

Utilization of Latex Backings from Recycled Carpet

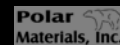


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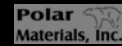
Introduction...

- **POLAR MATERIALS**
--> recycles carpet backing
- **VITRO MINERALS**
--> recycles glass



Some Numbers...

- **Residential carpet is 50/50 +/- Face Fiber and Latex backing.**
- **Face Fiber is 60% Nylon with a growing % of PET.**



Trends...

- **Commercial carpet is trending towards Tile, which is backed by PVC or polyethylene.**
- **Residential carpet is trending towards PET face fiber.**



Carpet shredders/shearers intake is >90% residential latex-backed broadloom...

- **Driver is fiber recovery.**
- **Going forward, this will not change much**



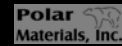
Carpet Shearing

- **Number of machines will grow from 12 to 25 in 2011.**
- **Yield on flats is 20%.**
- **Yield on mixed intake is 12-13%.**
- **25 machines take in 450-million pounds of carpet to recover 60-million pounds of Nylon.**
- **Carcasses need to be shredded.**



Carpet Tiles

- **Commercial carpet tile collected is not shredded or face fiber harvested.**
- **The tiles are sent back to the carpet manufacturer.**



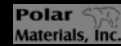
Latex Carpet Sand

- **Given that every shredder, carcass processor, and CAAF plant does generate Latex carpet backing sand...**
- **Huge quantities are available.**
- **300-400-million pounds could be generated.**



Carpet Sand

- **POLAR MATERIALS has developed processes and markets for the sand.**
- **But sand does not have the cost/performance of virgin fillers.**



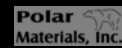
Sand is the Most Cost Effective Solution to...

- **Recycle carpet back into new carpet.**
- **Drive the recycle numbers much higher for the new MOU.**
- **Proven technology with large scale facilities in place.**



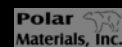
Obstacles for Use in Carpet...

- **Cost more than virgin limestone.**
- **Minor rheology issues.**
- **Cannot be used in PVC/PE tile.**
- **Limited mandate from consumers/regulatory for use in residential.**



Advantages for Use...

- **Costs are getting lower due to preprocessing sand at the shredder facility.**
- **Crushing, grinding, and loading facilities are in place.**
- **Any latex-backed carpet can use the filler.**



Other Outlets for Sand...

- **Cement kilns.**
- **Concrete.**
- **Mastics & sealants.**



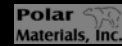
Conclusions

- **Huge quantities available.**
- **Could all be used as carpet filler.**
- **Will find other large applications.**
- **Will be the main driver for higher recycled carpet numbers.**



Polar Materials will...

- Design equipment.
- Work on a regional basis.
- Develop markets.



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B2B/B3B Fillers

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