Preparation before Resurfacing or Restoration

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- Crack sealing
- Fabrics
- Patching
- Milling
- Leveling course

Crack Sealing

Why Crack Sealing?

- Extends service life of existing asphalt pavement
- Prepares existing pavement prior to construction of an HMA overlay

Crack Sealing

Crack Repair

Controlling Reflection Cracking

- Preoverlay repairs (patching and “Band aid” type crack sealants)
- Synthetic fabrics
  - Stress relieving or stress absorbing membrane interlayers
- Sawing and sealing joints in AC overlay
- Increased overlay thickness

Fabrics

Patching

Why Patching?

- Repair localized distress
- Improve safety
- Reduce roughness
- Reduce rate of deterioration
- Repair pavement prior to overlay
- Extend life of existing HMA

Patching Materials

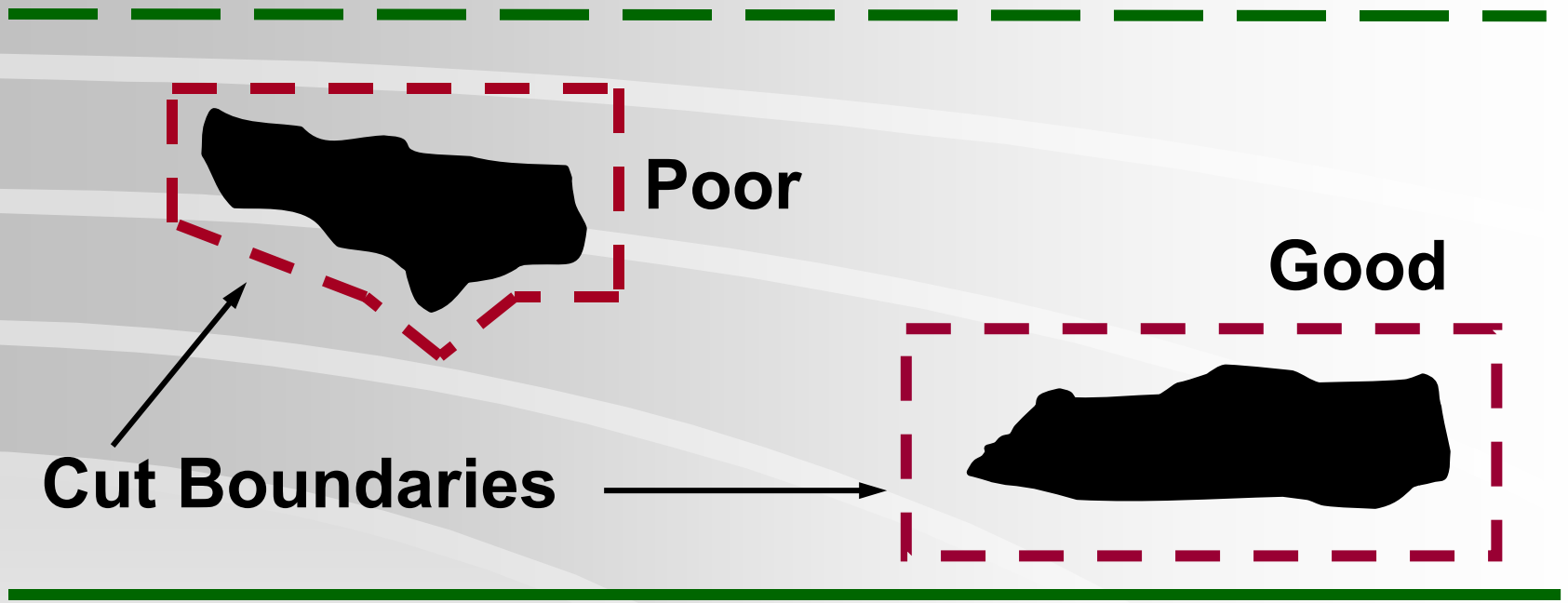
- Cold-Mix
  - Used as temporary patches
  - Placed in stockpile and used over a period of time (Emulsion binders)
- Hot-Mix Asphalt (HMA)
  - Placed immediately while hot
  - Standard dense graded HMA

Patching - Poor Conditions

Patching Procedure

- Mark patch boundaries
- Cut boundaries
- Clean and repair foundation
- Apply tack coat
- Fill hole with patching material
- Compact the patch
- Cleanup

Marking Patch Boundaries



Straight boundaries, recommended rectangular

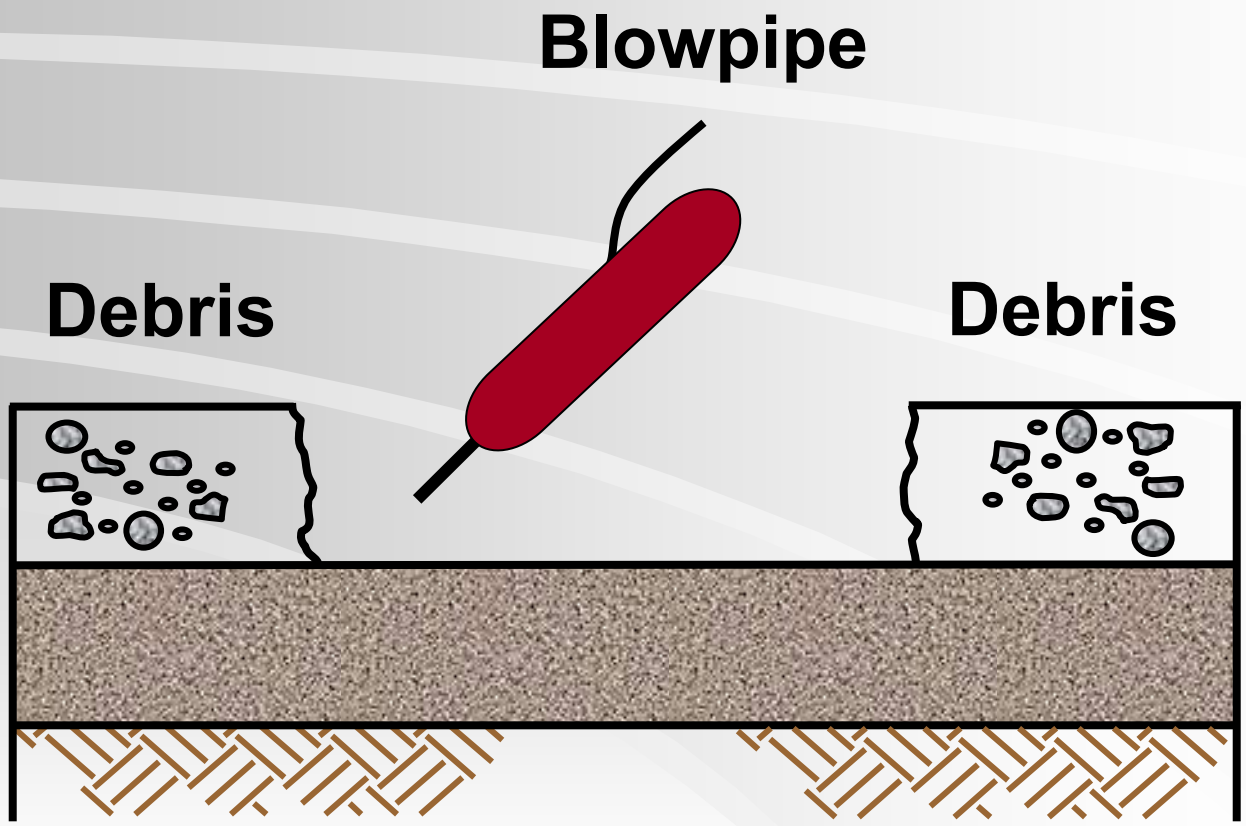
Consider width of equipment

Adjacent area-sound pavement

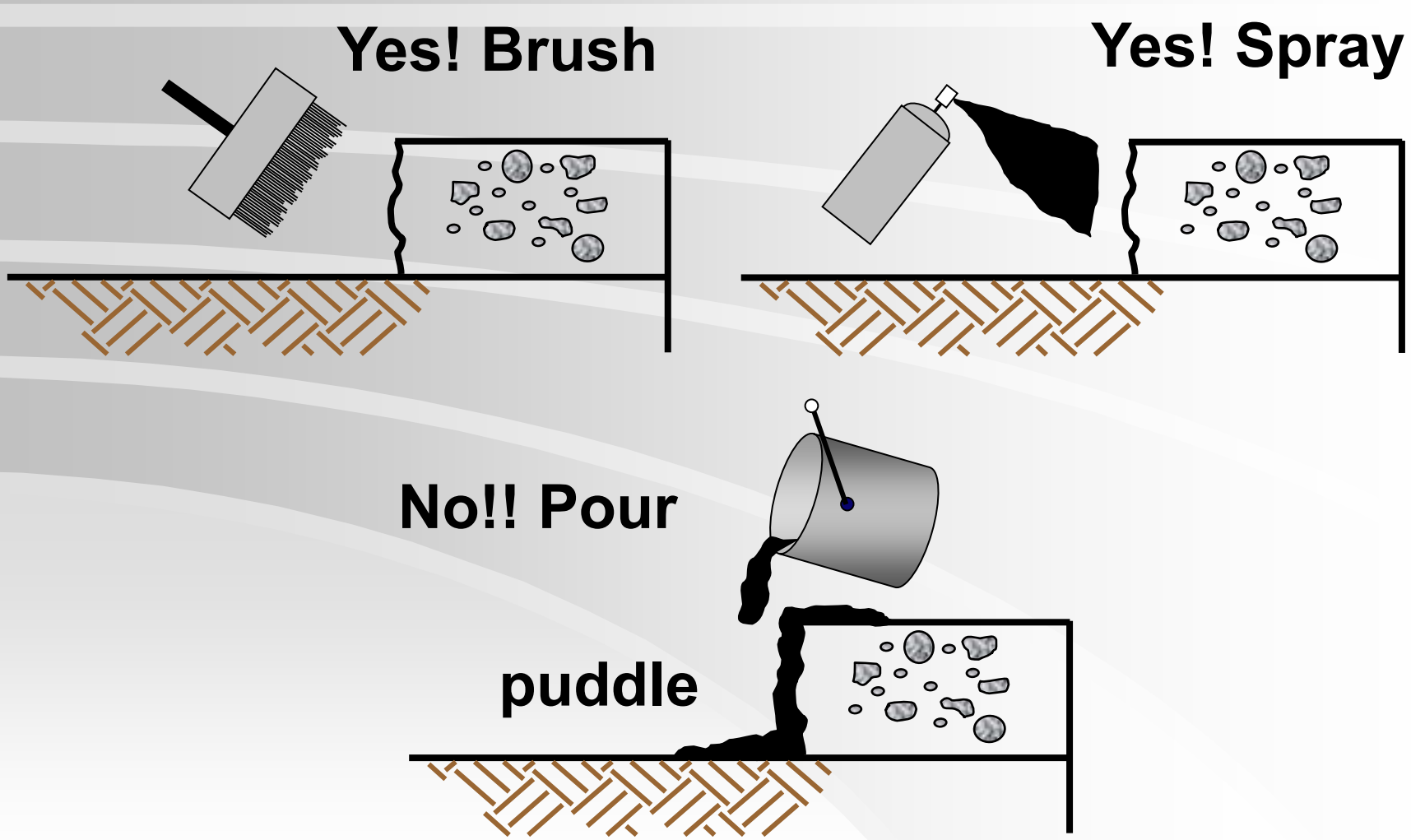
Cut Boundaries

Remove Material

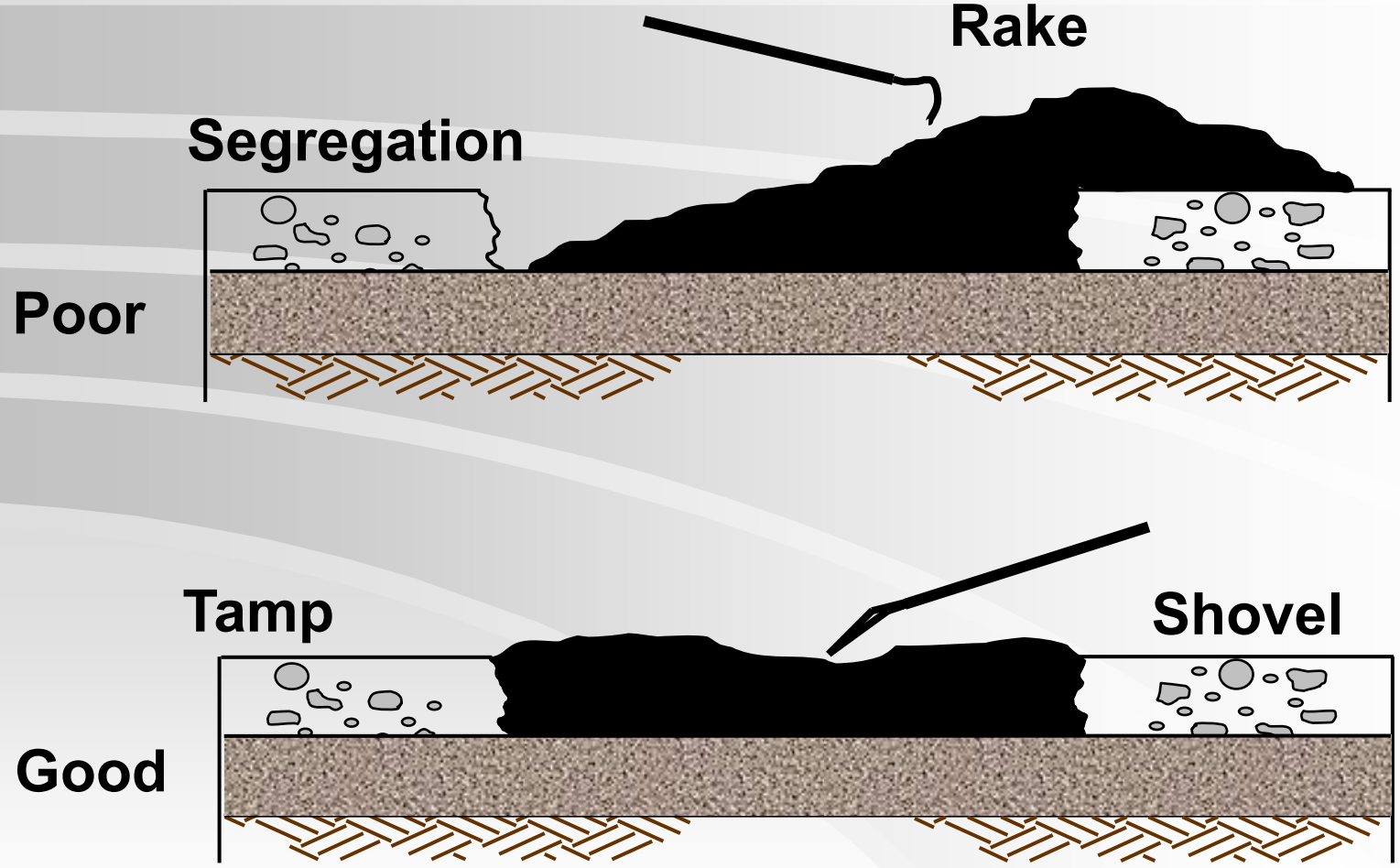
Clean Debris



Seal Edges

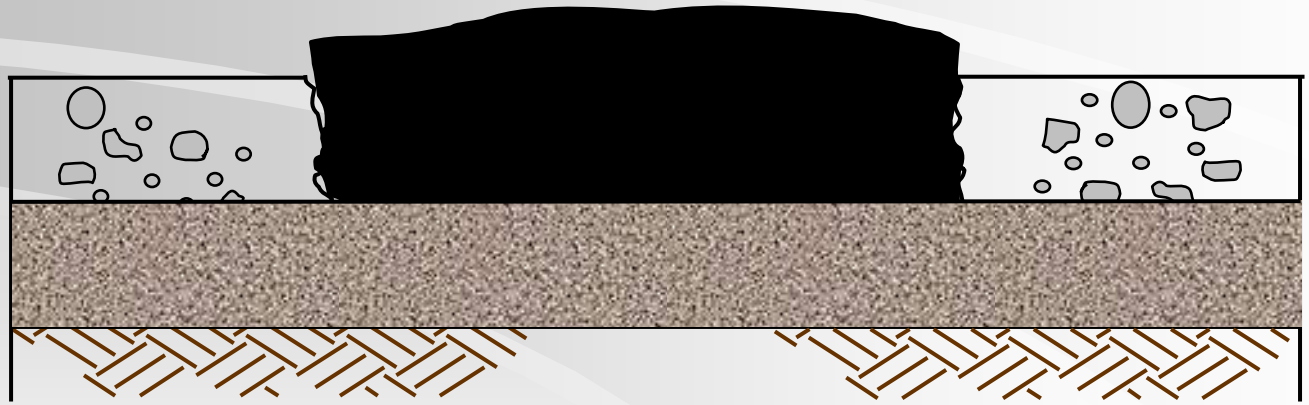


Material Placement

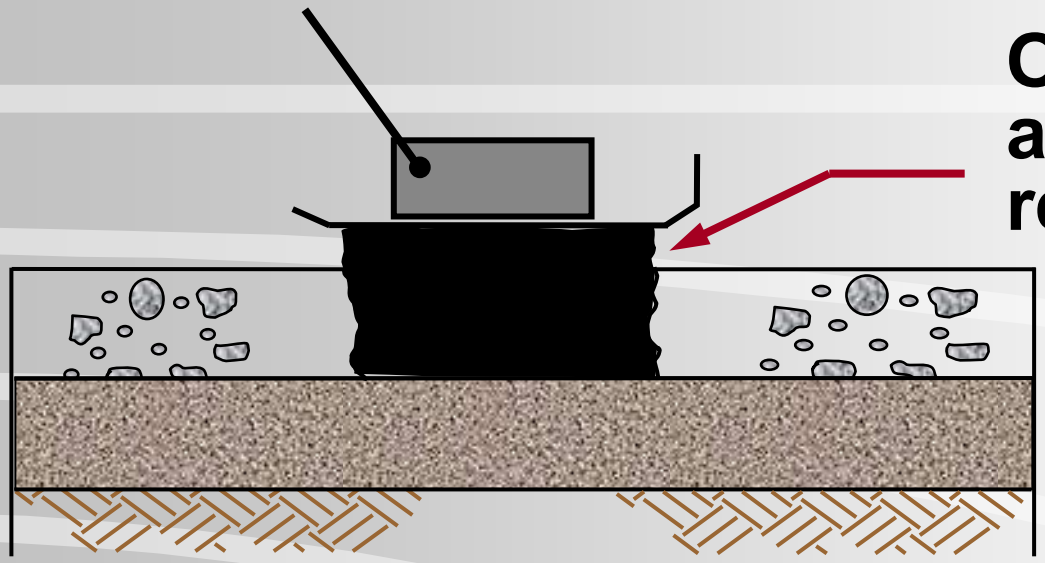


Sufficient Material for Compaction

Max lift – 6 in.

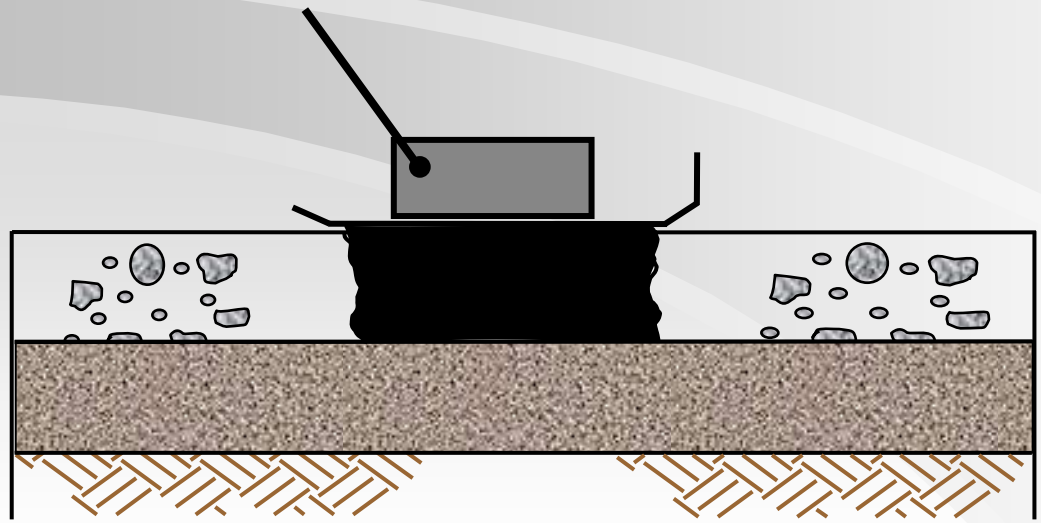


Compacting the Patch



Overfill by 25% to account for volume reduction

Good



Poor

Compacting the Patch

Automated Patching Equipment

Automated Patching Equipment

- Blow debris from hole
- Spray hole with binder for tack coat
- Blow aggregate and binder into hole
- Top off with a layer of uncoated aggregate to prevent tracking
- Roll to improve smoothness

Milling

Milling Equipment

Uses of Milling

- Removal of rutting
- Restoration of curb line
- Restoration of cross slope
- Restoration of surface friction
- Mass removal of HMA
- Improved bond between layers
- Better drainage profile

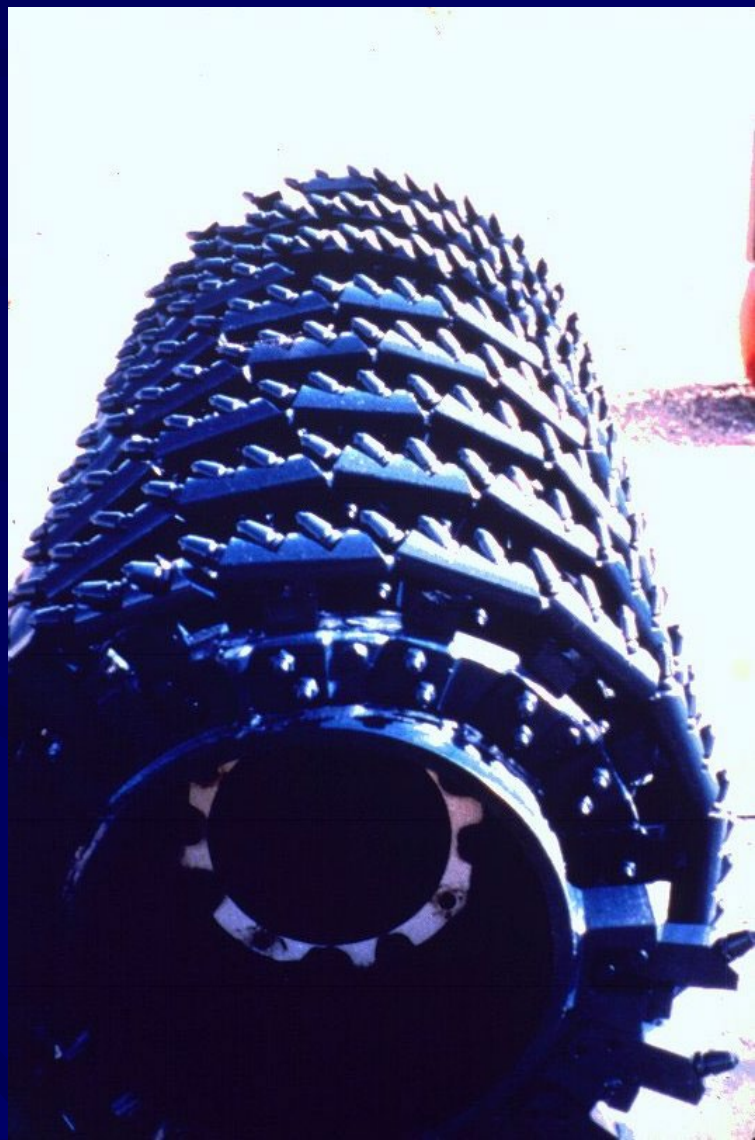
Mass Removal

Edge Milling to Maintain Curb Line

Surface Texture

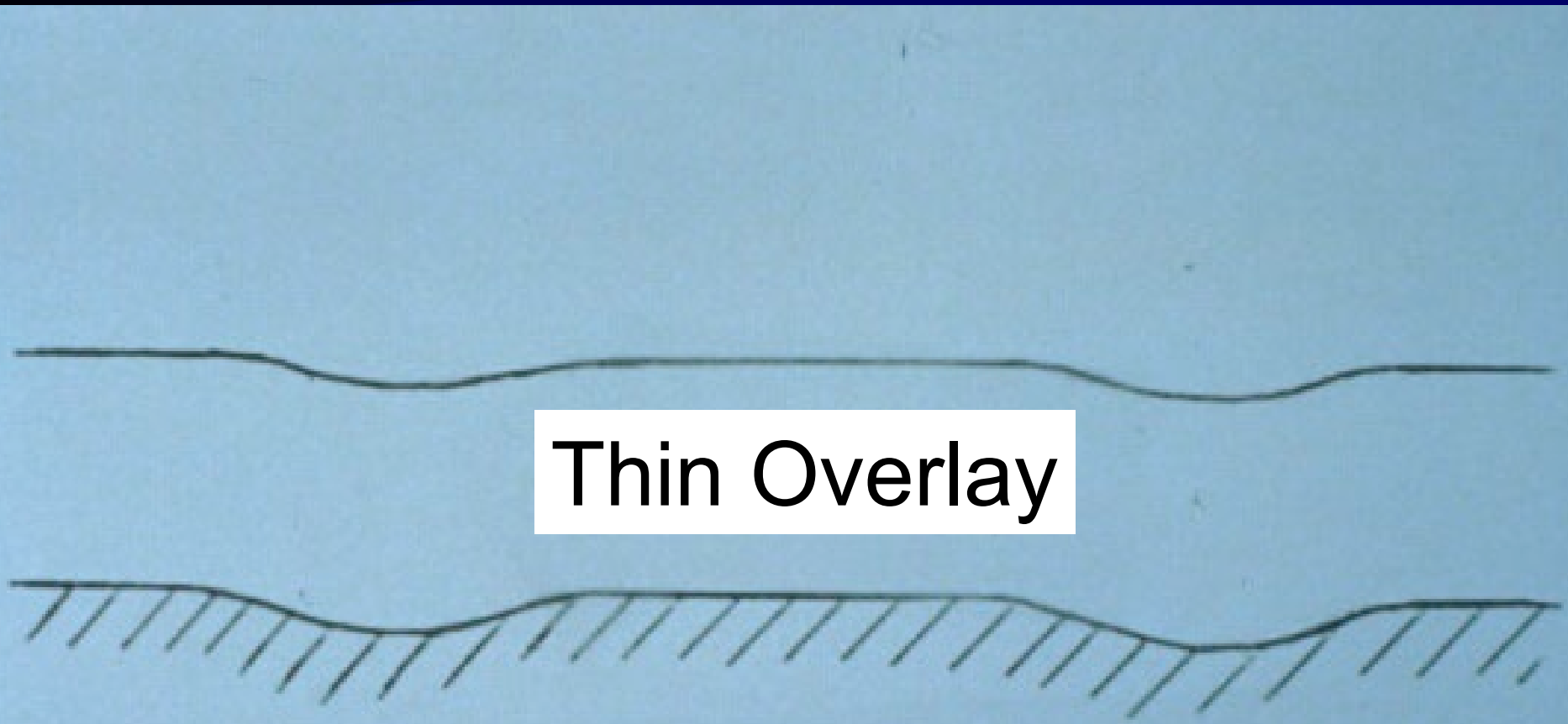
Function of:

- Carbide bit spacing
- Depth of cut
- Rotational speed of head
- Speed of travel



Too Rough – Excessive Milling Speed

Leveling Course


Thin Overlay
Existing Pavement


Cleaning

thank you!