Shingles Material Specifications

- Tear-off shingle scrap must be sorted and any other roofing debris removed:
  - nails, plastic, metal, wood, coal tar epoxy, rubber materials, etc.
- Deleterious Materials
  - Maximum 0.5% by Total Weight:
    - excessive dirt, debris, concrete, metals, glass, paper, rubber, wood, plastic, soil, brick, tars, or other contaminating substances.

Sample and Test for Asbestos
- Less than one (1%) percent of asbestos containing material
  - In accordance with Federal, North Carolina, and Local regulations.
- Use NC-accredited Asbestos Inspectors or Roofing Supervisors to sample
  - Asphalt Contractor must maintain records
  - All documentation will be subject to review by the Department.

Stockpile Gradation Testing
- Tests Done AFTER the Grinding Process
  - For Checking Adequacy of Grinding Process
  - Specification: 100% passing 3/8” sieve

“CORN FLAKES” -1/2”
“COFFEE GROUNDS” -3/8”
Mix Specifications

• With RAS, Must Meet Both of the Following Requirements:
  1. Maximum by Weight of Mix = 6%
  2. Contributed/Recycled Binder Content
     ≤20% Base PG Binder Required
     21 – 30% Grade Bump (Softer) Required
     >30% Engineer will determine

RAS Contributed Binder

- AC Content
  - RAP = 4 – 8%
  - PG 82 ~ 100
  - PG 124 ~ 148

- PRAS = 21 – 26%
- MRAS = 16 – 20%

RAP

<table>
<thead>
<tr>
<th>RAP</th>
<th>Shingles</th>
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<tbody>
<tr>
<td>PG 82 ~ 100</td>
<td>PG 124 ~ 148</td>
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Engineer will determine