

Midwest States Regional In-Place Conference

Wednesday, September 11, 2013
Schaumburg, Illinois



FDR - "A Contractors Perspective"

Presented by Tom Johnson

Midstate Reclamation Inc.

Outline

- **FDR- “Different Types”**
- **Applications- “No Bus Tour”**
- **Getting Started- “How to Implement”**



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Where cutting-edge is commonplace.

**I do not believe you can do today's job
with yesterday's methods and be in
business tomorrow.**

**We will change the way we build
roads.**

How to build from the top down

The use of Flexible Pavements

- Mechanical Stabilization
- Bituminous Stabilization
 - Asphalt Emulsion- Engineered, Anionic, Cationic
 - Foamed Asphalt / Expanded Asphalt
- Chemical Stabilization- (Liquid)
 - Calcium Chloride - CaCl_2
 - Magnesium Chloride - MgCl_2
 - Base One, Permazyne
- Chemical Stabilization- (Dry)
 - Lime - Hydrated, Quick or Slurry
 - Fly Ash - Type "F" or "C"
 - Portland Cement
 - Various Kiln Dusts

Definitions

Soil Modification- is merely a means to reduce the moisture content of a soil to expedite construction

Soil Stabilization- is the alteration of soils to enhance their physical properties. Stabilization can increase the shear strength of a soil and/or control the shrink-swell properties of a soil, thus improving the load bearing capacity of a sub-grade to support pavements and foundations.

“The No Bus Tour”



Mechanical Stabilization
Waseca Cty, MN 2003

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Canterbury Race Track 2012

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Engineered Emulsion 6" @5%
Chisago Cty 2001

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Chisago Cty 2001

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Double Chip Seal
Chisago Cty 2001

2001/11/01

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Engineered Emulsion
6" Rap/ 2% Emulsion
Blue Earth Cty 2013

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Blue Earth Cty 2013
Double Chip Seal

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Engineered Emulsion 4%
Shakopee, MN 2013

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Foam Asphalt- 2010
Hwy 55, MN

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2.5% HFMS-2s & 1.5% Cement
Bemidji Airport 2006

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HFMS-2s & Cement
Bemidji Airport 2006

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Engineered Emulsion 6" @ 1% cement
Hwy 65, MN 2009

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Hwy 65, MN

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Calcium Chloride
Cottage Grove, MN

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Base One
Fillmore Cty, MN

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Fillmore Cty, MN

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Base One
Fillmore Cty, Mn

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Permazyne 2013
Tioga, ND

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Add 2" base rock, Double Chip Seal

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Soil Modification
Wal-Mart- Lakeville, MN

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Soil Modification
Construction Site
Minneapolis, MN

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Excel Energy 2013
Pine Island, MN



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Soil Modification
LeSueur County, MN
.5 mile Subgrade Repair



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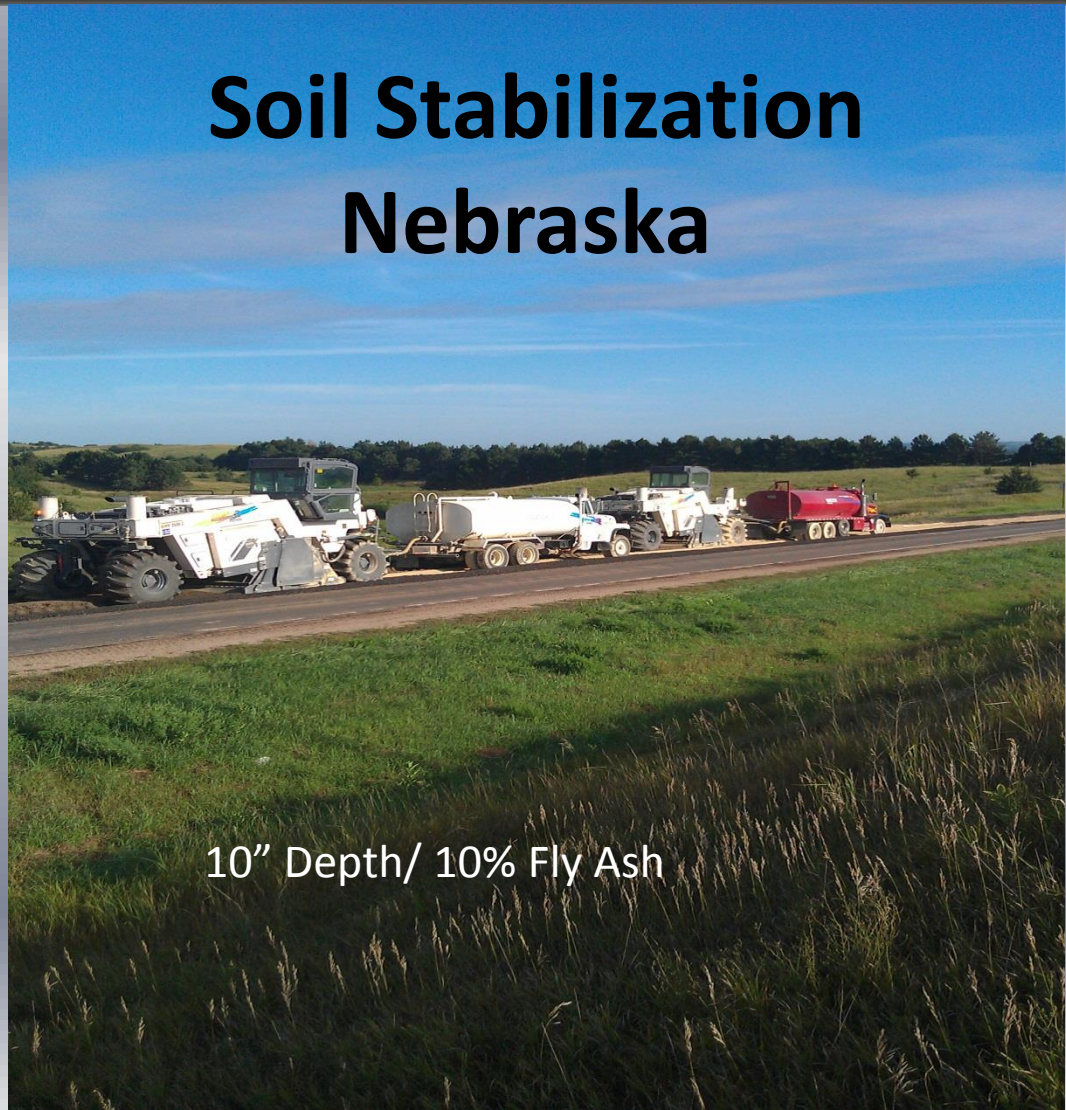


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Soil Stabilization Nebraska



10" Depth/ 10% Fly Ash

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Bowman County, North Dakota 2011

- **2 mile test project**
- **8" Stabilization**
- **5% Cement**
- **Double Chip Seal**

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Iowa Wind Farm Fly Ash



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**Grain Pad
Fargo, ND**

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Sugar Beets
Stephen, MN



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Oil Pad
Crosby, Nd

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How to Implement In-Place Recycling Projects & Project Selection

Right Method - Right Road - Right Time

A good contractor will tell you if it is the right process

Project Selection

Do the homework before the test

40-45 6" cores for a design
Preform a DCP,
knowing what the sub grade is,
just has important as the
design



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Specifications



Specifications

- **Performance Base- Method**
- **Superintendent** - who's in charge
- **Experience** - make it a requirement

**Not everything works out as planned
Don't blame the technology**

