



ROBUST PRODUCT PORTFOLIO TO ADDRESS WASTE MANAGEMENT AND RECYCLING ISSUES, REDUCE ENERGY CONSUMPTION AND IMPROVE SUSTAINABILITY OF PAPERMAKING PROCESS.

• PAPER PCC

- MTI is the worldwide leader in precipitated calcium carbonate (PCC), which is used as the filler of choice for papermakers worldwide to replace more expensive pulp. As the originator of high purity, high performing paper filler, we have been at the forefront of producing technological solutions that allow papermakers to produce paper using significantly less fiber than when more traditional fillers are used, resulting in saving thousands of carbon dioxide consuming trees each year.

• FULFILL®

- Under the FulFill® platform of products, we continue to develop our filler-fiber composite material. Our FulFill® high-filler platform of technologies provides papermakers a variety of cost-efficient, flexible solutions to increase the amount of PCC in paper, replacing more expensive fiber and reducing energy consumed in making paper.

- The papermaking process is very energy intensive and our customers are looking for opportunities to reduce specific energy demand as well as costs. By using more PCC filler in paper manufacturing, there is less energy required to refine the pulp fibers needed to make paper. In addition, PCC filler is much easier to drain and dry than pulp fibers – Fulfill® at increased filler levels also helps to reduce drying energy for the manufacturing of similar paper volumes.

- The FulFill® E-325 series is one of a few high-filler technologies that works with a naturally renewable polymer, starch, as the enabler of the filler increase. It also allows papermakers to increase the filler (PCC) without loss in key paper properties, which replaces higher cost pulp.

• NEWYIELD® PROCESS TECHNOLOGY

- There are critical waste streams produced at paper and pulp mills, which often are managed by sending the material to landfills or installing capital and energy intensive processes. Our NewYield® technology cost-effectively converts a paper and pulp production waste stream into a functional pigment for filling paper while eliminating the cost of environmental disposal and remediation of certain waste streams to papermakers.

- Through NewYield®, we can produce PCC products in a manner that reduces or eliminates the requirement for calcined lime to be needed as a raw material – avoiding the adverse impact on air, soil and groundwater that can occur from the papermaking process.

- We see compelling opportunities to deploy this environmentally focused product, especially in China, where most papermakers lack alternatives for disposal of the problematic pulp mill waste stream.

RECYCLING SOLUTION FOR ASPHALT ROOFING SHINGLES

Ecocal® RF, a product derived from Ground Calcium Carbonate (GCC), is a customized blend used in asphalt roofing shingles to improve shingle cost and longevity for the end customer. The main component of the blend is diverted and recovered waste product from our other manufacturing operations at the GCC site as part of an ongoing effort to reduce and eliminate waste materials from our manufacturing facilities.