

CASE STUDY

Robertson Manufacturing Company | TILE Division

Usage of Simpson Mix-Muller to compact clay for manufacture of ceramic tile

Customer

Robertson Manufacturing Company, Tile Division, South Pennsylvania Avenue, Morrisville, Pennsylvania. Interview with John C. Elder, Factory Manager on November 23, 1960.

Description of the Project

Installed in October 1960, the National Engineering Company (now Simpson) unit replaces a costly, relatively inefficient continuous filter press system, the operation of which called for a special boiler providing critical moisture control; however, under ideal conditions, moisture could be maintained only between 6 1/2% and 7 1/2%.

Simpson Solution

"The new system allows us to keep our moisture content down to .1%," Mr. Elder continued. "This affords numerous advantages in production of ceramic tile after it leaves the mixing, compacting, and refining processes. For instance, lower moisture content of the clay gives a better die fill; the density of material is maintained at a constant level so that such problems as to fluffy a mix, when the clay is dry, or too moist a mix, which requires more frequent cleaning of the dies, are eliminated. These two conditions reduce pressing efficiency, and varying densities of clay under the press are reflected in a greater percentage of rejects later on along the production line.

"Formerly, moisture control depended upon the skill of the individual operator, who at various intervals had to wet down the mixture, or increase the steam temperature to control the moisture content which was indicated by laboratory tests run periodically as the clay was mixed and compacted. Now, instead of a continuous production, we make large batches to set a formula. Moisture remains constant and varies only to the extent to which it has been accumulated in the manufacture and packaging of the clay – something over which we have no control.

Where the old continuous filter press system was operated three eight-hour days, five days a week by a crew of 14 men and two floaters, the Mix-Muller runs only 1 1/2 shifts daily and requires the service of five men – three for the full, two for the half shift. Our productive capacity is thus doubled; we produce 89,840 pounds of material daily with the average of 17 charges – which requires but 32 man-hours, compared to the 128 man-hours necessary to produce the same quantity under the old system.

The weekly savings of 480 man-hours, the difference of 160 now expended and the 640 formerly required, means a savings of wages amounting to \$960 a week on a basis of an average \$2 per hour. The installation, obviously, will eventually pay for itself just in terms of reduced labor costs and increased production – notwithstanding the obvious benefits of vastly superior quality control," Mr. Elder observed.

"Doubled productive capacity, incomparably better moisture control, and reduced labor costs identify just a few of the numerous benefits we have realized by installing a Simpson Mix-Muller to compact clay for manufacturing ceramic tile."

– John C. Elder, Factory Manager