



# **Recycling Economics**

The Challenge of Carpet



# **A Viable Raw Material**

- **Plentiful**
- **Consistent**
- **Economical**
- **Suitable for Existing Processes**



# Market Dynamics

- “Green” Does Not Sell
- Equal To or Better
- Ability to Compete
- Meet the Customers Needs



# Raw Material Forms

- Separated Material
- 100% Carpet



# Separated Material

- Target Component – High Value
- Other Components – Low Value
- Limited Market
- Life Cycle Analysis
- Landfill Issue



# **100% Carpet**

- All Components Used
- Minimizes Required Processing
- Minimizes Cost
- Minimal Landfill Burden

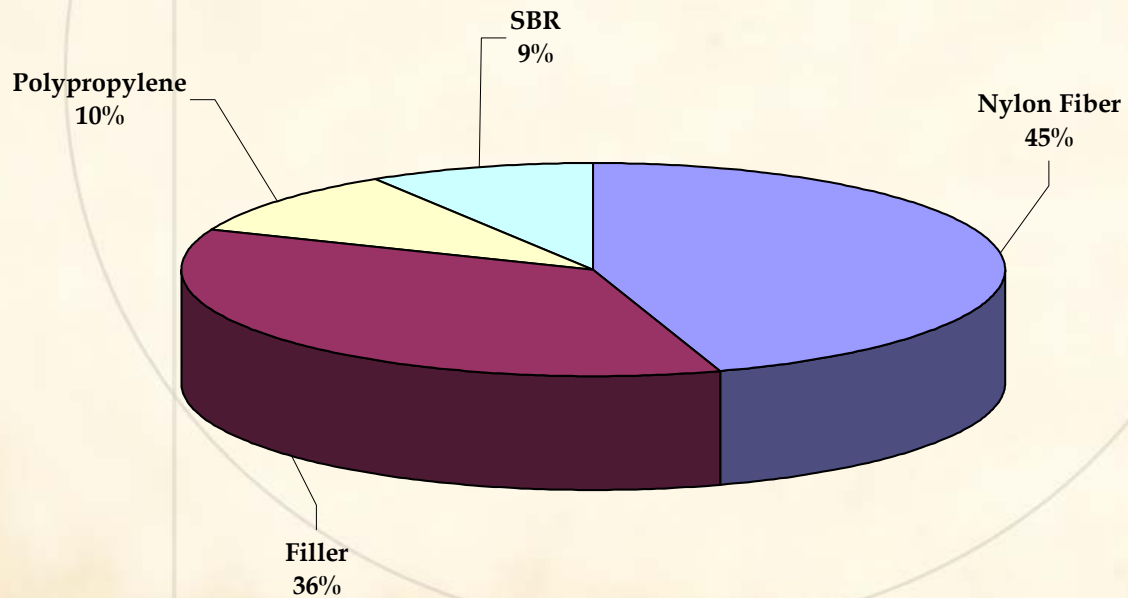


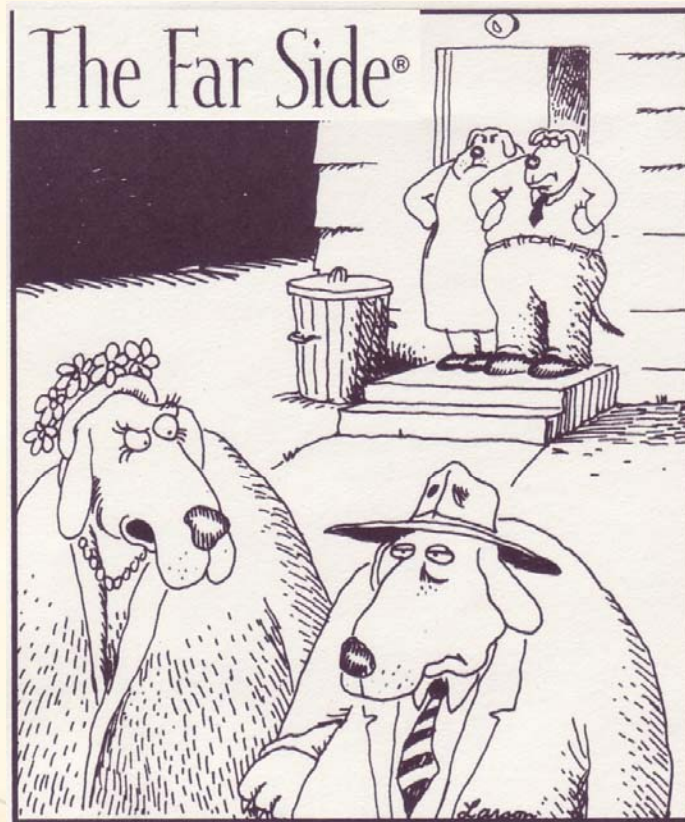
# Carpet Components

- Active Components
- Fillers
- Others



# Typical PC Carpet





"One of the nicest evenings I've ever spent at the Wilson's ... and then you had to go and do that on the rug!"



# Component Properties

- Active Components
- Fibers
- High Melts
- Low Melts
- Fillers



# Size Reduction

- Required By Most Processes
- Shredding
- Densification
- Maintain Integrity of Material



# Shredding

- First Step for All Processing
- Acceptable for Some Processes
- The Sandpaper Factor



# Shredded Carpet





# Densification

- Easier to Store and Handle
- Minimize Heat History
- Minimize Cost
- Extrusion, Tub, Compression



# Densified, 100% Carpet





# Compressed Carpet Pellets

- Minimum Heat History
- Fiber Integrity Maintained
- Composition Maintained
- Material Consistency
- Property Flexibility



# **Carpet Pellet Process**

- **Carpet Bales In**
- **Carpet Pellets Out**



# **Carpet Pellet Process**

- **Shredding/Grinding**
- **Accumulation**
- **Metering**
- **Pellet Formation**
- **Product**



# Compressed Carpet Pellets

- 100% PC Carpet
- 0.25-0.5 Inch Diameter
- 0.5-0.75 Inch Long
- 16 +/- 2 Pounds per Cubic Foot
- Adjustable Friability



# Compressed Carpet Pellets





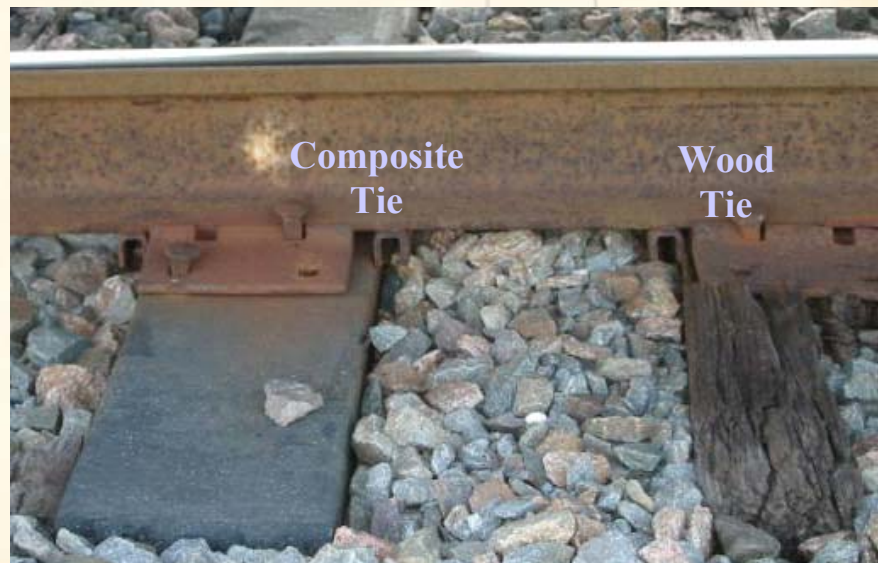
# Carpet Pellets

- Cost Effective
- Easy to Handle
- Process Compatible
- Fiber Component
- Low/High Melts
- Low Heat History



# Products

- Plastic Lumber
- Injection Molding
- Marine Profiles
- Sheeting
- Engineered Profiles
- Rail Ties
- Pallets
- Roofing



Composite Tie

Wood Tie

