

Aggregate Applications

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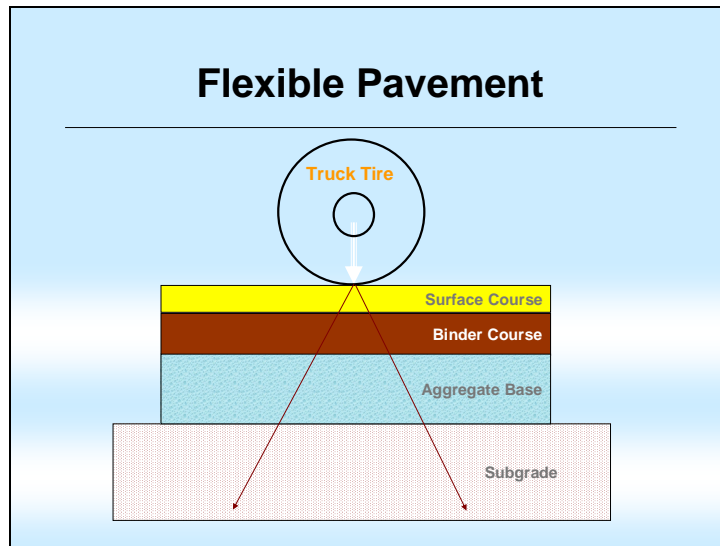
- Road Bases
- Erosion Control
- Portland Cement Concrete
- Portland Cement Manufacturing
- Hot Mix Asphalt
- Cold Mix Asphalt
- Mineral Filler
- Waste Neutralization
- Seal Coat Applications
- Drainage Blankets
- Roofing Shingles
- Glass Manufacturing
- Soil Stabilization
- Flue Gas Desulfurization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



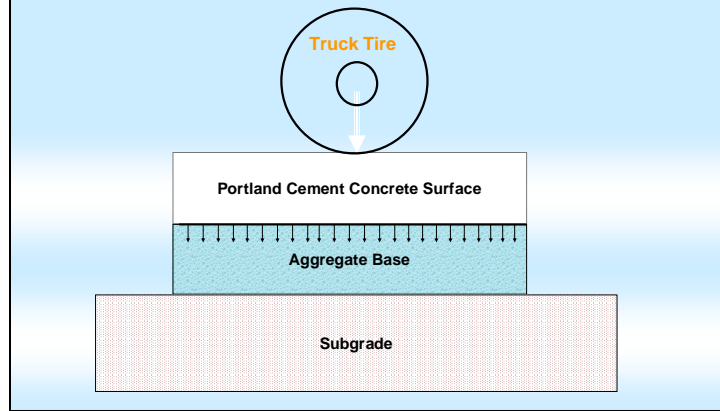
Functions of a Road

- 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

Specifications

Sieve Size	% Passing Specs	
	CSB	DGA
2 1/2"	100	----
1 1/2"	90-100	----
1"	----	100
3/4"	60-95	70-100
3/8"	30-70	50-80
No. 4	15-55	30-65
No. 30	5-20	10-40
No. 200	0-8	4-13

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

Proper
Sampling is
CRITICAL!
