. Flexible backfill, a material that solidifies in about four hours, and/or a fast-setting concrete mixture that can carry traffic in four hours or less can be specified. Precast concrete panels might even be used to further expedite the most time-sensitive utility cut restorations.

The purpose of this publication is to provide guidance for the city engineer, public works supervisor, utility foreman, or contractor who must plan or carry out a utility cut and the subsequent utility cut restoration. This publication describes simple design and construction techniques, which usually do not involve any specialized equipment, contractors, or materials, these techniques apply primarily to utility cut restorations in light-traffic roadways, such as residential and collector streets. Exceptions to these techniques for specialty situations, such as utility cuts in overlays, are included in the “Other Design Considerations” section.

The step-by-step process of a proper utility cut and the subsequent concrete pavement restoration.

1. Planning the Utility Cut Location, Size, and Shape
2. Creating the Utility Cut
3. Removing the concrete
4. Restoring the Subbase and Subgrade
5. Opening to Traffic
6. Other Design Considerations

References
App Library v2.0 | apps.acpa.org
The pie chart illustrates the most popular apps on apps.acpa.org between January 2010 and October 2013. Here’s a breakdown of the most used applications:

- **k-Value Calculator**: 14%
- **Subgrade Resilient Mod Calculator**: 13%
- **Evaporation Rate Calculator**: 12%
- **Total ESAL Calculator**: 12%
- **Strength Convertor**: 10%
- **BCOA Calculator**: 6%
- **Gradation Analyzer**: 3%
- **Concrete Temperature Calculator**: 3%
- **National Concrete Overlay Explorer**: 5%
- **Maximum Joint Spacing Calculator**: 6%

These tools were the most utilized during the specified period, reflecting the needs of the users for various calculations and analyses related to concrete and pavement engineering.
Went live January 2014 - over 250 RCC Projects
### Agency Practices Explorer: Data Views

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<th>Location</th>
<th>Air Entrainment Spec</th>
<th>Chemical Admixture(s) Spec</th>
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Locations Without Available Data For This Topic:
- Alberta
- Calgary
- California
- Colorado
- Nebraska
- New Mexico
- North Dakota
- Oregon
- Texas
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Software
- StreetPave
  - The latest in jointed plain concrete pavement and overlay thickness design for streets and roads. Also includes asphalt pavement thickness design and life-cycle cost analysis. Click 'Open Install Folder' and run setup to install.
- Open Install Folder | StreetPave Webpage
- WinPAS
- AirPave
- PerviousPave
- Other Software

ACPA Chapters and Affiliated State Paving Associations

- ACPA
- Colorado/Wyoming Chapter
- Illinois Chapter INC
- Indiana Chapter
- Iowa Concrete Paving Association
- KCPA
- CAAL
Desktop Software | software.acpa.org

AIRPAVE
Structural Design Software for Airfield Concrete Pavements

WinPAS
Based on the 1993 AASHTO Guide for the Design of Pavement Structures

PerviousPave
Design Software for Pervious Concrete Pavements

StreetPave
Structural Design Software for Street and Road Concrete Pavements
IndustrialPave

- Beta under development
- Includes:
  - Over-the-Road Trucks – based on StreetPave
  - Industrial Vehicles – based on AirPave
  - Distributed Loads – based on AirPave
  - Concentrated Loads – based on ACI 318 equations
- Upcoming ACI 330 doc uses StreetPave for over-the-road trucks and AirPave for industrial vehicles