

Processing technology for sand-lime brick mixes

Outstanding mass homogeneity thanks to automatic correction for sand, water, and lime, as well as high-performance process control engineering



Services from a single source



Future-proof your production environment

The patent for the production of sand-lime brick has existed since 1880. Eirich has been part of the success story of sand-lime brick since the early days of the industry.

We supply processing technology for state-of-the-art wall construction material

- Mixing systems
- A full range of conveying, weighing, and feeding equipment
- Controls and process control systems
- Machinery and plant engineering
- A broad portfolio of services

Efficient project management

Eirich can provide a full range of products and services for any new build, retrofit or productivity enhancement project from a single source

- Consultancy, planning
- Design, development
- Production, service

Our experienced project managers are at your side to provide advice and support. We develop solutions together.



Picture credit: Town of Ostfildern



Eirich material processing technology – the road to quality products

Cutting-edge process control technology ensures predictable, reproducible production flows

Eirich provides the best configuration for the particular application from its own development and production portfolio. You always have the option of upgrading as technology evolves. You benefit from the experience we have gained from countless projects. Eirich process control technology always puts you in complete command of the quality and cost-efficiency of your products.

Optimal project implementation – excellent investment security

- Assembly
- Commissioning
- Training

Eirich has a wealth of international machinery and systems engineering expertise, giving you the planning certainty of knowing that your equipment will be installed and commissioned on schedule. Training is provided to ensure that your operators and maintenance team are able to keep production running smoothly, reliably, and safely.

State-of-the-art service portfolio ensuring the security and cost-effectiveness of your investment

Eirich offers state-of-the-art machinery and systems service solutions to protect the long-term security of your investment. We can provide service worldwide as well as an all-inclusive lifecycle service depending on your location. A team of specialists is available to analyze your service needs.

The Eirich service portfolio

- **Support**
Helpdesk / Teleservice
- **Maintenance**
Inspection, repair and maintenance / ServiceExpert ECS* / condition monitoring
- **Optimization**
Refurbishment and retrofitting / training
- **Original parts**
Advice / delivery / repair / ServiceExpert ECD**

* tailored software support for today's repair and maintenance strategies

** software for document management in the Eirich scope of supply

Product quality depends on the quality of the mixture

Eirich intensive mixers feature a unique mixing principle and offer outstanding flexibility and performance. Manufacturers have been relying on Eirich's proven mixing technology for decades.

The distinguishing features of Eirich intensive mixers are

- the rotating mixing pan
- the stationary bottom/wall scraper
- the high-speed rotor mounted eccentrically to the center of the mixing pan

The unique mixing principle of the Eirich intensive mixer

Inside the mixing pan, the material is moved upward by the rotation of the inclined mixing pan, before dropping down from the highest point under the force of gravity. This process is boosted by the bottom/wall scraper, which circulates the material and conveys it into the area of the rotor. The rough mixing resulting from the rearranging function of the scraper is overlaid by the extremely effective fine mixing achieved by the high-speed rotor.



To put it another way, the quality of your end product can never be better than the quality of the mixture!

The essential differences compared with other mixing systems:

- Transportation of the mix is separate from the actual mixing process, ensuring unparalleled mixing quality
- The higher power input reduces mixing times
- The same output can be achieved using smaller and therefore less expensive machines
- The rugged construction ensures above-average machine service life, and fewer high-wear parts reduce wear-related costs

Eirich mixing solutions deliver truly cost-effective quality!



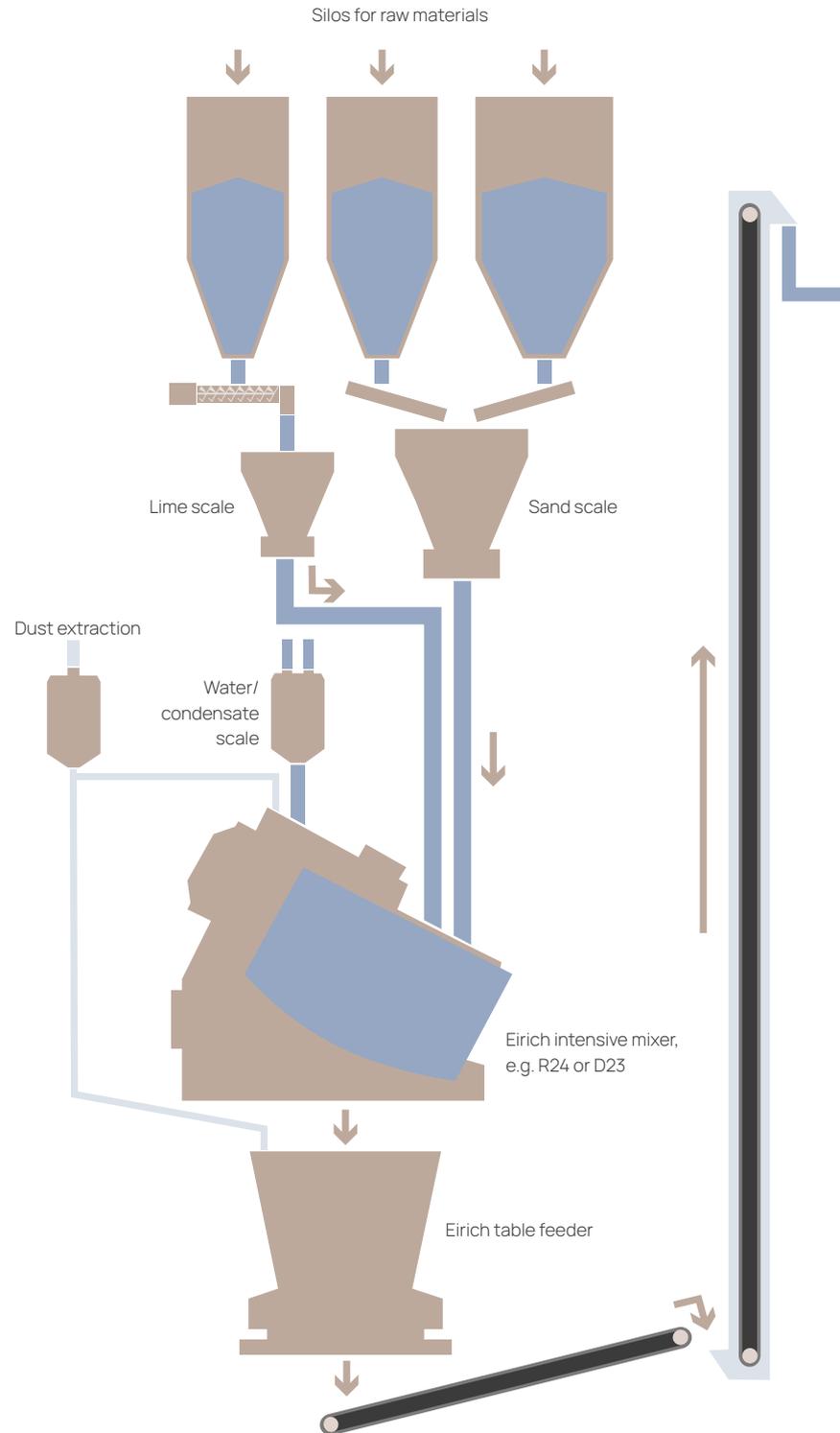
- 1 Robust, service-friendly mixing tool
- 2 Static, multi-purpose bottom/wall scraper
- 3 Rotating mixing pan
- 4 Product flow with high velocity differential



**Globally unique
mixing principle**

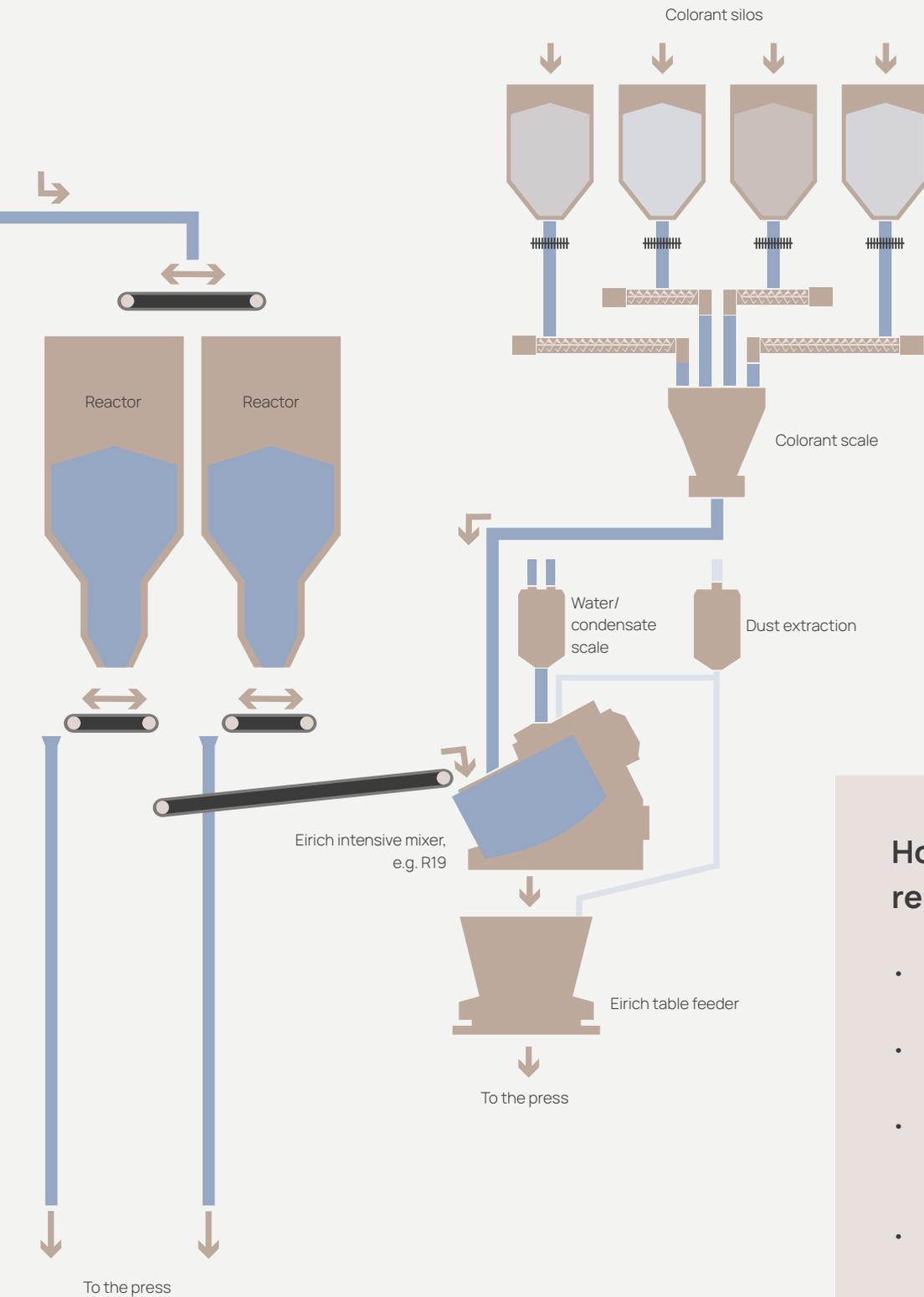
How we improve the premixing process

- All materials are distributed homogeneously in the mixture, and the sand is evenly coated with lime
- The lime is wetted intensively with water
- The full surface of the sand grains is activated to form calcium silicate
- Clay agglomerates that inhibit the formation of high-density, fine-pored calcium silicate are broken down
- Lime agglomerates are separated reliably
- Bricks have a uniform structure when light aggregates or fly ash are mixed in
- The outstanding mixing quality is reproducible



Premixing

Remixing



How we improve the remixing process

- Reactor material agglomerates are broken down reliably
- The moisture for pressing is controlled accurately
- Material flows continuously up to brick removal at the press
- There is no streaking when pigments are mixed in
- The mixing power is adapted to changes in pressing output associated with different brick sizes

Eirich's mixer range

Eirich mixers offer outstanding flexibility and performance. Manufacturers have been relying on Eirich's proven mixing technology for decades. The Eirich mixer range covers a large bandwidth of sizes to meet user-specific requirements with outstanding cost-efficiency.

Laboratory mixers for formula development

Type of mixer	max. fill quantity	
	Liters	kg*
EL1	1	1,3
EL5	5	7
EL10	10	13
R05T	40	52
R08	75	98
R09	150	195



Eirich table feeder

Eirich pre-mixers

Type of mixer	max. fill quantity		max. throughput**		
	Liters	kg*	approx. m ³ /h	approx. t/h	approx. NF/h
R16	600	780	12	15,6	4.000
RV16	900	1.170	18	23,4	6.000
R19	1.125	1.460	22	29	7.000
RV19	1.500	1.950	30	39	10.000
R24	2.250	2.925	45	58,5	15.000
RV24	3.000	3.900	60	78	20.000
R28	4.000 to 5.000	5.200 / 6.500	80 / 100	104 / 130	27.000 / 33.000
D23/2	1.750	2.275	35	45,5	12.000
D23/3	2.300	3.000	46	60	15.000

* at an assumed bulk density of 1.3 kg/l

** at 20 batches per hour without moisture measurement



Eirich D23 intensive mixer



Eirich scale unit

Eirich remixers

Type of mixer	max. fill quantity		max. throughput**		
	Liters	kg*	approx. m ³ /h	approx. t/h	approx. NF/h
RV12	400	520	7	9	2.000
RV16	900	1.170	15	20	5.000
RV19	1.500	1.950	26	33	8.000
RV24	3.000	3.900	51	66	17.000

* at an assumed bulk density of 1.3 kg/l

** at 20 batches per hour without moisture measurement

Precise recipe control and quality logging

To complement Eirich mixing machinery, we offer a full range of peripherals right through to the turnkey preparation of mixes

All components are adjusted to the throughput of the mixer to ensure maximum cost-efficiency.

We design and produce a full range of conveying, weighing and metering equipment as well as controls and process control systems, meaning our customers do not need an interface between mechanical and electrical systems.

Eirich has developed special software modules to optimize the process flow in the sand-lime brick industry to ensure excellent operational reliability along with upgrades to existing systems.

Seamless data acquisition and process parameter control extend from metering of the input materials to transfer of the conditioned material to the press.

Material quality is maintained even if the moisture content of the raw materials varies.

Consistent mix quality even if the moisture content of the raw materials varies.

The amount of water and lime required changes constantly because of variations in the moisture content of the sand. The moisture content of the sand is therefore measured by microwave. The control system continually monitors the captured data and corrects the amounts of sand, water, and lime to ensure a constant moisture content in the mix that is transferred to the press. The measured value (actual moisture content) is processed by the control system, which calculates setpoint values for feeding the sand, water, and lime.

Lime / water correction

This software module is mainly used where a number of different types of sand need to be mixed in a specific ratio. The weighed sand is fed to the mixer, where it is homogenized and the water content of the batch is measured. The formula is calculated on the basis of the measured moisture content, and the amount of lime and/or water to be added is adjusted automatically. If it is determined that there is already an excess of water in the fed amount of sand, additional lime can be added so that the water is bonded as monohydrate. This process is also carried out automatically by the batch control system, as is calculation of the additional lime requirement.

The extensive range of functions includes:

- Setpoint verification
- Target/actual comparison
- Afterflow optimization
- Tolerance monitoring
- Scale standstill check
- Scale empty verification
- Automatic zeroing
- Formula calculation
- Balancing
- Logging
(production / consumption)
- Service interval monitoring
- Remote maintenance
- Machine diagnostics
(condition monitoring)



System with complete Eirich material processing

Control concepts from Eirich



1 Keeping a constant watch on material moisture and temperature



Processing sand-lime brick mixes with Eirich means producing a quality product. Dependably and reproducibly!



The Eirich Group, with Maschinenfabrik Gustav Eirich as its strategic center in Hardheim, is a supplier of machinery, systems, and services for industrial mixing, granulating/pelletizing, drying, and fine grinding. Our core expertise is in processes and techniques used for the preparation of free-flowing materials, slurry, and sludge. We are a family-owned business that operates from 16 locations across the world.

For further information, go to
www.eirich.com