



Collaboration builds confidence for construction materials supplier

Developing a successful new polymer solution is both an art and a science. Chemstar proved that when collaborating with a major interior finishing supplier to reformulate its joint compound line. Chemstar's lean product development approach achieved the outcomes the client was looking for—resulting in a tailored solution with improved performance and lower production costs.

CHALLENGE

The R&D manager at a North American interior finishing supplier reached out to Chemstar to help refresh the company's ready-mix joint compound formula. The top priority was to maximize open time—extending the working life of the product so construction crews could perform the meticulous finishing necessary to achieve the highest quality wall surface in the most timely manner.

The challenge was to extend open time, without jeopardizing the viscosity targets needed to maintain product integrity in storage. Chemstar put its creativity and polymer science expertise to work to balance those two objectives.

SOLUTION

The customer's current formula, based on a starch and cellulose blend, didn't deliver ideal performance on both fronts. We first recommended switching to one of our unique, rapidly hydrating starch polymers to achieve the longer open time, as well as the necessary adhesion and trowelability characteristics.

When we tested the starch in the formula, though, we weren't getting enough thickening to satisfy the viscosity specification—and per our lean development process, worked on our next iteration. We introduced a second starch, one developed specifically for thickening, to achieve the targeted viscosity. This resulted in an ideal combination of the two molecules

RESULTS

- Extended open time, for easier handling and longer working life
- Improved thickening
- Lowered batch cost by 20% through more consistent, predictable batch quality
- Boosted crew productivity by eliminating time-consuming product adjustments in the field

to get the desired rheological and application properties. "Collaboration is an important part of how we work with clients," said Cory Bernu, Director of R&D. "When looking for a solution, we take a practical, problem-solving approach—discussing goals and sharing our polymer science through a lean process that allows us to iterate faster. We test, capture outcomes, gather feedback, bring some creativity to the next round, test again and get more feedback, as we continually work to optimize the formula."

After several rounds, the team landed on a formula that proved successful in field trials. The customer was

We were able to shorten batch times, thereby increasing the number of batches per hour by 20%, saving the client hundreds of dollars per day.

impressed, and through the Chemstar partnership, was able to both improve the quality of its ready-mix joint compound and lower total production costs.

The success with this product development project led the supplier to partner with us on other product lines. They developed confidence in Chemstar as a supplier capable of helping them create tailored solutions.

VALUE

Consistent and predictable batch quality

Since transitioning to the new formula, the customer has eliminated quality control issues they had experienced in the past. They used to wait after mixing each batch, because the viscosity would change, forcing them to make adjustments. With Chemstar's superior quality and narrow product specifications, they no longer need to adjust batches, saving significant time and increasing throughput.

Lower overall batch cost

When the new formula started production, the customer was pleasantly surprised to discover it created production efficiencies that far outweighed the ingredient cost increase of the new, higher performance formula. In fact, they decreased total batch costs by an average of 20%, due to better mixing, fewer adjustments, and faster batch processing.

Improved crew efficiency

On the job site, time is money. Due to variations in the consistency of the compound, construction crews were spending too much time adjusting the product in the field. The improved formula is consistently ready to use, out of the pail, without adjustments, so they can get the job done right and be more productive.

EXPERT CHEMISTRY TAILORED TO YOUR UNIQUE GOALS

When your formulating challenge calls for a custom solution, turn to the experts at Chemstar. As the proven, passionate starch polymer leader, we have the knowledge, experience and resources to deliver the unique performance you demand.

