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GONE IN 90 SECONDS



Northern California independent deploys throughput batching to cut loading times and optimize mixer fleet

A PRIMEDIA PUBLICATION

THINKING IT THROUGH

IN URBAN CALIFORNIA, STAR CONCRETE DEPLOYS THROUGHPUT BATCHING TO SPEED TRUCK LOADING AND OPTIMIZE FLEET

BY DON MARSH

Northern California independent Star Concrete feels the pressure of operating from a land-locked site in an industry-restrictive market where competitors include two of the country's top 10 ready mixed producers. When the time came to overhaul his transit mixed plant, owner Jerry Blatt found that by investing more in stationary stock and becoming a "first mover" in new batching technology, he could streamline his aging fleet and still boost productivity.

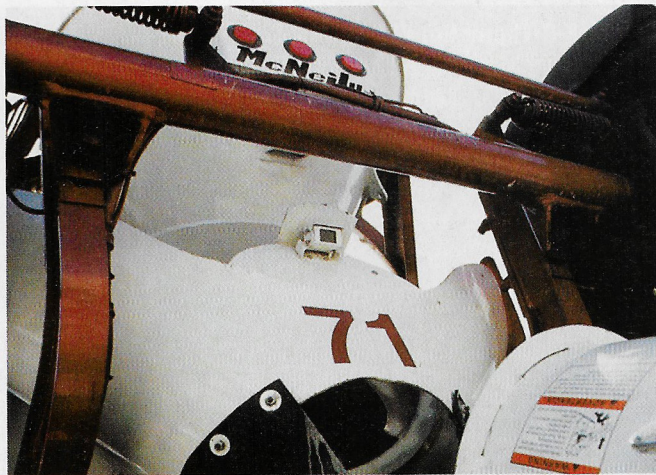
Armed with a truck-loading area monitor, the batch operator checks a reading from a charge hopper-mounted slump meter. The plant's throughput batching method has required much tweaking of the Ace-Co Scorpion controls to correctly sequence dispensing of mixed slurry and sand, then coarse aggregate, through the 5-yd. Simem MS06000 twin shaft mixers – producing 9 yd. in a single draft.

"We are delivering more material with 29 mixers than we did with 40," he explains. That has been accomplished primarily, he adds, by converting his plant to central mixed with the installation of tandem twin-shaft mixers. The design has him running what is reportedly the industry's first successful throughput batching, where slurry and sand are mixed, then discharged with simultaneous dispensing of rock. In Star Concrete's case, some trucks return from jobs carrying washout water from pumps. Instead of having drivers take the time to dump the washout, the throughput option allows for mixing the cement and sand with a reduced water volume to compensate for what is already in the drum. The release of rock creates a down draft sufficient to clear sand and slurry – even for a mix as stiff as what might be encountered on a 1-in. slump order.

Leading up to the plant installation, Star Concrete had not taken delivery of any new mixer trucks in more than a decade. With a fleet overhaul under way, new models have Allison RDS automatic transmissions and Safety Vision rear-mounted cameras to ease truck trafficking in a less than optimal, site-dictated pattern.



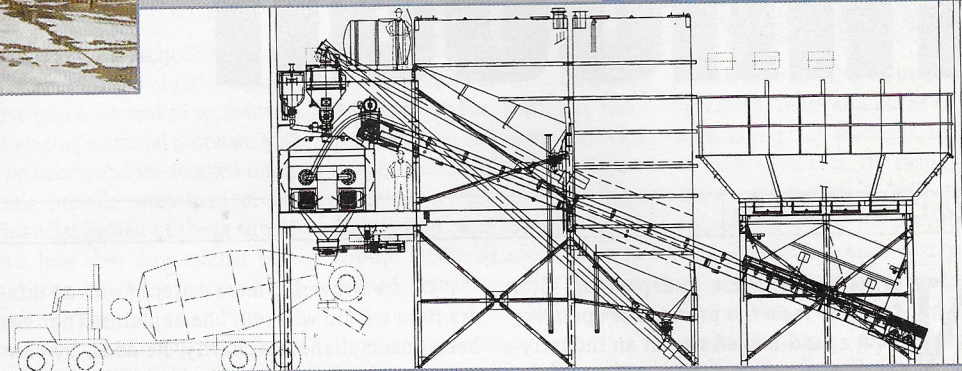
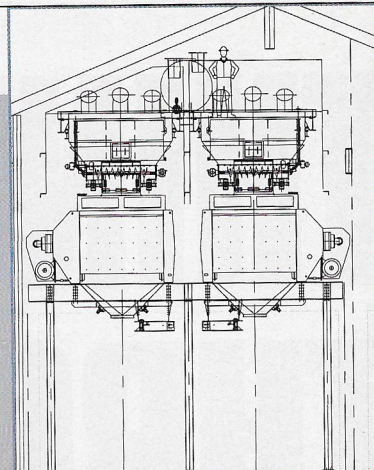
PHOTOS: Concrete Products





Mixer trucks depart and return at the same driveway; dumps are routed from a separate entry to drive-over grizzly; tankers enter the same route as the dumps, but drive through the batch plant enclosure and unload in an alley adjacent to the mixer charging lanes.

The four-compartment, 170-ton aggregate bins are modified Besser M12 models, measuring 11 ft. x 25 ft. The low-profile silos combine for 240 tons of cement and 120 tons of fly ash storage, and have two 12-in. screw conveyors, each equipped with two drives.



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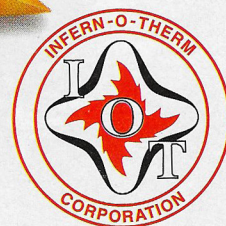
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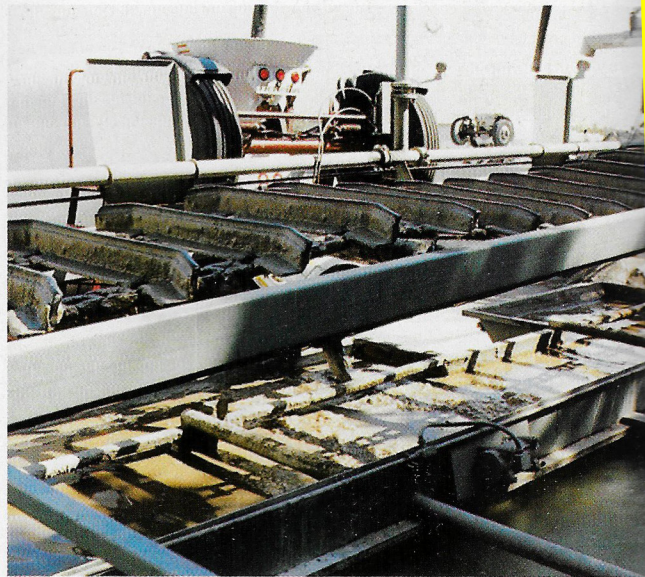


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While some trucks return with pump wash water that can be incorporated in the next load, other vehicles wash out at a Jadair Redi-Wash reclaimer installed at the front of the property. Although dictated partly by truck-routing limitations on the 3.5-acre site, the placement also allows for the draining of all yard water into the reclaimer's sump. Star Concrete uses all clarified water from the unit, with cement solids earmarked for use in recycled concrete.

Star Concrete combines the throughput method with video monitoring of trucks' charge hopper-mounted slump meters, eliminating the need for drivers to stop between the lanes and confining slump adjustment to the batch operator. Mixer manufacturer Simem America notes that the charging system can have trucks loaded in as little as 65 seconds, while the twin-shaft unit's high-shear capacity can yield target slump with as few as three or four drum revolutions. Since starting its first mixer up earlier this year, Star Concrete has logged output of 1,150 yd. in one day with 30 trucks.

The producer's 3.5-acre operation is built around a 14,000-sq.-ft. tilt-up concrete structure erected in 1990 after a city-inspired relocation from another site. As San Jose ordinance continues to require full batch plant enclosure, Blatt and his equipment supplier ConRoc Distribution had to think creatively when drawing up a new production scheme. The twin-shaft mixers are charged by extremely low-profile cement silos and aggregate bins, thanks to the building's 35-ft. ridge height. Clearance from silo and bin ends and sides to the tilt-up walls ranges from 2 in. to 12 in., respectively. While overhead doors allowed mixer placement above existing lanes, silo and bin configuration and erection required the cutting of two openings in the building's 8-in. concrete wall.

Star Concrete began with one alley and is preparing to open the second, followed by placement of a partition between the two, plus traffic signals, truck-number signage cues, and ticket delivery ports. With the plant overhaul shaping up, Jerry Blatt is devoting some additional energy to a recycled-concrete crushing business at San Jose; a satellite ready mixed operation (Gilroy); and a sand pit (Hollister) where post-permit legal challenges have continued to delay sand mining.