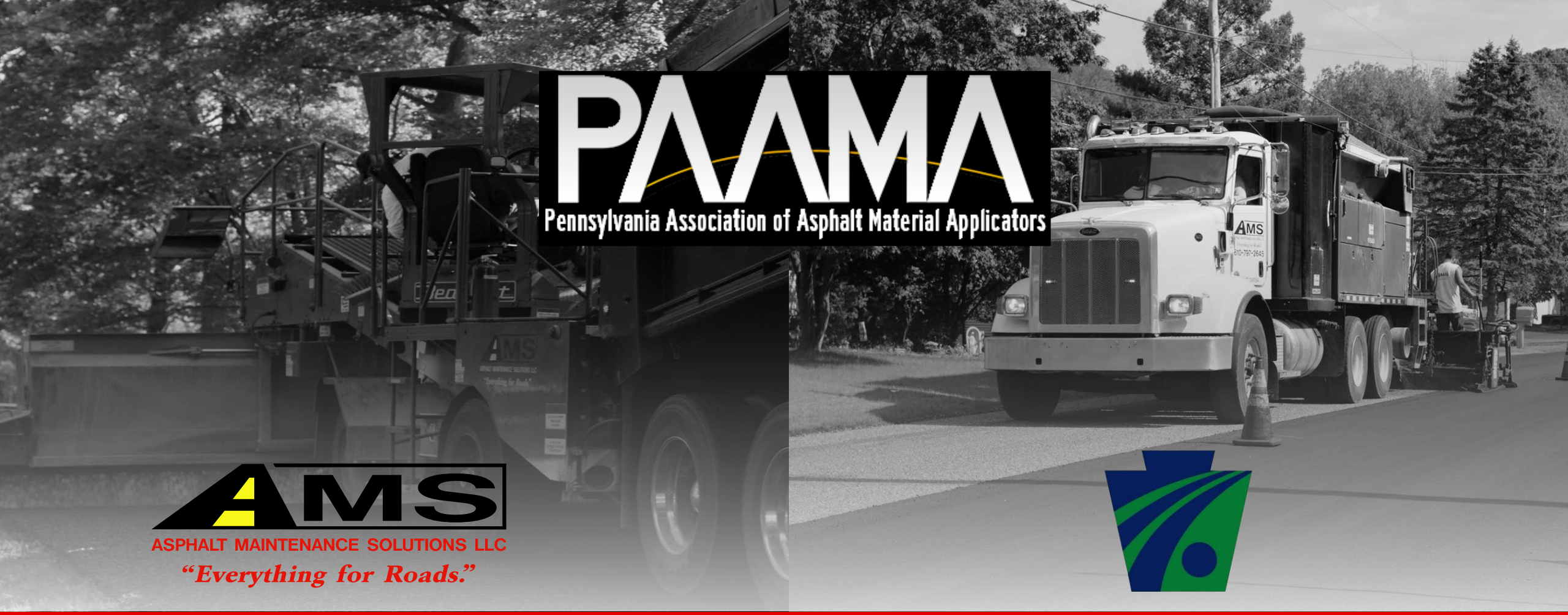
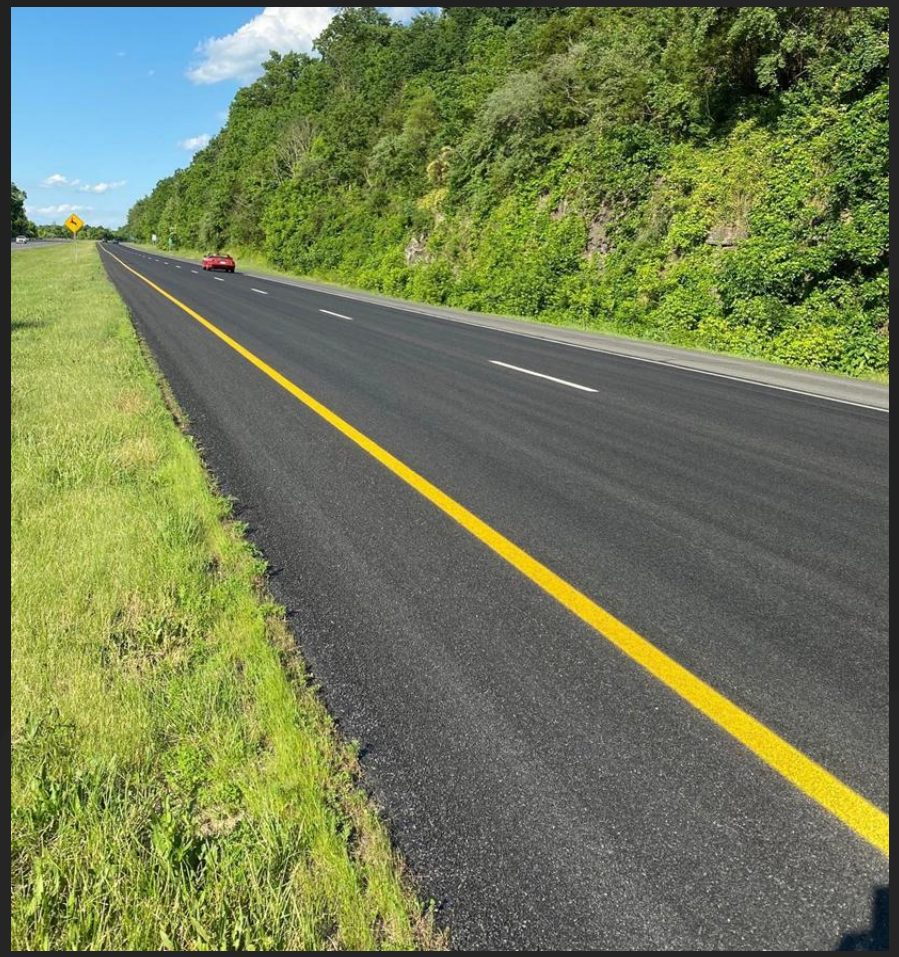


Cape Seals

The Owner's Manual for your Pavement Network

Presentation Objectives

- **Overview of Cape Seal**
  - What are Combination Treatments
  - What is a Cape Seal
- **Selecting the Right Roadway**
  - When and where Cape Seal is Appropriate
  - Key Considerations for Project Selection
- **Planning/Design Considerations**
  - Prep work
  - Selecting the correct applications with quality materials
    - Step 1: Bituminous Seal Coat
    - Step 2: Type A Micro Surfacing or Type II Slurry
- **Benefits**
  - Why Choose Cape Seal
  - Treatment Cost

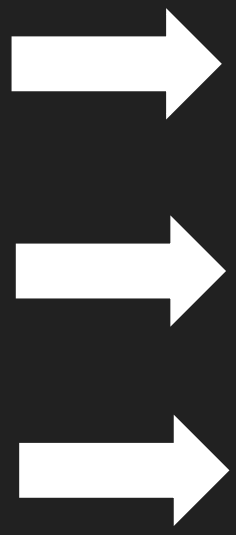


What are Combination Treatments

Combining two or more preservation treatments enhances functionality, extends service life, and allows for treating more deteriorated pavements effectively.

Surface Prep

- Spot Chip Seal
- Crack Seal
- Hot Pour Mastic
- Micro Rutt Fill
- Longitudinal Joint Repair



Treatment Options

- UTBWC
- High Performance Chip Seal
- Micro Surfacing
- Chip Seal

Treatment Options

- **Cape Seal** (Chip Seal + Slurry / Micro)
- Fog Seal
- Slurry Seal
- Double Chip Seal
- Double Micro

Why Use Combination Treatments?

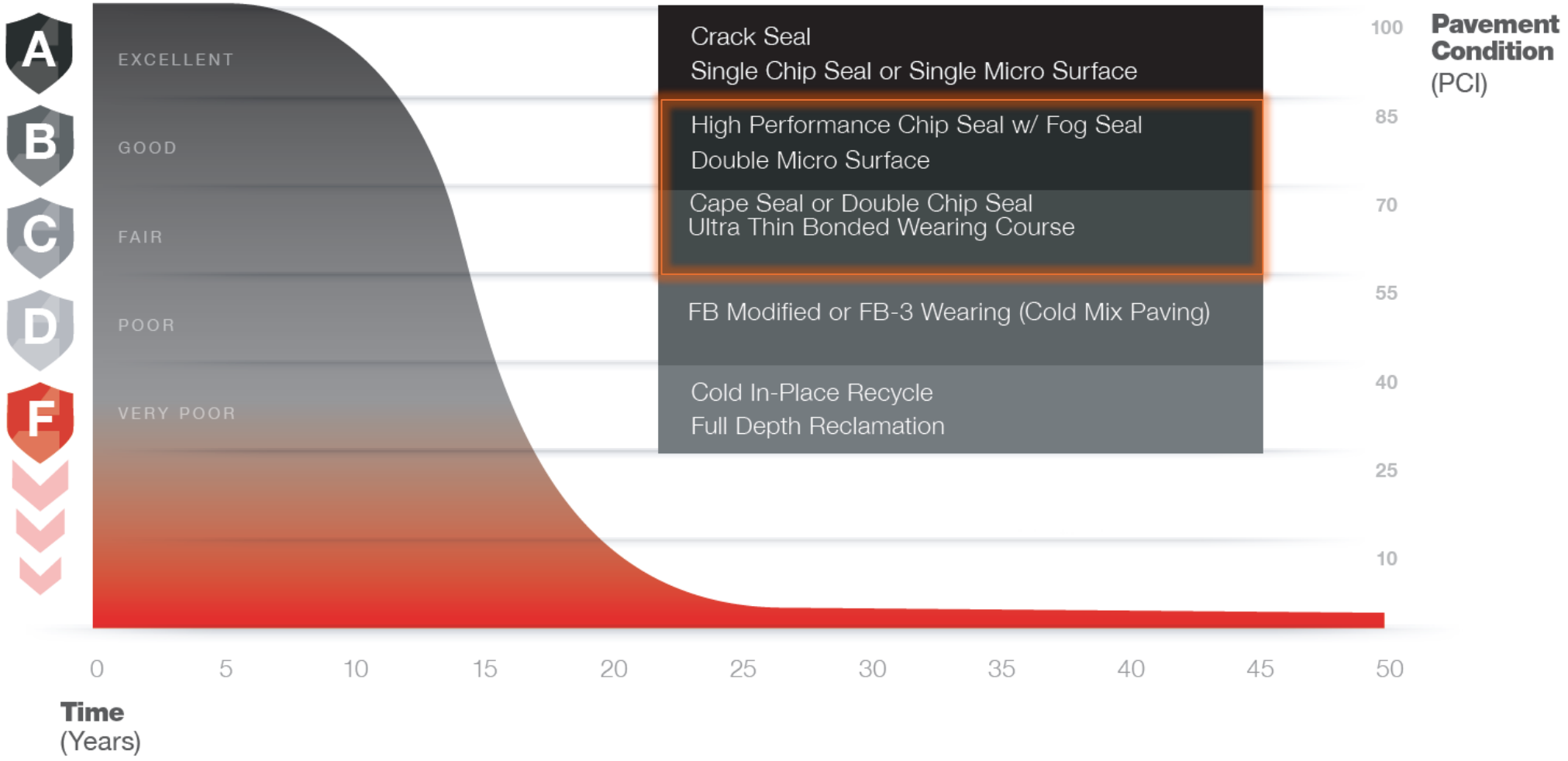
- Extends pavement service life significantly
- Targets multiple pavement distresses
- Expands treatment options for roadways in poorer condition
- Offers substantial cost savings compared to hot mix applications
- Improves public perception of preservation and enables use in areas previously considered unviable
- Suitable for higher ADT, urban, and residential roadways

What is a Cape Seal

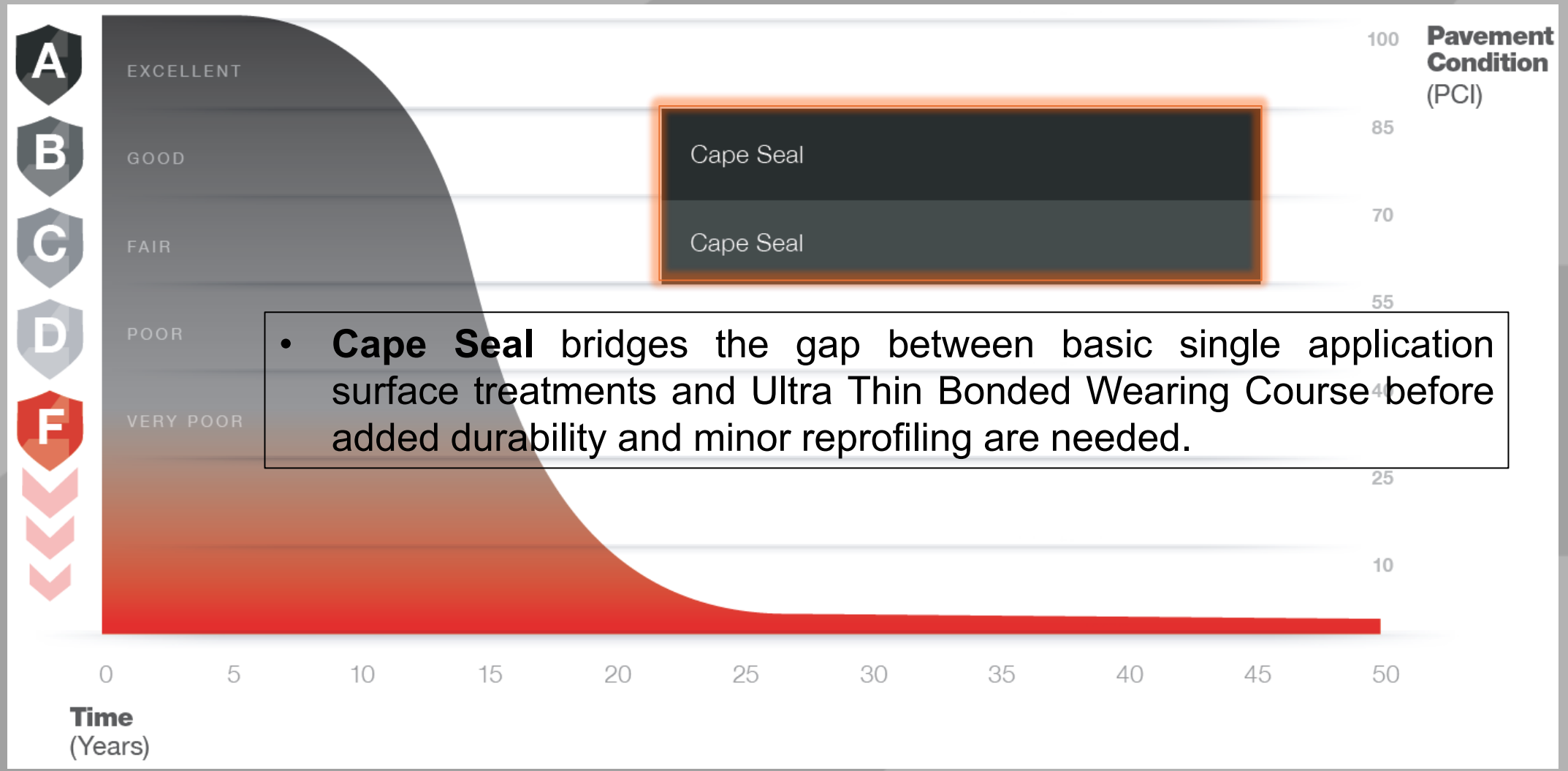
- A **Cape Seal** is a two-step pavement preservation process:
  - Step 1: Install a Bituminous Seal Coat (**Chip Seal**)
  - Step 2: Sweep the surface and apply either a **Type A Micro Surfacing** or **Quick Set Type II Slurry Seal**

Quick Set Type II Slurry over Chip Seal

When To Use a Cape Seal



When To Use a Cape Seal



- **Cape Seal** bridges the gap between basic single application surface treatments and Ultra Thin Bonded Wearing Course before added durability and minor reprofiling are needed.

When To Use a Cape Seal

PCI = B (70 – 84)

Fatigue Cracking - Low

Oxidation and Raveling – Moderate

Longitudinal & Transverse Cracking - Low

PCI = C (55-69)

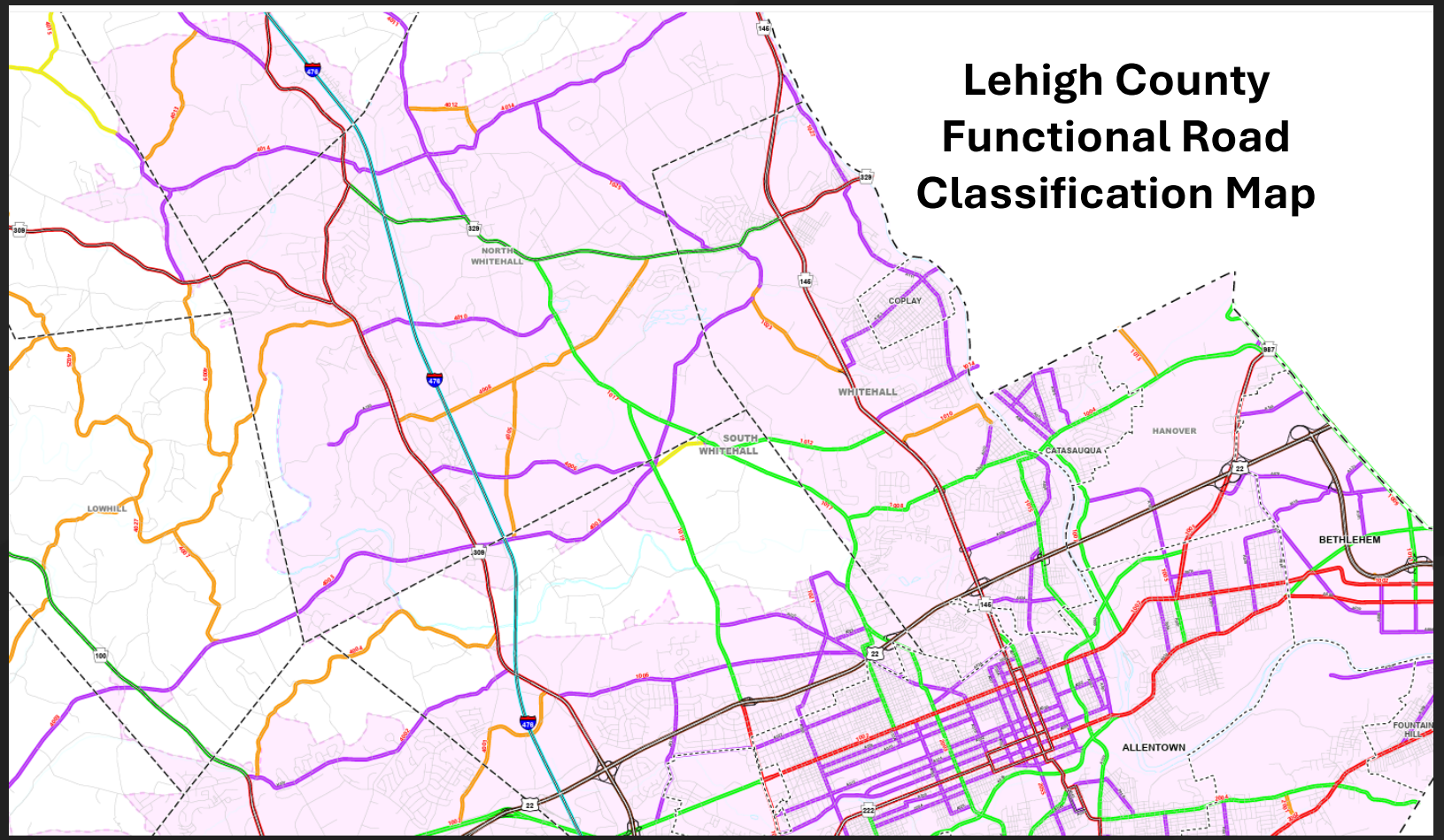
Fatigue, Longitudinal & Transverse Cracking

Oxidation and Raveling – High

Longitudinal & Transverse Cracking

Where To Use a Cape Seal

Minor Arterial, Major and Minor Collector Roads
ADT < 10,000



PAAMA
Pennsylvania Association of Asphalt Material Applicators

Example of Where To Use a Cape Seal

Applied to Minor Arterial, Major Collector, and Minor Collector Roads

Example of Where To Use a Cape Seal

PennDOT Local Roads Traveling Through Boroughs and Residential Areas

PennDOT Local Road Through Borough

PennDOT Local Road Through Residential Area

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Considerations When Using Cape Seals

- Site selection should be based on chip seal suitability, as the chip seal serves as the foundational layer.
- Recommended for roads with ADT < 10,000
- Other treatments should be considered if any of the following exist on the roadway:
  - Rutting
  - Shoving
  - Loss of profile

Prep Work

- **Base Repairs**
  - Mill and patch using 19mm material
- **Rubberized Crack Sealing**
  - Seal *working* cracks and joints wider than ¼ inch
  - Fine cracks do **not** need to be sealed
- **Hot Pour Mastic**
  - Use for cracks or joints wider than ¾ inch

Alternative Approaches

Prior to a Cape Seal or other Combination Treatment, PennDOT Maintenance Forces can:

- Pave roads edge to edge
  - Using 19mm high RAP (≤50%) mix
- These high RAP mixes are not suitable as a wearing surface on their own, but they provide a cost-effective surface prep prior to a combination treatment.

Step 1
Bituminous Seal Coat

- Traditionally completed with **AASHTO #8** aggregate.
- For success on high ADT roads, a **single-sized, cubical, and durable ⅜-inch aggregate** should be used:
  - Promotes more uniform asphalt application rates
  - Creates an open surface ideal for accepting **Slurry Seal** or **Micro Surfacing**

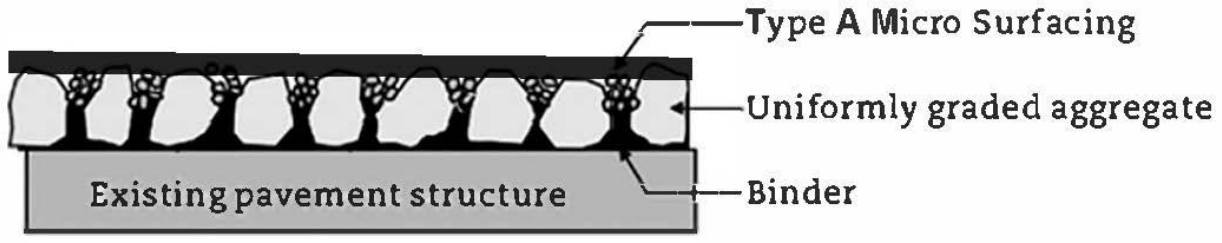
⅜-inch Single Size, Cubical, and Durable

AASHTO #8

Step 2 - Type A Micro Surfacing or Type II Slurry

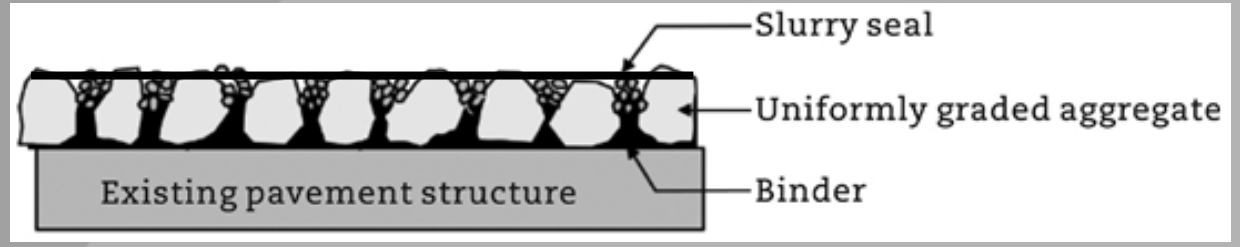
Type A Micro Surfacing

- Slightly more expensive
- Applied at a thicker depth
  - Allows material to be “stacked”
- To be used on highest ADT roads
- Applied as a single application
- Polymer-modified



Quick Set Type II Slurry

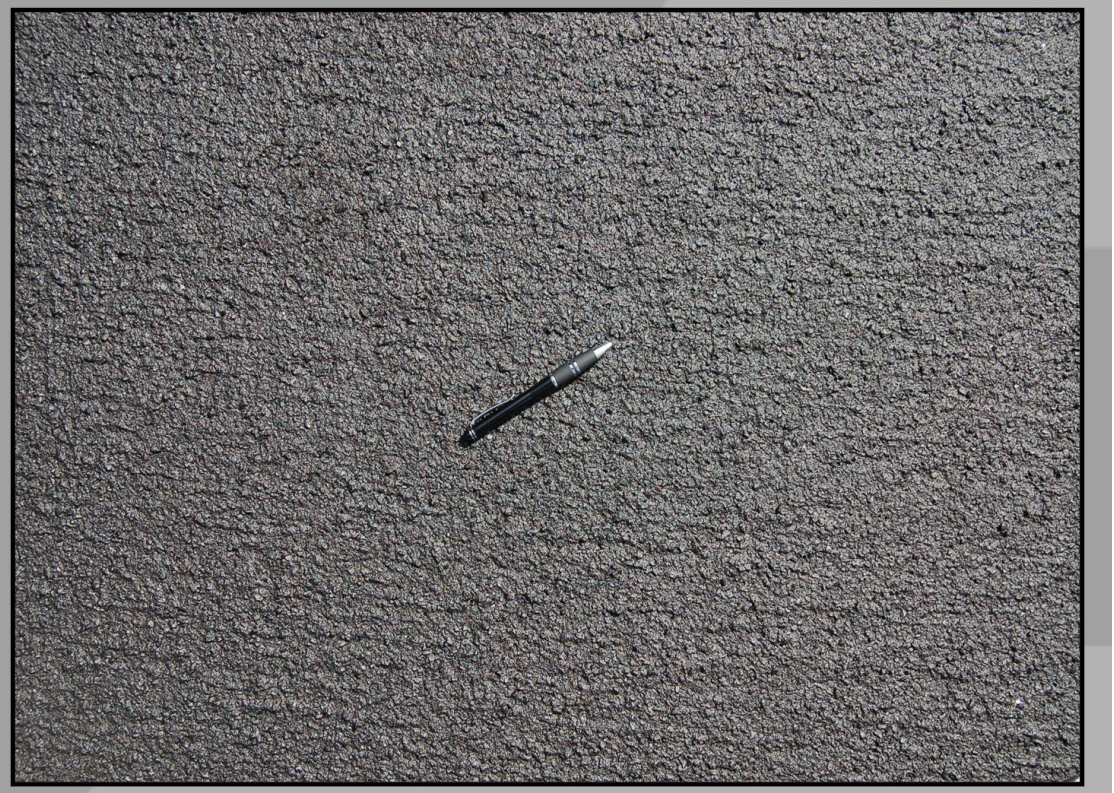
- More cost-effective
- Suitable for most ADT levels
- Uses less material – fills chip seal voids only
- Higher asphalt residue
- Not polymer-modified



Benefits of Cape Seals

Approx. $5.00 to $6.00 per SY
8–12 years of service life

- More resistant to reflective cracking
- Smooth, rich black finish with high skid resistance
- Will not delaminate - interlocks with the chip seal layer
- Combines the sealing qualities of a Chip Seal with the smooth surface of Micro Surfacing or Slurry Seal
- Ideal for urban settings where a stand-alone Chip Seal may not be well received, but the sealing benefits are desired



Thank You!

AMS

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"Everything for Roads."

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