



Hello,

I am **Sven-Henrik Norman**, Corporate Product Manager of the RE-CON LINE and I would like to welcome you to the very first issue of our newsletter: "BREAKING NEWS - RE-CON LINE".

It will **focus on the products and advantages this line** might bring to you. I hope you will find it interesting and an inspiration to present our products to the market.

**Sven-Henrik Norman** - Corporate Product Manager - RE-CON LINE

## WHY STARTING A NEWSLETTER?

Our objective in the RE-CON LINE team is to highlight the strengths and potentials of our newly formed product line. The objectives of this newsletter are:

- **Informing you** about the RE-CON LINE products: products that transform, clean and recycle waste in concrete production;
- **Providing you with stories** and examples on how and where use them, highlighting how we at Mapei can help our customers save or even make money in waste management;
- Stimulate teamwork, discussion and **sharing of ideas** and **best practices**;
- Last, but not least, **driving sales**. Sales is what gives us at Mapei the ultimate confirmation of trust from our customers. To increase sales also means the possibility to improve, offering better and more sustainable solutions for concrete production. We will monitor and highlight achievements in the coming issues of BREAKING NEWS - RE-CON LINE.

### THIS ISSUE FOCUSES ON

RE-CONzero

RE-CON DRY WASHING

RE-CON AGG range



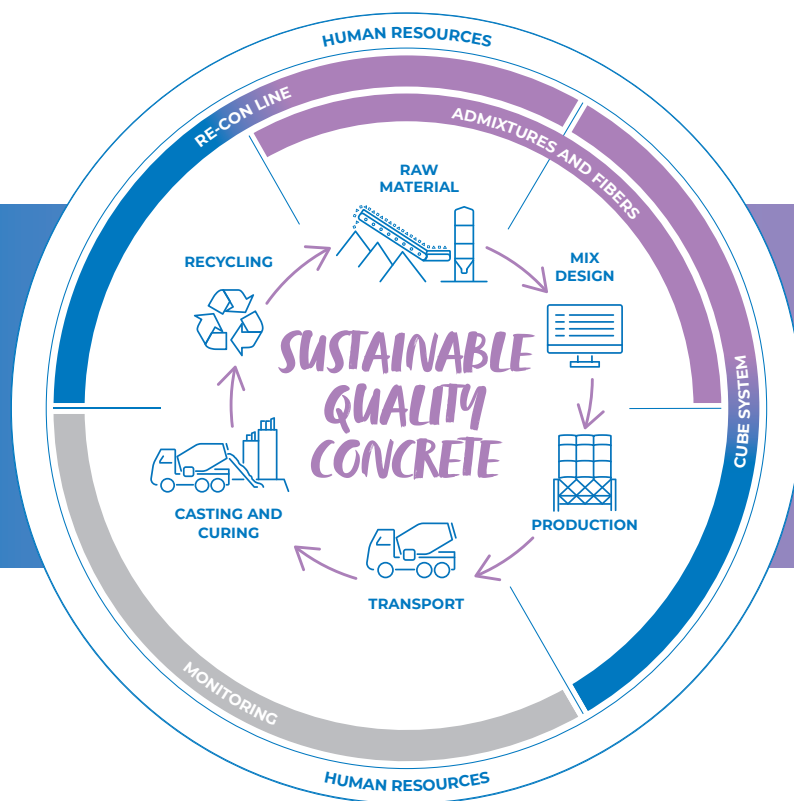
## RE-CON LINE: PART OF AN INTEGRATED MAPEI SOLUTION

In this first issue of the RE-CON Line newsletter, we would like to explain what the product line represents in terms of a Mapei's **value proposition to our customers**.

The concrete industry is in a state of change towards more sustainable and circular production models. With increased focus on lowering the carbon footprint of concrete as a building material, as well as reducing the use of virgin raw materials and water, **our customers are looking for solutions and products to help them adapt to the changes** in market needs and demands.

Mapei has been meeting these demands by developing a number of innovative solutions for the concrete industry that integrate raw materials, concrete admixtures, and digital solutions to **produce concrete with increased sustainability without compromising quality** or increasing total production costs.

The picture below (Sustainability wheel) illustrates very well Mapei's focus on the total life cycle of concrete. The first segment includes the **MIX DESIGN** and **PRODUCTION** phases. Here, Mapei superplastizing **ADMIXTURES** play a significant role in reducing the water demand in a mix design and thereby reducing the need for cement. In addition, the strength enhancers in the **CUBE SYSTEM** segment make it possible to use new secondary cementitious materials that can replace CO<sub>2</sub> intensive Portland clinker. **FIBERS** also play a role in enhancing strength and reducing the need for steel reinforcement.



Further on in the concrete production life cycle is the **TRANSPORT** and **CASTING AND CURING** phases. The Mapei solutions in the **MONITORING** segment help producers to **keep track of the fresh properties of concrete** during transport so that when the concrete reaches the building site casting can be started immediately with known and quality controlled fresh properties. The information of concrete fresh properties will be available to the producer in real time even after the truck has left the plant. This helps in optimizing the mix design.

In the final phase of **RECYCLING**, the RE-CON Line segment has products and solutions that in the first hand reduce waste streams like returned concrete and mixer truck washing slurry. Secondly it helps producers to use recycled materials as **RAW MATERIAL** in new concrete.



To describe this more in detail, we need to look at the individual products and solutions that are included in the **RE-CON Line** segment, namely:

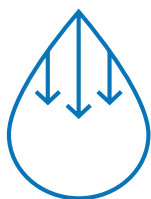


The challenge is to **transform waste into recyclable aggregates** that replace natural raw materials

## RE-CON zero

### RE-CON ZERO: TRANSFORMING RETURNED CONCRETE INTO AGGREGATES

Mapei revolutionized the handling of returned concrete with the introduction of RE-CON ZERO in 2010: **returned concrete can now be transformed into a recyclable aggregate material**. The transformation happens thanks to a patented 2-part system including a superabsorbent polymer and a setting accelerator. The water in the concrete is bound by the superabsorbent and the setting accelerator enhances the hardening of the cementitious matrix. **The result is a recycled aggregate that can be used in new concrete** or sold as backfill material. The aggregates can also be used to absorb truck washing slurry in the **RE-CON DRY WASHING** process.

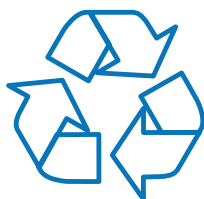


The challenge is to **reduce water consumption and pollution** by recycling as much processing water as possible

## RE-CON DRY WASHING

### RE-CON DRY WASHING: CLEANER WATER AND REDUCED WASTE FROM CONCRETE TRUCKS

The RE-CON DRY WASHING method greatly **reduces washing slurry waste and washing water consumption from concrete trucks** by using the absorbing properties of the RE-CON ZERO EVO aggregates made from transformed returned concrete. The method makes it possible to **recycle washing slurry by transforming it into a recycled aggregate**. Much less water is needed to complete the cleaning of the mixing drum after it has been dry washed. The residual washing water has a lower solids content, lower pH and a lower risk of containing heavy metals. And there is one more advantage: the **RE-CON DRY WASHING particles absorb carbon dioxide** through the process of carbonation.



The challenge is to use **more recycled materials**

## RE-CON AGG range

### RE-CON AGG ADMIXTURES: REDUCING WATER AND CEMENT WHEN USING DEMANDING MATERIALS

With the help of the RE-CON AGG admixtures, **increased ratios of water demanding sand and aggregates can be used without increasing the need for cement**. The RE-CON AGG polymers block the porous surfaces and crystalline structures in demanding aggregates and sand from absorbing the mixing water from the concrete in its fresh state. The mixing water stays available in the fresh concrete, keeping it flowable for much longer than it would have been without these admixtures. **The alternative would have been to add more water and more cement to the mix**, leading to higher costs and a bigger carbon footprint.





## UNITED READY MIX LLC: A SUCCESSFUL CASE HISTORY IN THE USA

RE-CON ZERO has been proving its worth for concrete producers across the world for several years. Here, we highlight a recent example from the United States, where the customer, **United Ready Mix LLC in Colorado, wanted to explore the potential of RE-CON ZERO by practical testing it in full scale.** The Mapei team spent a few days at their plant to introduce and demonstrate the RE-CON ZERO technology.

United Ready Mix LLC used part of the flow of returned concrete to produce concrete blocks. But **a large volume of returned concrete was also dumped on the ground** for hardening and the cakes were then broken up into pieces for waste collection. This process is time consuming, noisy and has a relatively high carbon footprint because of the diesel used by the excavator and the trucks that transport it out of the site.

Shaun Roberts, owner and director of United Ready Mix LLC, liked the idea that **instead of producing waste, returned concrete would be transformed into aggregates** that can be re-used in concrete production.

The products the Mapei team used in the demo are **standard RE-CON ZERO products, comprising of two components: Part A and B.** Part A is a superabsorbent polymer used to bind the water in the concrete mix so that it dries. The role of Part B is to accelerate the hardening of the granulated end material. When a concrete truck returns from site, we need to measure two parameters: the volume of returned concrete and its water content. The dosage of the two components (A and B) is determined by these factors. After adding and mixing the RE-CON ZERO products into the returned concrete, the material is poured out and left to harden and dry for a period of 12-24 hours. If the material is turned around by a wheel loader or similar, the best end result is achieved.

The demo was successful and **persuaded Roberts and the rest of the plant management to initiate a cooperation with Mapei** in the area of transforming returned concrete into RE-CON ZERO aggregates and to explore the potentials of RE-CON AGG admixtures to re-use up to 75% of the RE-CON ZERO aggregates as replacement of virgin raw materials.



*"Since I have already paid once for the materials like aggregates, sand and cement, I don't like the idea to spend even more time and costs on processing it and send it out of the plant for no use. I might as well try to get it back into my production loop".*

*Shaun Roberts, owner and director of United Ready Mix LLC.*



*The RE-CON LINE team at work: Helping our customers in the transformation of waste returned concrete into high quality recycled aggregates.*



Please feel free to share your ideas and contribute to the next issue of this newsletter by emailing to: [RE-Con@mapei.it](mailto:RE-Con@mapei.it)