



# EIRICH

## Mixing Technology for Concretes

### High-grade concretes

- Roof tile concrete
- Facing concrete
- Railway sleeper concrete
- Concretes for drainage channels
- Concretes for slat panels

- Lightweight concrete
- Foamed concrete
- Fiber reinforced concrete
- Polymer concrete

### High-performance concretes

- Special concretes
- HP lightweight concrete
- HP fiber concrete
- Self-compacting concrete

- High-strength concrete
- Ultra high-performance concrete
  - from stiff to self-compacting
  - with any grain-size
- Suspension concrete

### The unique working principle

#### Rotating mixing pan

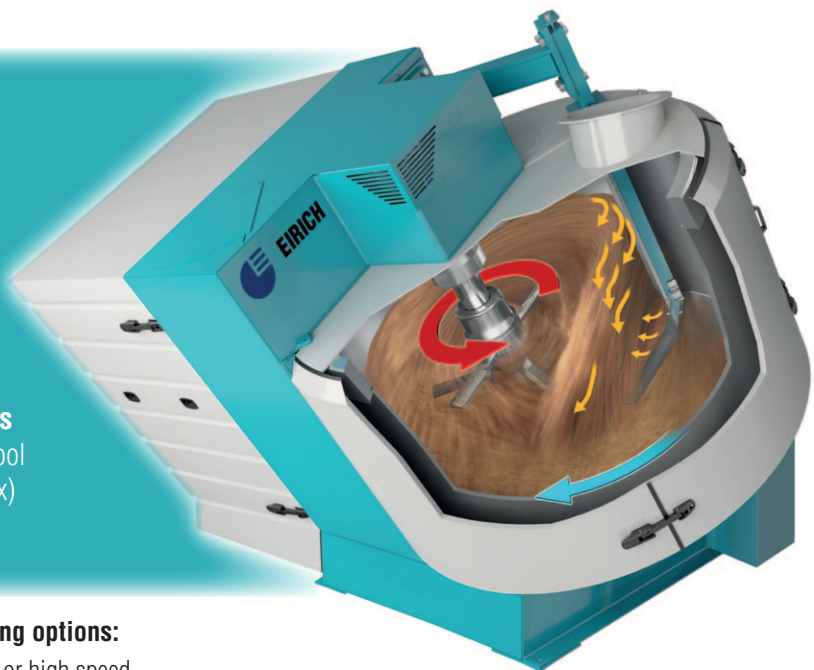
for material transport

#### Variable-speed mixing tool, slow to fast

for mixing

#### Separation between material transport and the mixing process

This allows the speed of the mixing tool (and thus the power input into the mix) to be varied within wide limits.



### This working principle offers the following options:

- The mixing tool can be run variably, at low or high speed
  - The input of power into the mix can thus be controlled specifically
  - High tool speeds allow
    - fibers to be disintegrated optimally
    - pigments to be ground perfectly
    - fine components (e. g. in case of fine-grained concretes) to be mixed optimally
  - Medium tool speeds allow high-quality mixtures to be produced
  - Low tool speeds allow lightweight aggregates or foams to be mixed-in gently
  - For varying formulas, different variable mixing cycles, can be preselected
  - Cement, pigment and admixture amounts can often be reduced (better distribution)
  - Water is distributed effectively and quickly; a stable moisture signal is achieved very fast; the mixing times can be reduced considerably
  - Scrap – particularly of appearance surfaces – is clearly reduced
  - Less fragmentation of coarse-grained lightweight aggregates
  - Compared to other mixing systems
    - substantially reduced mixing times
    - perfect disintegration
    - higher fines contents possible
    - improved set concrete properties (strength, durability)
    - reduced consumption of plasticizers
    - fully reproducible mixing processes
    - variable "intelligent" mixing cycles with different speeds possible
- EIRICH customers report their experience:**
- Concretes of any kind and consistency are prepared in short time and high quality

**Top-name manufacturers around the world work with EIRICH mixing technology.  
We would be glad to provide references on request. EIRICH is a research partner for universities.  
Put us to the test. We would be glad to tell you more.**

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**BUILDING MATERIALS**

**Neutral study:  
Better concrete of greater uniformity with EIRICH mixing technology**

More than 100 years ago, in 1906, EIRICH invented the planetary mixer – and discontinued its production in 1924 following the development of the mixers, today available in their 5th generation and known worldwide simply as „EIRICH mixers“.

The requirements imposed by customers on concrete quality and surface finishes are continually on the rise. For more than 30 years there have been reports from numerous concrete block producers that better pigment blending and an absolutely homogenous concrete are achieved with the EIRICH mixer.

Unlike all other mixing systems on the market, the EIRICH mixer allows the speed of the working tool to be adapted with optimum effect to the product in question. The EIRICH mixer mixes with circumferential speeds of between 2 m/s and 30 m/s. Energy input into the mix can thus be controlled within broad limits. Together with the rotating mixing pan this results in mixes of the highest quality.

The mixing principle is totally unique. What many EIRICH customers have known for years has been confirmed in 2003 by a neutral study: **With EIRICH technology you get better concrete of greater uniformity.**

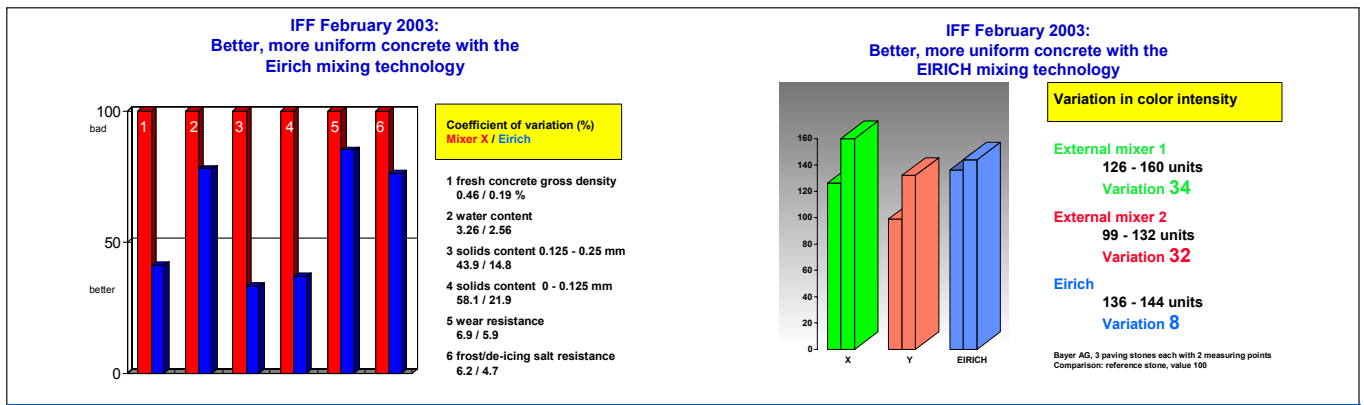
EIRICH engaged the Institute for Prefabricated Element Technology and Prefabricated Building in Weimar (Institut für Fertigteilechnik und Fertigbau

Weimar e.V.) to conduct a first-ever neutral study on „planetary mixers / EIRICH mixers“. Facing concrete samples were taken from a leading German manufacturer of prefabricated concrete road, garden and landscaping products, which operates with various types of mixer many locations throughout Germany.

On February 11, 2003 the institute presented its report entitled „Investigation of the Quality of Mix from Face Concrete Mixers“. The following is a direct quote from the report: „The EIRICH mixer ...is characterized by very short mixing times. With mixing pans of identical capacity, the EIRICH intensive mixer is thus able to achieve a uniformity of mix more quickly than mixer X; this has economic benefits“.

A further point emphasized by the report is the high uniformity of the concrete prepared with the EIRICH mixer. Measurements of the fresh concrete raw density fluctuated by 0.19% on 5 samples taken from the EIRICH mixer and by 0.46 % on 5 samples from the planetary mixer. A similar picture was discovered with the water content, the solids content and the de-icing salt resistance. The EIRICH mixer is attested „a better uniformity of concrete quality“ – achieved „within a far shorter mixing time than in mixer X“.

**In practical terms this means: Each new mix is like the one before; fewer surface defects mean less scrap. An investment in EIRICH mixing technology soon pays for itself.**



**Neutral study:  
Best mixing quality reachable with EIRICH mixers only**

From the contribution "Focus on mixer performance and glass batch quality" by Fons Rikken, Philips Lighting Components, Eindhoven in GLASS INTERNATIONAL SEPTEMBER / OCTOBER 2004, pp. 76 – 77

**1. Mixers with low power input**

(1 up to 2 kW/100 kg)

Result: The best mixing effect is obtained with the mixer with rotating mixing pan (EIRICH mixer type D)

Philips has been operating more than 40 mixers from different manufacturers. Investigations were carried out in order to find out how good quantities of 100 ppm can be admixed by different mixing systems. For this purpose, 5 samples were taken from each mixer with glass batch in intervals of minutes and subsequently divided into 4 portions for examination. Every point in the curves, which represent the coefficient of variation depending on time, is hence the medium value from 20 determinations.

**2. Mixers with higher power input**

(up to 5 kW/100 kg)

Result: The best mixing effect is obtained with the mixer with rotating inclined mixing pan (EIRICH mixer type R)

The second best result is obtained with the mixer with rotating horizontal mixing pan (EIRICH mixer type D, with agitator)

