

Cordially welcome!

EKONID / BMWi Business Matchmaking Indonesia 2014



**Economical preparation technology for modern
building materials**

Maschinenfabrik Gustav Eirich was founded in 1863.

Originally a mill workshop, the company developed over the years into **a group of companies with international operations.**



EIRICH introduction

The EIRICH management team



Hubert
Eirich



Paul
Eirich



Stephan
Eirich



Ralf
Rohmann



New assembly building in Hardheim



Logistic center in Kuelshheim

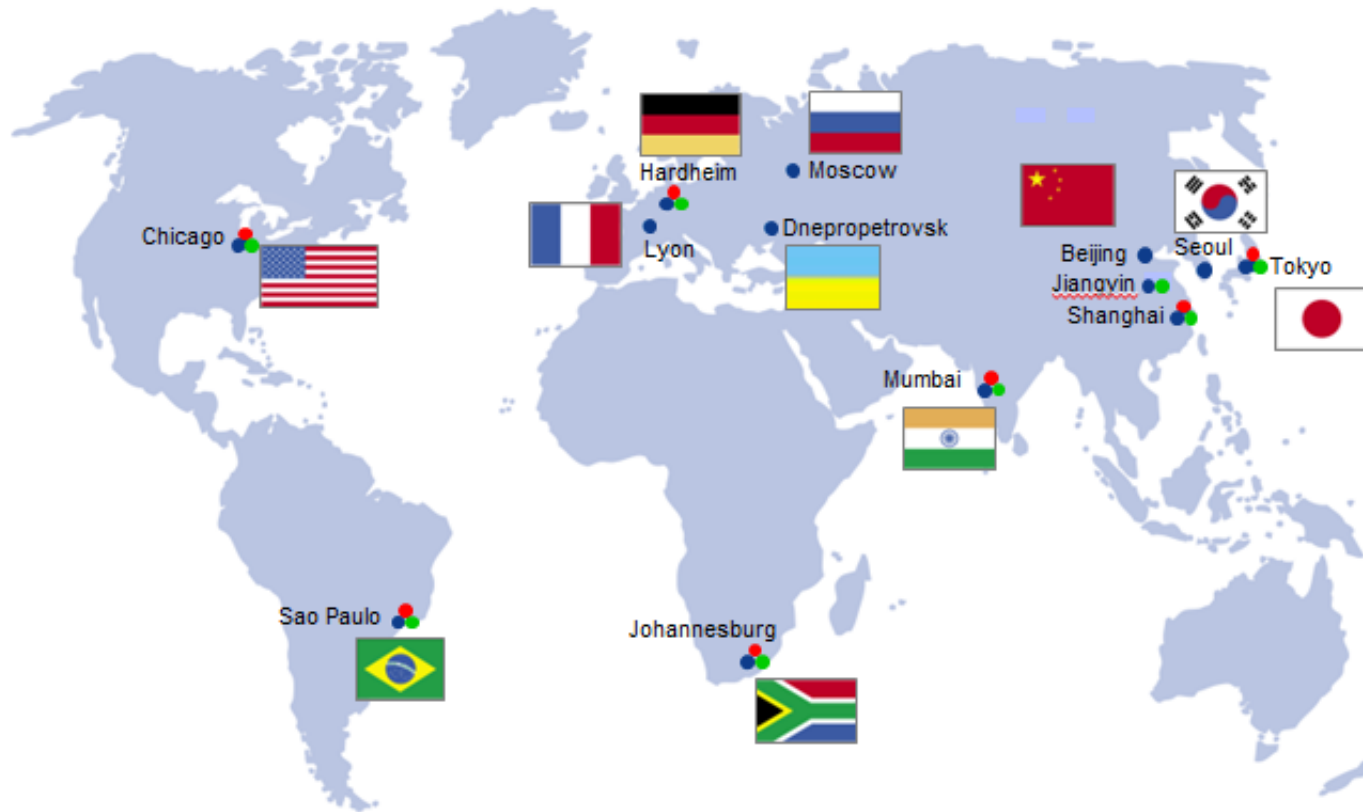


Companies in the EIRICH Group



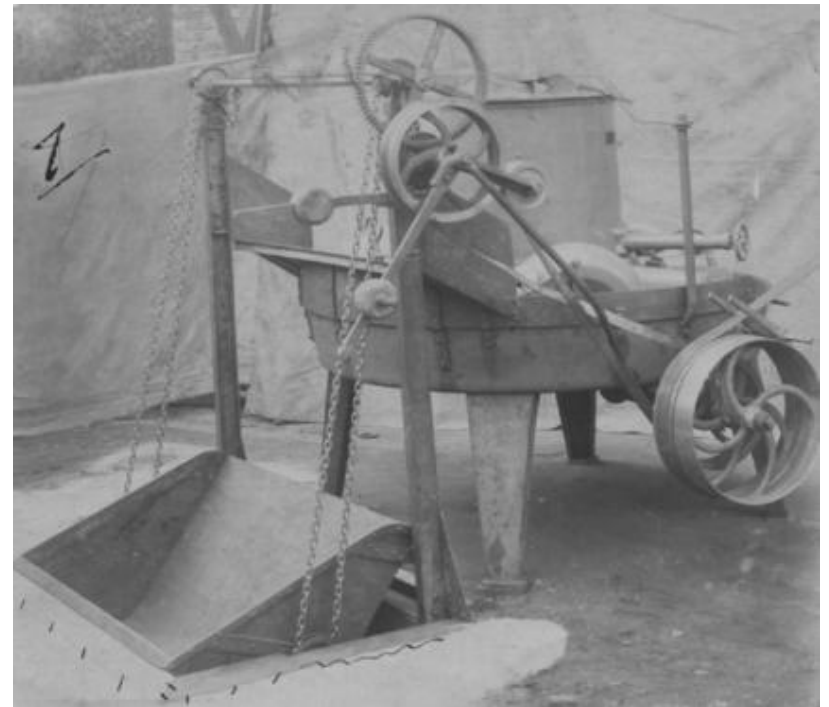
1.500 employees in 11 countries on 5 continents

- Sales & Service
- Test Center
- Production Facility



Mixers in 1903

The first ring trough mixers



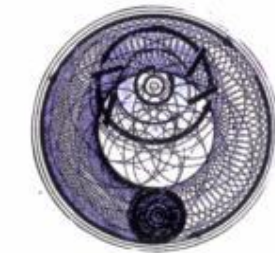
Development of the EIRICH mixer



Ring trough mixer
1903 to 1906



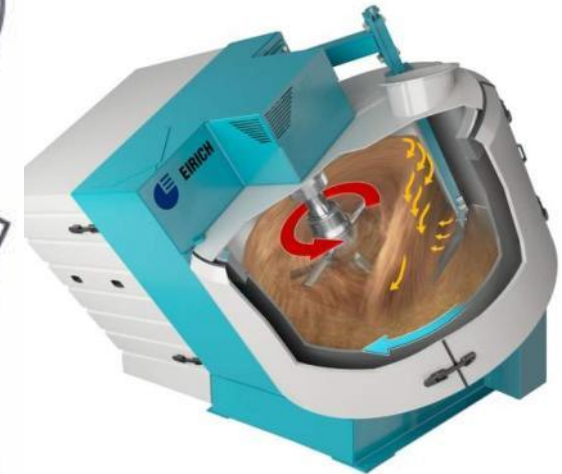
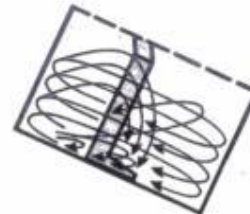
Planetary mixer
1906 to 1924



Countercurrent
intensive mixer
DZ, DE and DW
Series from
1960



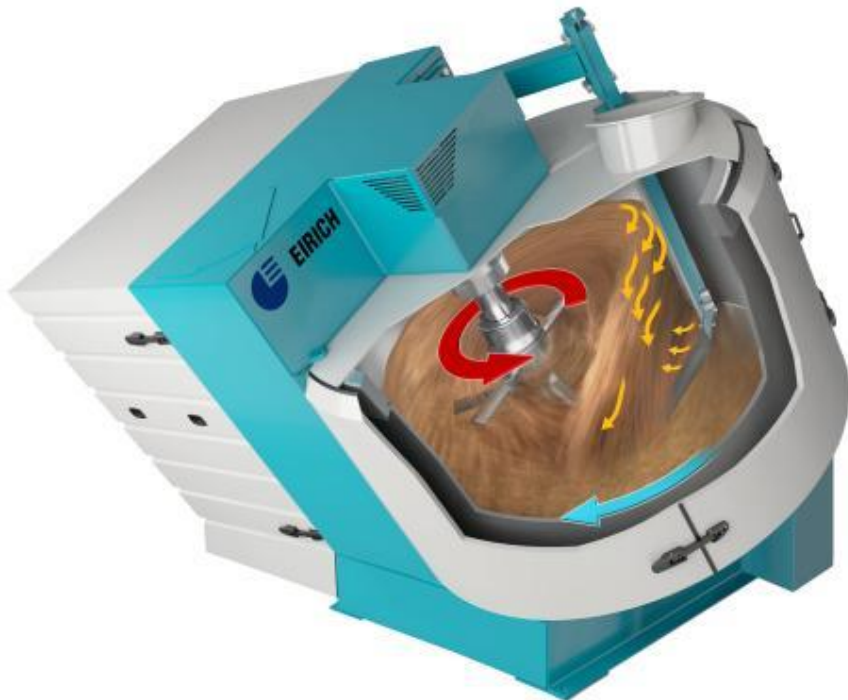
Countercurrent mixer
E and Z series
1924 to 1960



Intensive mixer
R series
since 1972

The EIRICH mixing principle

Three components for optimum coordination of the mixing process



- **Rotating mixing tool**
For ensuring the required mixing intensity and an intensive energy input.
- **Static bottom / wall scraper**
For additional agitation of the material flow. Accumulated material is scraped off. Helps to discharge the product
- **Rotating mixing pan**
For continuous transportation of the material into the area of the mixing tools.

Product range

From 1 liter to 12,000 liters



1 liter – EL1



5 liters – R01



150 liters – R09T



400 liters – RV12

Product range

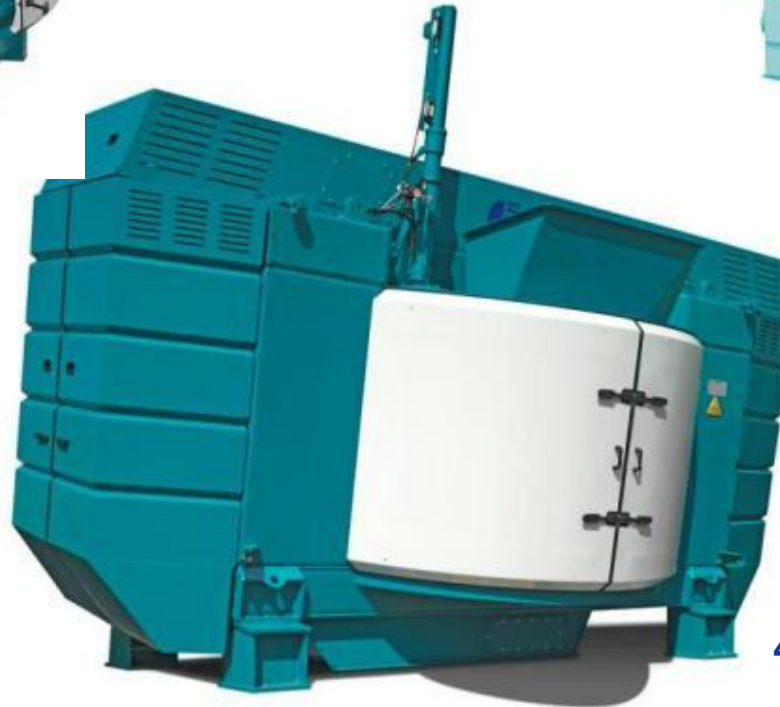
From 1 liter to 12,000 liters



900 liters – RV16



3,000 liters – RV24



4,000 to 5,000 liters – R28

Product range

Batching and weighing technology



Control systems



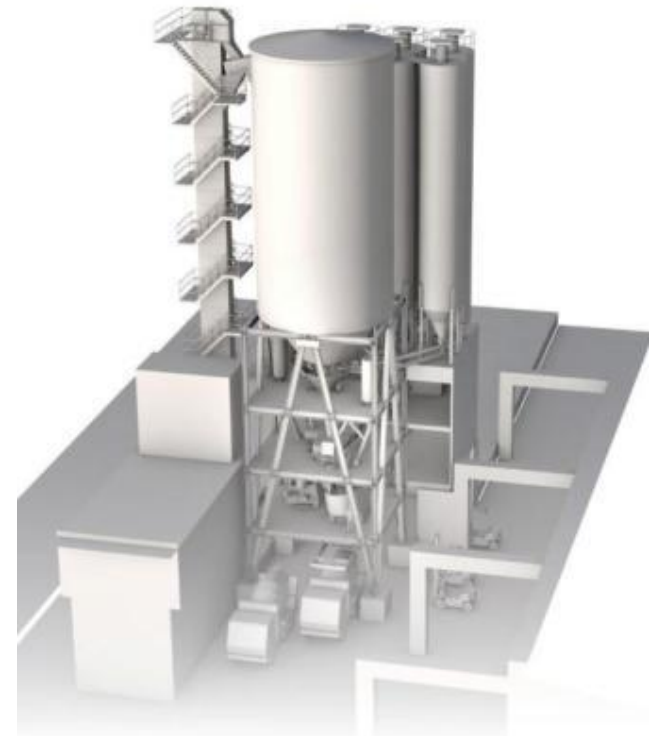
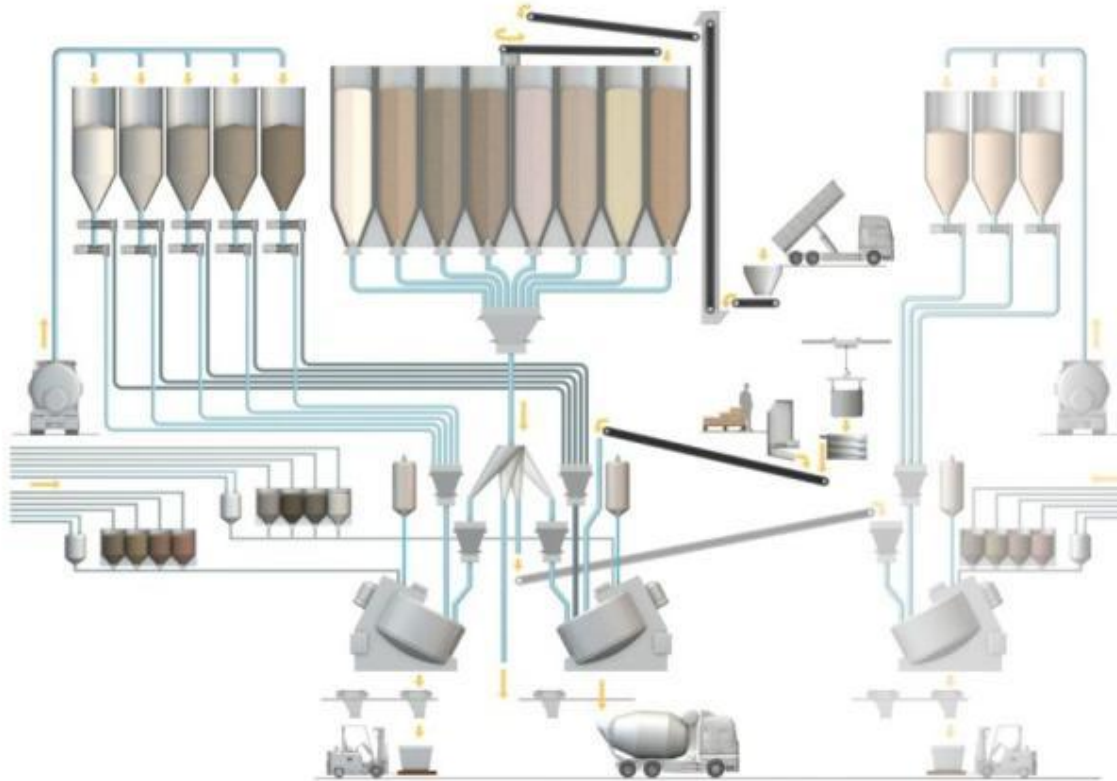
Plant engineering; projects world wide



... a one-step solution for all your needs!



Plant engineering



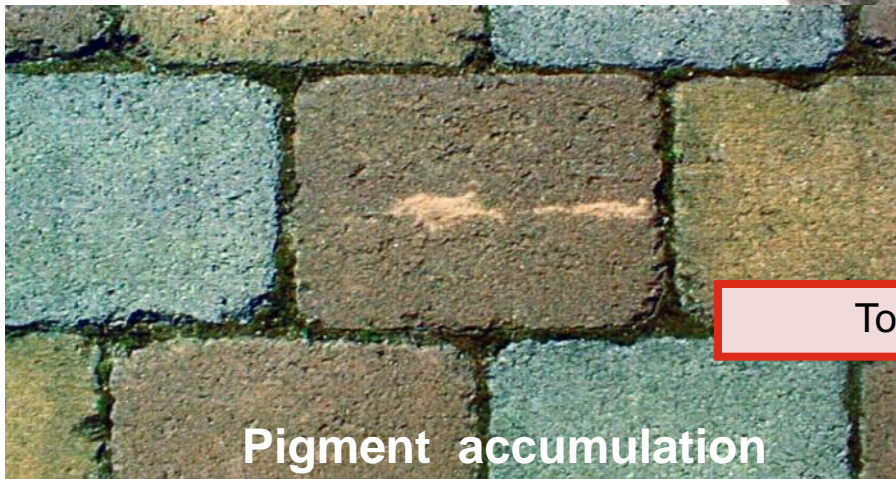
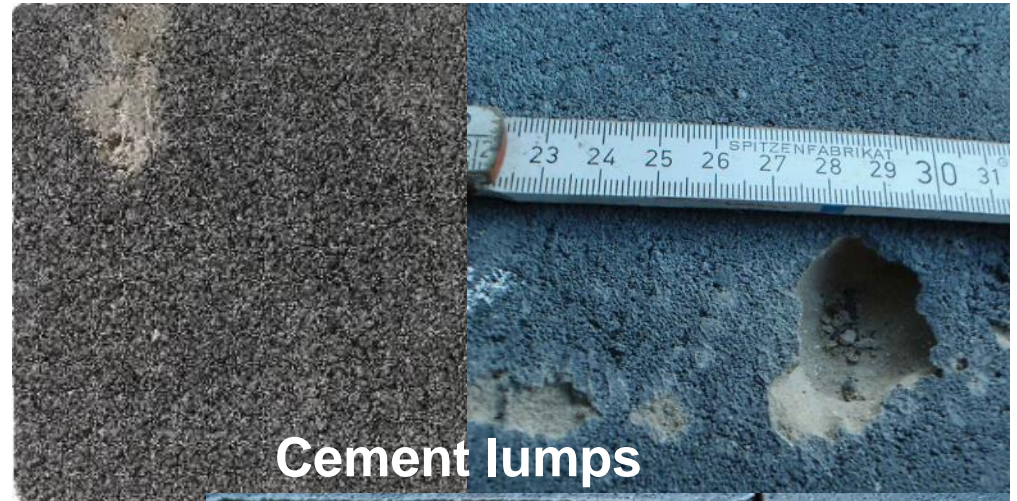
Concrete applications

- Roof tile concrete
- Facing concrete
- Lightweight concrete
- Foamed concrete
- Fiber concrete
- Railway sleeper concrete
- Self-compacting concrete
- High-strength concrete
- Ultra high-strength concrete
 - from stiff to self-compacting
 - with any grain
- Translucent concrete
 - 3-5% glass fibers are added



Why to use Eirich?

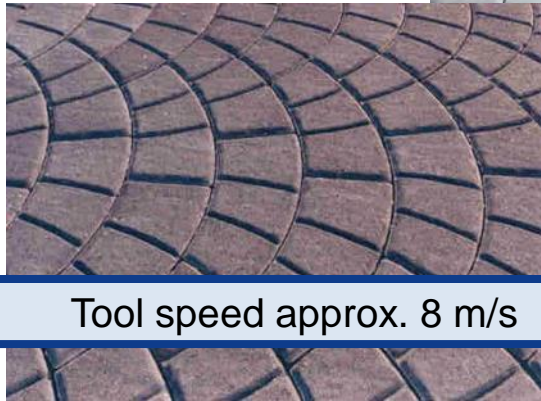
Facing concrete mixed in „**simple**“ mixers



Why to use Eirich?



Facing concrete prepared in Eirich Mixers



Tool speed approx. 8 m/s



A material in transition

Concrete = Three-component system

In the past

Aggregate

Cement

Water

Concrete = Five-component system

Today

Aggregate

Cement

Water

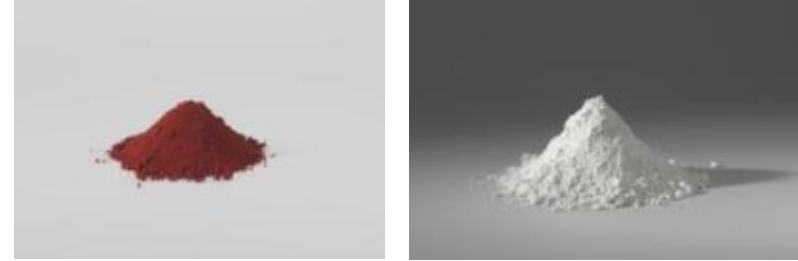
Admixtures

Additives



A material in transition

Concrete – additives / admixtures?



Additives:

> 50 g per kg cement e.g.

- Fly ash, fibers,...
- Limestone powder, coloring pigments,...

Admixtures:

< 50 g per kg cement, e.g. liquid or powdery materials,

„chemical additives“ such as:

- Fluidizers, concrete liquefiers
- Retarders, accelerators
- Air-entraining agents, stabilizers,...

Current trend among finished parts

Use of higher-performance concrete (e.g. HPC / UHPC)

- Finished parts are required to be smaller and lighter
- Steel reinforcement bars have to be replaced by steel fibers
- **Challenge:** Distribution and orientation of the fibers



Test for Max Bögl in 2003
with a R23 VAC

Current trend among paving blocks

Color mix

- The facing concrete is comprised of several different colors
- Production of small batches with different colors is necessary
- High demands on the reproducibility of individual batches



- Color mix often requires small batches with different colors
- A third of the nominal filling level (in the R12 as minimum charge is no problem!
- It is very difficult to produce small quantities in a ring trough mixer or a planetary mixer
- e.g.: F.C. Nüdling, Seiferts. A planetary mixer failed to prepare a mix with an acceptable level of quality

Does it pay off to use the EIRICH mixing solution, which because of its quality and technology has a higher price tag than a simple mixer?



A customer reports

Less water, therefore less cement

South Bavaria, manufacturer of: paving stones, prefabricated garages, monoliths, cable ducts, buildings and civil engineering projects

Moist mixes:

Water - 15 %

Cement 380 → 350 kg (- 8 %)

with the same strength values

Dry mixes:

Water - 15 %

Cement 320 → 300 kg (- 6 %)

with the same strength values and better green bond



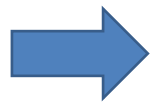
A customer reports

After converting to an EIRICH mixing solution, commissioning in April 2011:

South Bavaria, manufacturer of paving stones, sand, gravel

„We have no more second-class products!“

Previously there were problems with „balls of cement“ when using white cement



**Higher quality of mix,
Therefore lower reject rate**



A customer reports

Savings thanks to a lower reject rate:

North Rhine-Westphalia, Greater Cologne, manufacturer of high-grade paving stones and concrete slabs

Paving stone production with 20 stones per layer

Ring trough mixer: reject rate of 1 to 2 stones per layer

This means:

1/20 or 5% per layer are rejects

Given 1,000 layers per day: 50 m² of rejects

Given 200 work days: 10,000 m² of rejects

Given average manufacturing costs of 10 €/m²

this means 100,000 Euros worth of second-class or scrapped products per year.



After converting production to an EIRICH RV12 mixer, this high reject rate was no longer observed!

Test results of the MFPA Leipzig 09/2012

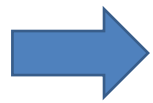
Experience 28-days-strength 70.2 N/mm² from internal customer tests

without cement reduction	79.9 N/mm²	} EIRICH Mixing Technology
at a 5% cement reduction	79.6 N/mm²	
At a 10% cement reduction	73.2 N/mm²	

Even 10% less binder was used in the EIRICH Mixer, the 28-days-strength was higher compared to the reference sample from the planetary mixer!

EIRICH-Mixing Technology

- Higher tool speed possible without segregation
- Higher energy input into the material
- Better disintegration of the cement
- Higher strength at lower material input



The difference in price for the EIRICH mixing solution is usually paid back within one / two years!



This calculation does not take account of the additional costs of processing complaints, disposing of the rejects and delivering replacement products

Max Bögl, Bridge at Gärtnerplatz, Kassel, Germany



Turbines from Max Bögl, Germany



Rieder Faserbeton, Soccer City Stadium, Johannesburg



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Frankfurt Airport, 2 Bridges over the Motorway



Our customers' products



Our customers in Indonesia

PT Artistika Inkernas

C.V. Bakti

P.T. Dinatama Rekanusa

PT. Indoprima Gemilang

PT. Daya Baru Agung

PT. Sumbermitra Sarijaya

PT Sango Ceramics

Philips Indonesia

ESAB

PT Budiprima Baya Tangguh

P.T. Sinar Stupa Elektro

CV. Karya Hidup Sentosa

PT. AT Indonesia

Bohler Welding

PT Indoporlen Refractories

Monier Indonesia

PT. Janmar

PT. Briketama Anugrah

PT. Krakatau Steel

PT JGC

PT Jaya Indah Casting

PT. Pindad (Persero)

Texmaco Perkasa

Nissin Brake Indonesia

P.T. Asama Indonesia

PT. Akebono Brake Astra

Lincoln Electric Voestalpine

PT. International Chemical
Industry

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