

Full Depth Reclamation

Additive Selection Guidelines



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- **PULVERIZATION**

- **MECHANICAL STABILIZATION**

- **BITUMINOUS STABILIZATION**

- **CHEMICAL STABILIZATION**

- Wirtgen
- WR2500
- 610
- Horsepower
- 8' wide cut



- Can cut to a depth of 20"
- Operating weight = 70,000
- Foamed Asphalt System

- Cat RM-350 B
- 470 horsepower



- 8' wide cut
- Can cut to a depth of 18"
- Operating Weight = 50,000 #



















PULVERIZATION ONLY



Return to granular material







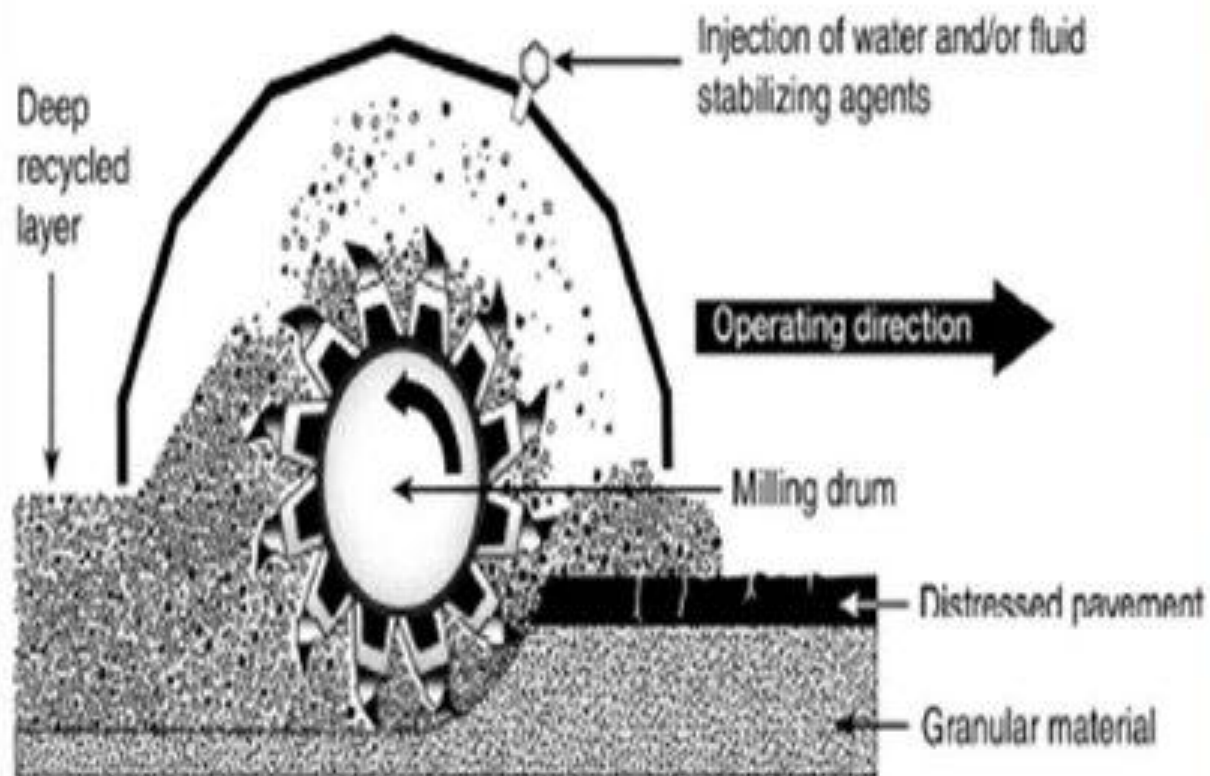
- Crushed aggregates
- Asphalt millings
- Crushed concrete





Bituminous Stabilization

Injection system

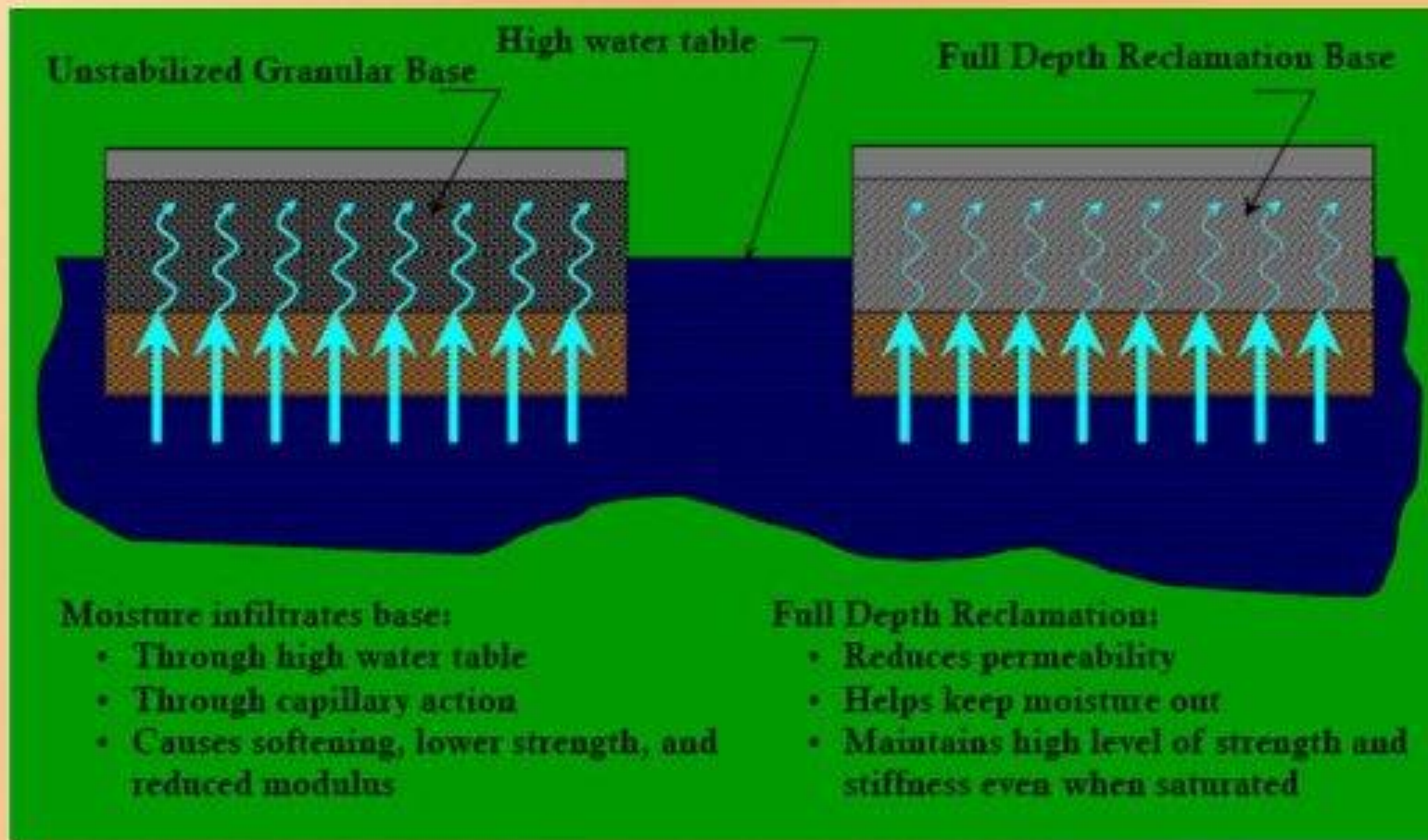


**All pavement structures
with the passage of time
wear out.**

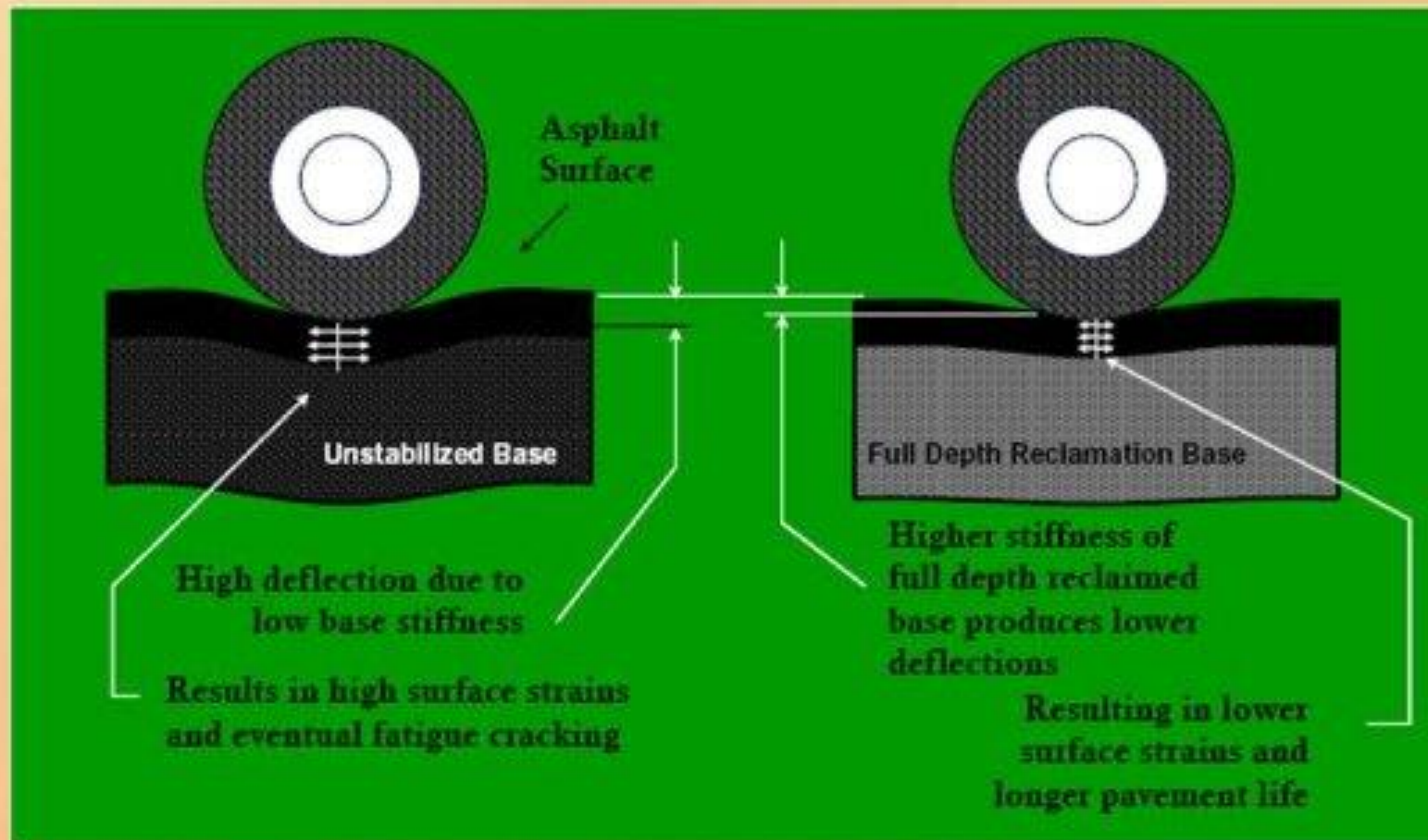




Reduced Moisture Susceptibility



Reduced Fatigue Cracking



Short test sections for mix designs







Higher Per SQ Yd Oil Content
Problems with Drum Pick-Up

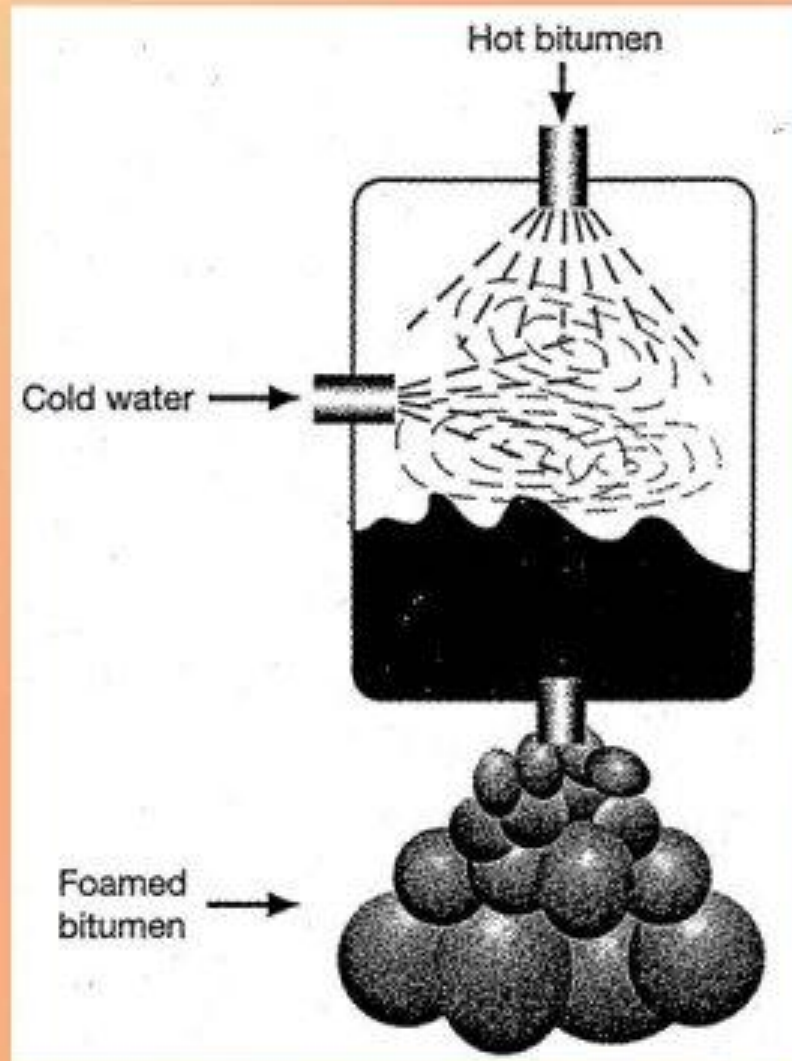




FOAMED/EXPANDED ASPHALT



Expansion Chamber



- .0075mm (NO. 200 SIEVE)

- BEST TO HAVE 10% TO 15%





**Larger aggregate
stays clean.**



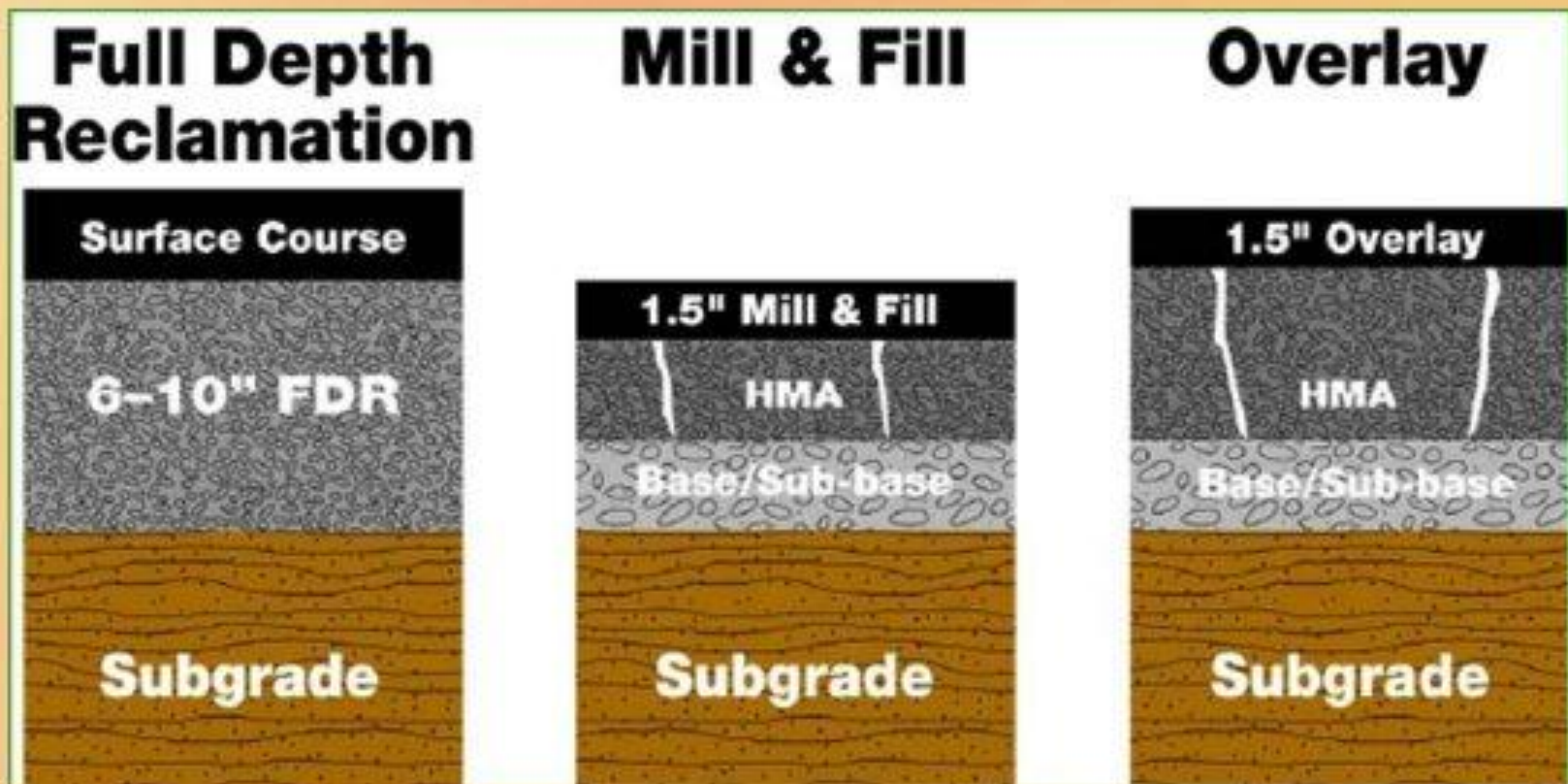


NO
PASSING
ZONE

Chemical Stabilization

- Portland Cement
- Hydrated Lime
- Fly ash
- Calcium Chloride
- Magnesium Chloride

How can FDR be used more effectively?





Pavement Distress

Deformation

- Corrugations
- Ruts (shallow)
- Ruts (deep)

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- The image shows a close-up view of a paved road surface. The asphalt is heavily deteriorated, showing a pattern of interconnected, irregular cracks that resemble the scales of an alligator. This is a classic sign of alligator cracking, which is caused by structural failure of the pavement layers. The road is surrounded by green grass and trees in the background. A utility pole is visible on the right side of the road.
- Alligator cracking
 - Longitudinal
 - Wheel path
 - Pavement edge
 - Slippage

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- Block cracking
 - Longitudinal (joint)
 - Transverse (thermal)
 - Reflective

Maintenance Patching



A photograph of a road with significant potholes and uneven pavement, indicating a weak base or sub-grade. The road surface is light-colored and shows extensive cracking and crumbling. The surrounding area is green grass.

Weak base or Sub-grade

General Guidelines

- Hydrated lime or Quicklime
2% to 4% by weight
- Plasticity index greater than
10



General Guidelines

- Class C Fly Ash
8% to 14% by weight
- Portland Cement
3% to 6% by weight



General Guidelines

- Emulsified or Foamed
Asphalt 1% to 3% by weight



General Guidelines

- Calcium Chloride 1% by weight
- Combination of additives
Lime/Fly Ash/Portland Cement
Portland Cement/Calcium Chloride

References

Soil and Pavement Base Stabilization with Self-Cementing
Coal Fly Ash ACCA International

Soil Stabilization Manual, Driving on a Solid Foundation
Asphalt Recycling & Reclaiming Association

Full Depth Reclamation Manual, A Century of
Advancement for the New Millennium
Asphalt Recycling & Reclaiming Association



To Safely Do
Every Job We Do
Better Than Anybody Else