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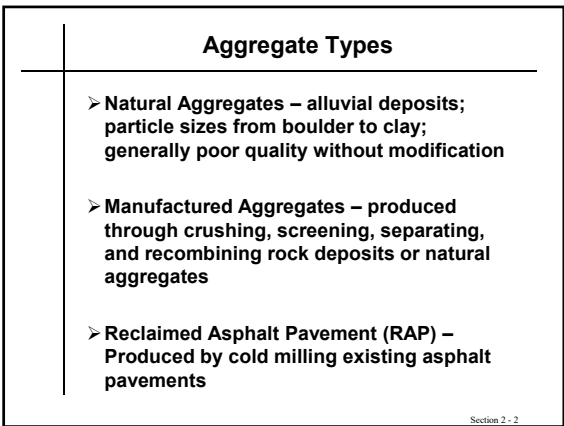
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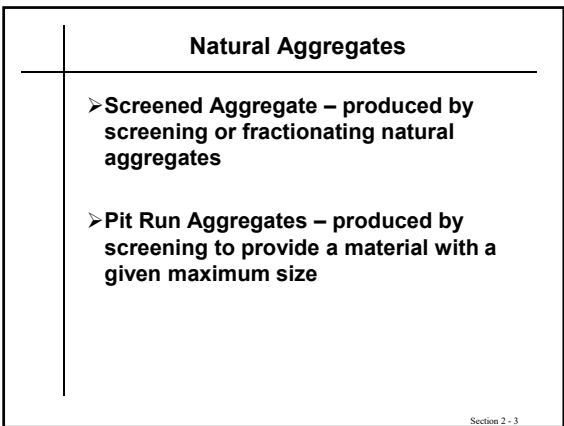
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### Manufactured Aggregates

- **Quarried Aggregates** – produced by blasting and crushing rock deposits
- **Crusher Run Aggregates** – natural aggregate crushed to provide a material with a given maximum size; contains both crushed and uncrushed particles

Section 2 - 4

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### Manufactured Aggregates (continued)

- **Crushed Aggregates** – produced by crushing larger sized particles
- **Treated Aggregates** – aggregates treated with an additive to improve strength or durability

Section 2 - 5

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### Aggregate Angularity

Pit Run or Screened:  
Rounded

Crushed: Angular



Section 2 - 6

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### Reclaimed Asphalt Pavement

- Used straight or in combination with other granular materials
- If used in combination with other materials, typically limited to 50% maximum to maintain workability and compactability
- RAP properties can vary based upon the source layer(s) included.
- Use of RAP will be designated on plans.

Section 2 - 7

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### Aggregate Crushing

- Mechanisms:
  - ▶ Grinding
  - ▶ Shear
  - ▶ Compression
  - ▶ Impact
- For RAP, only Compression type are allowed (WYDOT 401.3.2)

Section 2 - 8

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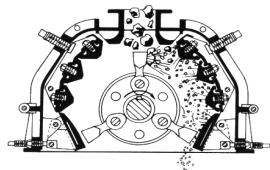
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### Impact



Section 2 - 9

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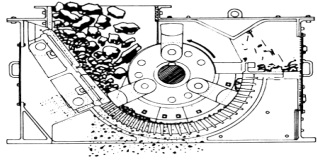
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### Grinding



Section 2 - 10

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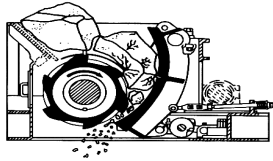
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### Shear & Compression



Section 2 - 11

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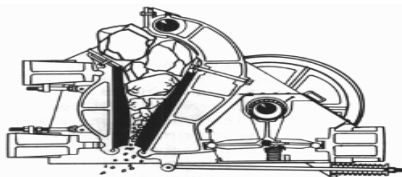
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### Compression & Impact



Section 2 - 12

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## Aggregate Crushing



Section 2 - 13

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## Aggregate Fractions

- Coarse Aggregate – larger than #4 sieve
- Fine Aggregate – smaller than #4 sieve

Section 2 - 14

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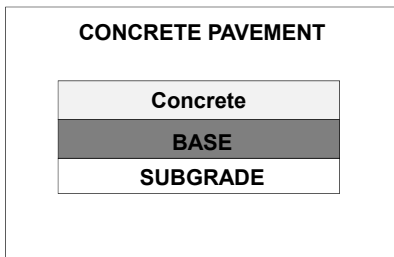
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## Pavement Layers



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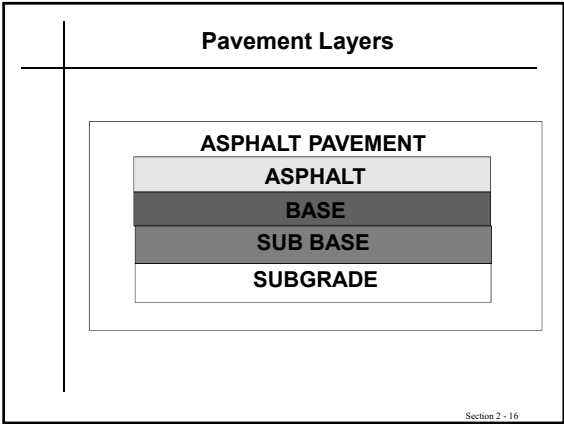
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- Aggregate Uses**
- 
- **Subbase**
    - ▶ **Untreated**
    - ▶ **Lowest Layer**
    - ▶ **Lowest Quality**
    - ▶ **Not Always Used**
- Section 2 - 17

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- Aggregate Uses (continued)**
- 
- **Select Embankment – SE**
  - **Borrow Special Excavation – BSE**
  - **Subbase – SB**
  - **Pit Run Subbase – PRSB**
  - **Crusher Run Subbase – CRSB**
- Section 2 - 18

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**Aggregate Uses (continued)**

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- **Base**
  - ▶ **Untreated or Treated**
  - ▶ **Placed on top of subbase or subgrade**
  - ▶ **Higher quality than subbase**

Section 2 - 19

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**Aggregate Uses (continued)**

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- **Crusher Run Base – CRB**
- **Crushed Base – CB**
- **Pit Run Base – PRB**
- **Cement Treated Base – CTB**
- **Plant Mix Base – PMB**

Section 2 - 20

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**Aggregate Uses (continued)**

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- **Asphalt Concrete**
  - ▶ **High quality requirements**
  - ▶ **Asphalt binder**
  - ▶ **Surface layer**

**Plant Mix Pavement – PMP**  
**Warm Plant Mix - WPM**  
**Plant Mix Wearing Course – PMWC**

Section 2 - 21

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|--|-----------------------------------|
|  | <b>Aggregate Uses (continued)</b> |
| <ul style="list-style-type: none"> <li>➤ <b>Concrete Pavement</b> <ul style="list-style-type: none"> <li>▶ <b>High Quality requirements</b></li> <li>▶ <b>Cement/ Fly Ash Binder</b></li> <li>▶ <b>Surface layer</b></li> </ul> </li> <br/> <li><b>Portland Cement Concrete Pavement – PCCP</b></li> <li><b>Coarse Aggregate – CA-PCCP</b></li> <li><b>Fine Aggregate – FA-PCCP</b></li> </ul> |                                   |
| <small>Section 2 - 22</small>  |                                   |

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|  | <b>Aggregate Uses (continued)</b> |
| <ul style="list-style-type: none"> <li>➤ <b>Structural Concrete</b> <ul style="list-style-type: none"> <li>▶ <b>High quality requirements</b></li> <li>▶ <b>Cement/ Fly Ash Binder</b></li> <li>▶ <b>Bridges, culverts, pipes, foundations, some paving</b></li> </ul> </li> </ul> |                                   |
| <small>Section 2 - 23</small>  |                                   |

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|   | <b>Aggregate Uses (continued)</b> |
| <ul style="list-style-type: none"> <li>➤ <b>Seal Coat Aggregate</b> <ul style="list-style-type: none"> <li>▶ <b>Untreated or Treated</b></li> <li>▶ <b>Quality requirements depend upon type</b></li> <li>▶ <b>Seal Coats</b> <ul style="list-style-type: none"> <li>◆ <b>Chip Seals</b></li> <li>◆ <b>Slurry Seals and Microsurfacing</b></li> <li>◆ <b>Bituminous Surface Treatments</b></li> </ul> </li> </ul> </li> </ul> |                                   |
| <small>Section 2 - 24</small>   |                                   |

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### Aggregate Uses

- **Miscellaneous uses**
  - ▶ **Untreated or Treated**
  - ▶ **Quality requirements dependent upon use:**
    - **Maintenance Stockpiles**
    - **Maintenance Sanding**
    - **Drainage Aggregates**
    - **Erosion Control Concrete**
    - **Riprap**
    - **Backfill**
    - **Slope Protection**

Section 2 - 25

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