

# Aggregate Applications

---

---

---

---

---

## Aggregate Applications

- Road Bases
- Erosion Control
- Portland Cement Concrete
- Portland Cement Manufacturing
- Hot Mix Asphalt
- Cold Mix Asphalt
- Mineral Filler
- Waste Neutralization
- Seal Coat Applications
- Drainage Blankets
- Roofing Shingles
- Glass Manufacturing
- Soil Stabilization
- Flue Gas Desulfurization
- Water Filtration
- Architectural Stone
- Toothpaste, Make-up...



---

---

---

---

---

## Functions of a Road

- Safely Carry Intended Loads
- Resist Rutting / Deformation / Bleeding / Pumping
- Smooth
- Resist Weathering
- Prevent Moisture Infiltration
- Resist Cracking
- Protect Underlying Areas

---

---

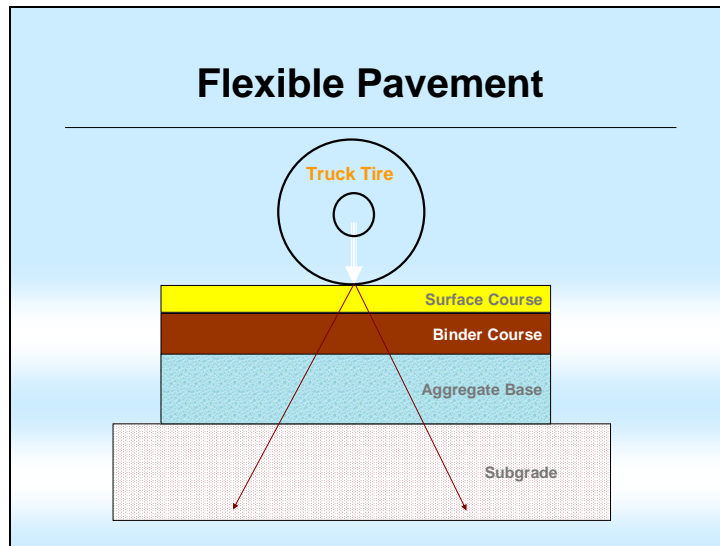
---

---

---

---

## Flexible Pavement



---

---

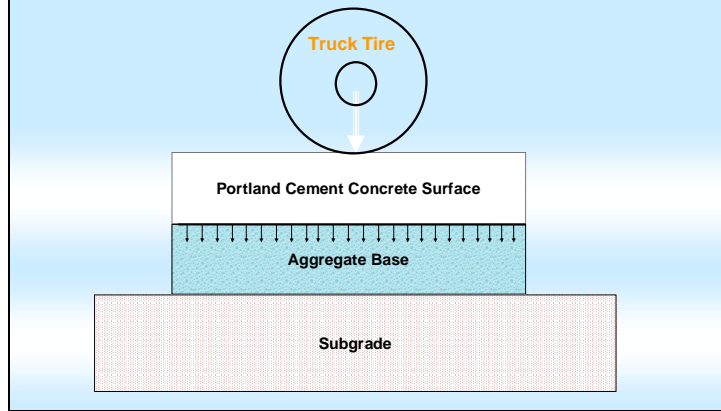
---

---

---

---

## Rigid Pavement



---

---

---

---

---

---

## Kentucky Bases

- Dense - Graded Aggregate (DGA)
- Crushed Stone Base (CSB)



---

---

---

---

---

---

### **Dense-Graded Aggregate (DGA)**

- Well-graded material
- Protect the underlying subgrade
- Designed to keep moisture out
- Support construction traffic
- Provide roadway stability

---

---

---

---

---

---

### **Crushed Stone Base (CSB)**

- Designed to let moisture flow
- “Gap-graded” material with less fines
- Tendency to segregate
- Protect the underlying subgrade
- Support construction traffic
- Provide roadway stability

---

---

---

---

---

---

## Specifications

---

- Purpose
  - Communicate requirements
- Unique to each product
  - DGA
  - CSB
- Unique to each material
  - Concrete
  - Asphalt
  - Aggregate

---

---

---

---

---

---

## Gradation Specs

---

- Communicate size requirements
- Sizes specified as % Passing a sieve size
- Different specifications for different products

---

---

---

---

---

---



## Other Specifications

---

- Deleterious materials – shale, coal/lignite
- Soundness
- L.A. Abrasion
- Friable particles
- Percent passing No. 200 sieve
- Lightweight particle
- Fine Aggregate Angularity

---

---

---

---

---

---

## Other Specifications

---

- Concrete Freeze/Thaw
- Concrete Expansion Test (ACR)
- Crushed Particles
- Absorption
- Sand Equivalent
- Polish Resistance
- Acid Insoluble

---

---

---

---

---

---

## Sampling is Critical

---

- **Representative samples must be obtained using proper sampling techniques!**

---

---

---

---

---

---

## Sampling is Important!

---

- Proper sampling techniques are essential
- Samples must be representative of the material

---

---

---

---

---

---

