

# FOCUS ON MIXING: CHALLENGING CONVENTION — A REVOLUTIONARY MIXING TECHNIQUE

TEKA AGENT CONSPARE WORK ON MIXING DEVELOPMENT PROJECT WITH ECO-READYMIX USING A TURBINE MIXER WITH MORTAR FOR THE FIRST TIME IN THE UK.

A substantial upgrade to a ready-to-use mortar plant has challenged convention by adopting a revolutionary new mixing technique used for the first time in the UK mortar industry combined with a novel system for controlling moisture in the batching and mixing process.

Eco-Readymix are a long established and well respected producer of ready mix concrete, mortar and floor screed from two batch plants situated in the North West and Wales. The plant upgrade was driven by the company ethos to use the most environmentally friendly manufacturing techniques to continually reduce their carbon footprint.

Picture: Eco-Readymix Plant



Gary Billington, Eco-Readymix owner and industry veteran says "We maintain our position at the forefront of the industry through the pursuit of technology to constantly reduce our CO2 emissions. Mixing is at the heart of our process and I was keen to explore whether recent developments in mixing and batching technology could help us achieve our goal."

## Mixing

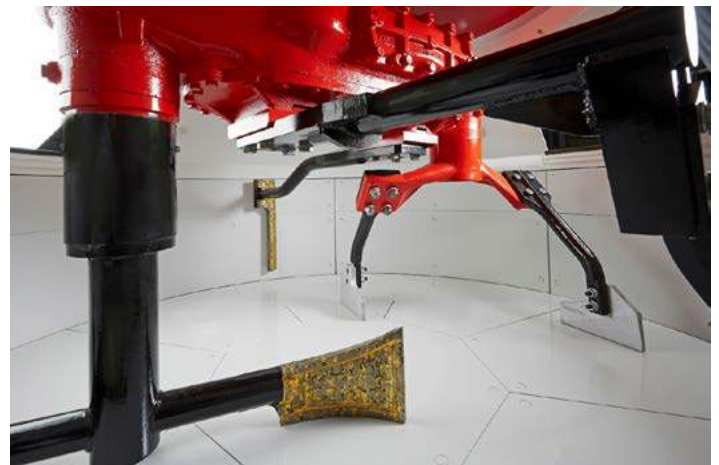
As distributor for Teka mixers in UK, Conspare was one of the companies approached to assess the project. Steve Peterson, Conspare Engineering Director, visited site to conduct a detailed analysis of the application:

"Teka offer four models of mixer, each with a completely different mixing action. We take a consultative approach

and don't jump to conclusions about which model mixer will perform best until we have all of the necessary data."

Following consultation with Teka, Conspare proposed the new Teka model THT Turbine Mixer for the project. Although a Turbine mixer had never before been used in UK to produce mortar, the mixing action is well proven in other applications in plants across Europe.

Picture: Teka THT Turbine Mixer



THT mixers have a completely different mixing action to conventional mixers. The world first, patent pending MixTurbine mixing tool combines two sweeping arms to generate a new 'swing and throw effect' specifically developed to blend materials more effectively, particularly in mixes using a high proportion of fines or colour.

The shape of the turbine mixing tool causes raw material to accelerate across the long face of the mixing arm as it rotates, powerfully sweeping the mix from one side of the pan to the other. Every full cycle of the MixTurbine causes maximum raw material movement for minimum rotation. This constant 'throwing' action produces a highly intensive mixing effect.

## Batching

The mortar plant upgrade project included reviewing moisture measurement techniques. As Master Reseller for Hydronix, Conspare were able to offer a full package. The success of this type of project relies on integrating mixing and batching technology, so having expertise

in both of these crucial areas is essential if plant performance is to be optimised.

The timing of the project was fortuitous as it coincided with the launch of a new upgraded range of digital moisture sensors by Hydronix. Conspare proposed to incorporate Hydro-Probe sensors in each of the 4 sand bins to ensure accurate raw material batch weights, and a Hydro-Mix sensor in the mixer floor to monitor mix consistency. Steve Peterson explains "You can have the best mixer in the world, but if proportions of raw materials are inconsistent it is not possible to produce a consistently high quality mix. In our experience accurate moisture control techniques are essential."

The decision was made to replace the existing pan mixer with a Teka THT1875 Turbine mixer and upgrade to Hydronix. The installation was undertaken in January 2015.

**Picture: Teka THT Turbine Mixer. MixTurbine**

The mixing action generated by the MixTurbine mixing tool proved to be ideal for mortar production. Gary Billington commented "We immediately noticed a significant improvement in the quality of both mortar and screed. Mix quality was vastly improved - perfect mortar with a butter like consistency that our clients love as it is so easy to work with."



After 9 months of arduous production the mixing tools show virtually no signs of wear indicating that maintenance downtime and spare part costs are set to be permanently reduced. Fewer mixing tools mean less build up for easier cleaning and lower risk of contamination.

The MixTurbine mixing tool enables production of batch sizes down to 15% of theoretical maximum without compromising mix quality, resolving a long standing problem in the industry:

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