Carpet Recycling 101

Wyatt Rollins
Shaw Industries
Brief History of Carpet Recycling

- Formation of CARE in 2002
- Development of Collector Network
- Development of Carpet Analyzers
- Development of Other Technologies
- Development of End Use Markets and Competition
- Recent Rise of PET
Carpet Construction

- Primary Backing
- Face Fiber
- Latex/Filler
- Secondary Backing
- Finished Carpet
Residential vs Commercial

- Market Differences (living space vs working space)
- Sales Channel Differences (dealer vs project)
- Product Construction Differences
  - Backing types (broadloom vs tile)
  - Face Fiber types (cut pile vs loop)
# Face Fiber Types & Trends

<table>
<thead>
<tr>
<th>Fiber Type</th>
<th>2007 est.</th>
<th>2015 est.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nylon 6</td>
<td>40%</td>
<td>35%</td>
</tr>
<tr>
<td>Nylon 6,6</td>
<td>45%</td>
<td>20%</td>
</tr>
<tr>
<td>PP</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>PET</td>
<td>5%</td>
<td>35%</td>
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</tbody>
</table>
Collectors & the Collection Process

- Who are the Collectors?
- How do they get PCC material?
- What do they do with it?
- Who do they sell it to?
Processing Technologies

- De-polymerization
- Shearing
- Shredding & Hammer-milling
- Shredding
- Emerging Technologies
End Use Markets & Drivers

- Carpet to Carpet
  - Face Fiber
  - Backing

- Plastics Markets – Compounders
  - Quality Matters
  - Virgin Material Price Ceiling
  - Post-Industrial Material Price Ceiling
  - Demand Side “Pull” vs Supply Side “Push”

- Fiber Applications
  - Carpet Cushion
  - Other Applications

- Waste to Energy
Current Trends

- PET % Increasing
- Voluntary Product Stewardship (VPS)
- Extended Producer Responsibility (EPR)
- Virgin Material (Oil) Prices
Questions?