

System Solutions for the Building Materials Industry

LÖDIGE - ALWAYS THE RIGHT MIX

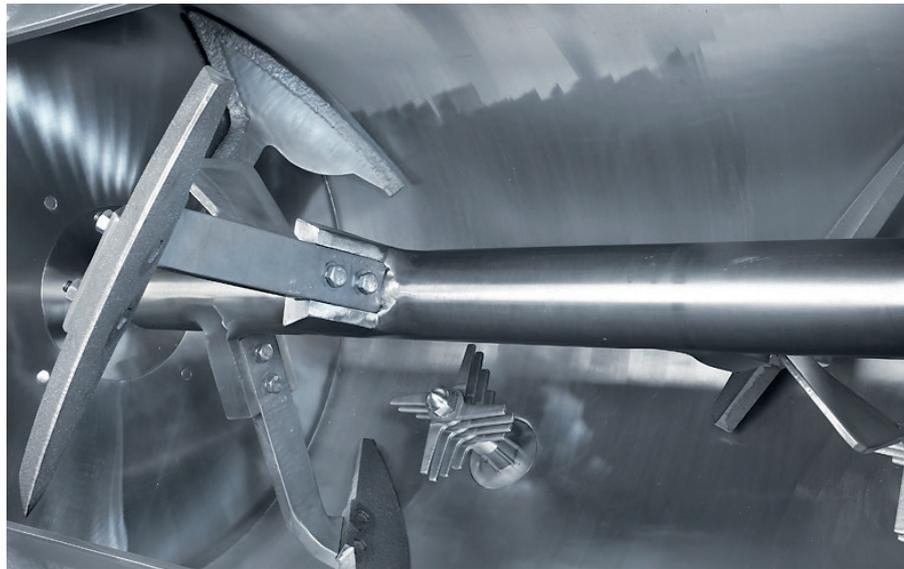
Cost-effective Mixing and Processing



Development of System Solutions in Close Cooperation with Customers

Lödige System Solutions

- Mixing
- Granulating
- Homogenizing
- Drying / Cooling
- Coating
- Recycling



The Building Materials Industry – An Important Economic Factor

The building materials industry as a traditional sector of the economy is an important innovation driver in the field of building materials giving employment to about 145,000 persons and creating a turnover of approx. 32 billion. 600 million tons mineral raw materials are extracted, treated and processed yearly. And this only in Germany!

Furthermore, there are the secondary raw materials such as the recycled building materials and slags. With modern production processes and products, this branch of industry contributes to a sustainable economic development.

Over centuries this industry creates durable things of lasting value – and culture, too.

Think about the Cologne Cathedral, the Frauenkirche in Dresden or the own bathroom renovation.

The building industry is always involved.

Partnership and Cooperation ensure Problem Solving and Project Success.

We develop optimum concepts for individual applications in close cooperation with our customers. We regard our services to the customer as being one that is aimed at developing and installing a processing system of highest quality. Competent process engineers confer with the customer to develop first solutions. Practice-orientated trials at our state-of-the-art Research and Test Centre provide the back up for development of a customer-specific system. Qualified engineers convert the process concept into a system combining high quality machine technology of robust construction with functional controls. Modern production systems and certified manufacturing methods are guarantees for system quality and punctual delivery. Experienced technical personnel and commissioning engineers integrate Lödige systems efficiently and punctually into production units worldwide. The machine reliability especially required in case of heavy-duty use is ensured by our maintenance and repair service available 24 hours a day.

[You will find detailed descriptions of our systems in our brochures and flyers.](#)

Lödige Mixing and Processing Systems for the Building Materials Industry

Wide experience is required for handling products for the building materials industry. Detailed knowledge of the behaviour of these products is essential for development of optimum mixing and processing systems. More than 1,000 Lödige mixers are installed worldwide in this branch of industry.

Leading producers of building materials entrust the production of their quality materials to our mixing and processing systems which they have optimized in cooperation with us to obtain customer and product orientated units.

Lödige provides innovative, cost-effective and practice-proven systems for every possible method of modifying and finishing building materials.



Rendering / Mortar / Plaster for Flooring / Blast Furnace Slag Cement

- exterior plaster
- concrete flooring
- facing plaster
- coloured plaster
- refractory materials
- filling mortar
- blast furnace slag cement (in diverse types)
- interior plaster
- air entraining plaster
- masonry mortar (mortar binder)
- repair mortar
- special concrete
- first coat rendering
- casting compound



Components and additives

- retarding agent
- cellulose
- fibrous materials
- fly ash
- highly hydraulic lime
- granulated slag sand
- lime hydrate
- clinker (brick)
- perlite
- pigments
- pozzolanics
- raw cement
- chamotte
- slag
- quick setting agent
- stone dust
- trass
- powdered clay
- vermiculite
- white cement
- cement



Gypsum and Gypsum Boards

- gypsum fibre board mixes
- sandwich plaster board mixes
- fillers for gypsum board systems



Adhesives, Knifing Fillers and Multicoloured Fillers

- insulation adhesive
- tile adhesive
- flex adhesive
- knifing fillers
- filling mortar
- multicoloured fillers



Protective agents for buildings

- bitumen and chamotte powder
- sealing materials
- water repellent agents
- wood preservatives



Insulation systems

- insulation board mixes
- insulation from recycled materials
- insulation material mixes
- pore forming material mixes
- polystyrene insulation material
- silent surfaces
- insulating plaster (vermiculite/EPS, etc.)



Boards / Bricks / Pre-Fabricated Parts

- mixes of paper fibres for tiles
- ceramic filter materials
- mixes for cladding panels
- mixes for tile moulding compounds
- mixes for ceramic plates
- furnace lining materials

Best Mixing Quality in Minimum Time

Lödige provides the building materials industry with mixing and processing systems which guarantee maximum mix homogeneity, reliability and availability for cost-effective production.

Maximum mix quality within minimum mixing times guarantees reliable quality and competitiveness of the customer's products.

Short mixing times and process-orientated drive power reduce power consumption.

Short mixing times and optimized discharge technology, resulting in a higher number of cycles, considerably increase the production volume in the same size of machine.

The optimized discharge technology drastically minimizes the residual material left in the mixer, thereby reducing the amount of cleaning required when a recipe is changed.

Low-maintenance mixers provide maximum availability for production.

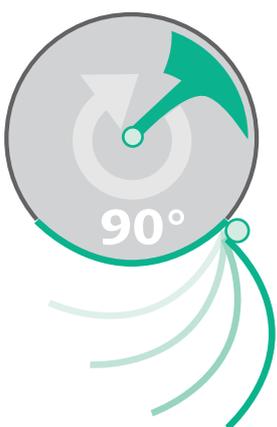
Optional combination of standard components for proportioned, uniform product discharge guarantees segregation-free transport of the product.

The use of specific seals in line with mixed products ensures continuous, heavy-duty operations.

Easy access for inspection, cleaning and for the replacement of wear parts reduces maintenance works and standstills.

Materials and surface qualities meet the stringent wear requirements to a large degree thanks to an appropriate selection and machining ensuring a long service life.

The configuration of mixing elements, developed during numerous tests and projects, is adapted to each mixing application to produce consistent product quality.



Batch Mixer of type DBE with one-door discharging system over the entire length of the drum (opening angle of the discharge door 90°). DBE Mixers are available in sizes with total volumes up to max. 6000 l.

Operation of Lödige Mixing Systems

Mixing and Processing in a Horizontal System

Ploughshare® Shovels rotate as mixing elements in special arrangement on a horizontal shaft in a horizontal, cylindrical mixing drum.

The size, number and positioning, geometric shape and peripheral speed of the mixing elements are coordinated to cause three dimensional movement of the components.

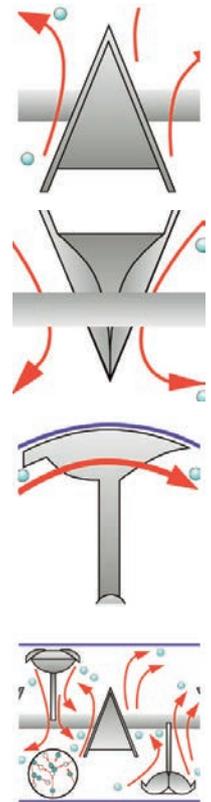
Turbulence in the product, with total involvement of all material, prevents the formation of dead or low-movement zones in the mixing drum and promotes high speed, precision mixing.

The specially shaped shovels lift the product radially from the wall of the drum to prevent particles from

becoming squashed between the mixing elements and the drum wall. The mechanically generated fluid bed is, therefore, ideal for mixing components with widely varied bulk densities, particle sizes, rheological properties and mass fractions.

The effect can be further intensified by Ploughshare® Shovels specially modified for mixing components in the building materials industry. This type of mixing element provides definite advantages with regard to the product and power consumption in compliance with specified process parameters.

In special cases the mixing elements may require additional support which is provided by separately driven, high speed choppers.



Schematic representation of the mechanically generated fluid bed



Lödige Ploughshare® Mixer in standard design

Mixing and Granulating Systems

*Laboratory Mixer
of type L with
static drum.
Available in 5, 10
and 20 l
volume; mixing
support as option*



Machines for Product Development

Lödige laboratory systems are ideal for the development of products under real industrial conditions. They provide unlimited scale-up to product size of parameters obtained during trials and relevant know-how concerning product behaviour.

Machines for Small Production

Essential criteria for special mixing applications in small production quantities and small batches are provided by processing systems in practical, graded sizes. The machines are designed for manual or semi-automatic operation. This system has particular advantages in cases where there is frequent change of product, where the use of the machine must be variable and flexible process handling is essential. The high availability due to application orientated machine technology reduces service frequency. The machine design guarantees easy and thorough cleaning.



Continuous Mixing and Granulating in a Horizontal System

The continuous Ploughshare® Mixer also operates according to the mechanically generated fluid bed introduced to mixing technology by Lödige. This mixing system achieves high throughputs which can be varied depending on residence time, filling degree and product properties. The addition of liquids and the coating of particles are possible in the continuous process too. The continuous process is operable at filling degrees between 20 and 50 % without influencing the mix quality. The mixing elements are designed to achieve constant backmixing during the residence time prior to discharge the mixed product via the outlet. The adjustment of the size of the discharge opening by means of a slide or an adjustable weir has a direct influence on the residence time.



Continuous Mixer of type KM-DW with inside discharge weir

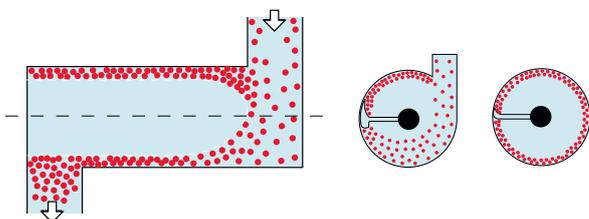


Continuous Mixer of type KM-D in special design with exchangeable anti-wear lining



High Speed Continuous Mixer of type CoriMix® CM

The Lödige High Speed Continuous Mixer CoriMix® CM excels with wide range of applications for mixing, humidifying, granulating and densifying processes. The system is based on the high peripheral speed of the mixing shaft of up to 40 m/s, the resultant centrifugal force forming an annular layer of product. The high shearing intensity in the annular layer is generated by the high differential speed between the rotating, specially shaped mixing tools and the mixer wall. Depending on the application, the residence time can be influenced by modifying the degree of filling, the rotation speed, the geometry and adjustment of the mixing tools as well as the mixing drum length and the volume flow rate. The system offers the possibility to divide the mixing chamber into zones of different shear intensity, thus permitting system optimisation for varying product properties. The liquid components are directly introduced into the annular layer. This ensures a homogeneous distribution within the product and avoids wetting of the mixer wall and mixing shaft. CoriMix® systems provide optimal cleaning as the mixing drum is divided axially over the entire drum.



Principle of the Ringlayer Process

Practice-proven Process Measuring and Control Technology for ready to use System Solutions



Process measuring and control technology is developed and supplied as required. The modular components of this system mean that the customer can expand the automation, including recipe administration and integration in central operation controls, as required.

At the top:
Batch Mixer for
special adhesives



Ploughshare® Mixer with automatic
bag filling



Complete system for processing
heavy-duty mixes

Quality in Details for Perfect User-Orientated Systems

Top quality machines and product-orientated unit specifications guarantee maximum service life spans and constant availability of the system. Our Customer Service is targeted at maintaining this quality.

Long-term, effective operation of a system can only be guaranteed by detailed precision. Lödige adapts the mixing system and integral system components to the exact requirements of the product to ensure consistent high-quality products.

In addition to installation of our machines and supervision of commissioning with and without product, Lödige also provides advice on inspection intervals, inspection methods and spare parts to be held in stock.

We supply information for example on new applications for a unit and answer questions regarding optimization or modification of processes.

In addition to this we provide instruction to personnel for operation and maintenance of the unit and control systems.

Contact us for information about the wide range of facilities available for running trials at our Research and Test Centre. You can also hire a machine and run trials on site.

Compare our services. In addition to the product-orientated production system, Lödige also offers you a competent partnership which includes service to safeguard your investment and the high quality of your system.



Ploughshare® Mixer specifically designed to meet the customer's requirements



Mixing elements in serrated design optimally suitable for the application

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Lödige supplies high-grade components, subsystems and systems for technical processing applications in a wide range of industries. We are specialized in the field of mixing, granulating, coating, drying and reaction. Our profound knowledge of processes, development and production enables us to contribute to the success of our partners throughout the world.

Lödige, which was founded in 1938, is a family-run business in its third generation now.

With the invention of the Ploughshare® Mixer, Lödige created a mixing unit that can cover a wide range of different processing tasks. This unit forms the basis for numerous innovations in the area of mixing and processing technology.

Industrial mixing and processing technology has been significantly influenced by Lödige and will continue to be so in the future.

Over 500 patents and more than 30,000 machines and systems demonstrate our experience with customer-oriented system solutions. Lödige operates with more than 300 employees worldwide and supports its customers with a network of subsidiaries, technical offices and agencies.