



## ROOFING MAT LINE REBUILD

### MANUFACTURING FACILITY – SOUTH CAROLINA

**TOTAL INSTALLED COST \$30,000,000**

PENTA provided engineering and design services for the rebuild of a nonwovens material process that produces the fiberglass mat used for roofing shingles. The existing process had been shuttered for over 3 years when the project began. The rebuild involved significant upgrades to the existing equipment, including a much longer oven for curing the binder applied to the fiberglass sheet and a building extension to accommodate the oven.

PENTA's initial task was to perform a "Stage 3" study for the project. This study involved evaluating the support systems for the process, such as pumps, agitators, water, natural gas, electrical, and building/site infrastructure. The study also included a detailed cost estimate, including all construction materials and labor.



PENTA commenced work on the project by updating P&IDs that were developed during the Stage 3 study. After confirming the final design parameters for the process, PENTA developed specifications and solicited vendor quotes for five new pumps, a new agitator, several new tanks, control valves, and other new equipment. Vendor bids were summarized and forwarded to the Owner with a recommendation for purchase.

PENTA also prepared scopes of work for demolition and refurbishment, including equipment removal and the rebuild of several pumps, agitators, and gearboxes.

PENTA completed general arrangements, piping drawings, site development, structural drawings, and electrical design. The electrical design included complete replacement of the previous MCC's and switchgear and a new feeder into the facility from a shared substation.

PENTA compiled bid packages for demolition; equipment removal and refurbishment; site and shell construction; mechanical, structural and piping construction; and electrical and instrumentation construction. PENTA also aided in site document control via an FTP site.

