

ZEPPELIN[®]

All specialists under one roof

ZEPPELIN[®]
SILOGISTIC

Turn-key Plants from one Single Source

Economic – track-proven – fast



Turn-key Plants



A century of experience gained through your tasks

The industry sector of the Zeppelin Group is among the leading manufacturers of plants for storing, conveying, blending, and dosing of premium bulk solids. Thanks to our world-wide activities and locations in all important industrial centers we can always provide our clients with the latest, most innovative and reliable technology to ensure maximum economic success.

As the direct successor of Count Ferdinand von Zeppelin who turned the human dream of flying into reality by building his legendary airships over a century ago, we are used to looking ahead. Constantly innovating, striving for perfection and maximum functionality in our products has turned us into the company that Zeppelin is known as today: the technology leader for handling premium bulk solids.



On site world-wide – always near our customers. Production plants in Germany, Belgium, Brazil and Saudi Arabia, production partners in Thailand and China as well as subsidiaries and representations all over the world enable Zeppelin to serve its customers with speed, flexibility and the utmost closeness to them. More than 200 engineers – including specialists in chemical engineering – guarantee innovative and economic construction of plants.





Zeppelin has been the leader in the international market of silo construction for decades. Thanks to our own modern manufacturing and the international experience of our assembly staff and service engineers we guarantee quality of the highest level.

Competence in bulk solids handling – you can rely on Zeppelin

The industrial Zeppelin Group and its various divisions are focused on the requirements of their customer groups. All activities have, however, one thing in common: the economic handling of premium bulk solids.

Silo plants for the plastic, food, and chemical industries integrated in one logistics concept: from consultation and design to manufacture, assembly and after-sales service.

Turn-key plants for the plastics processing and chemical industry as well as for rubber producers and tiremakers.

Conveying components for any application: for powders or pellets, for high or low pressures, for products with good or poor flowability, for standard or special applications.

Silogistic: turn-key plants for plastics producers, engineering companies and forwarders. Zeppelin is the world-wide leader in the planning and construction of logistic centers and manufacturing plants.



Pulling all the strings: the central office for the industry sector is located in Friedrichshafen, Germany. Here, in the world's largest Technology Center for pellets and powders, tests are carried out on an industrial scale. The test results are available to all subsidiaries, therefore allowing our clients to always be on the safe side – no matter where their plant is located.



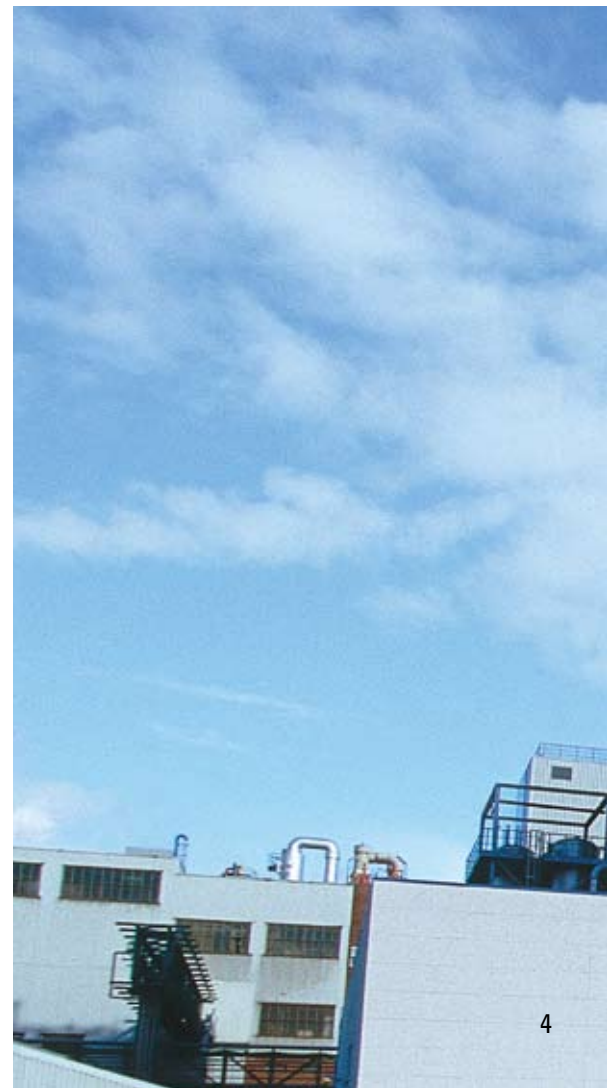
Innovative logistics systems for your success

The quality of a complex system depends on the quality of its individual components. Therefore, we develop, design and produce the most important components of a logistics plant ourselves.

Zeppelin supplies turn-key plants from one single source. Whether silos or conveying technology, from civil to detailed engineering, from the coordination of the suppliers to the assembly and initial operation of the plant on site. Thanks to the synergies within the group of companies, the thorough selec-

tion of partners and the assignment of certified suppliers, you will benefit from:

- a complete system adjusted to your requirements
- innovative concepts to meet your specific demands
- fair total investment costs
- rapid plant availability due to the reduced interfaces and optimized processes
- optimized operating expenses
- coordination of all foreign suppliers
- a single contact responsible for the complete project for a minimum of interfaces



The Zeppelin business activities at a glance

Silo technology: aluminium or stainless steel silos for storage, blending and homogenization. From design via production to the assembly including steel structures and complete equipment.

Conveying technology: layout, planning, manufacturing of our components, delivery and assembly on site as well as commissioning, consultation and problem solving.

Warehouse concepts: outside or inside storage. From lightweight construction halls to the planning of office spaces.

Packaging technology: complete bagging lines, FFS machines, palletizers, wrapping machines and equipment for filling bulk storage bins.

Control and management systems: from machine control units via SPS control systems to complete warehouse management systems.

Civil engineering: from surface consolidation via foundations and mains to drainage and truck weighing systems.

Logical concepts ensure smooth logistic processes.





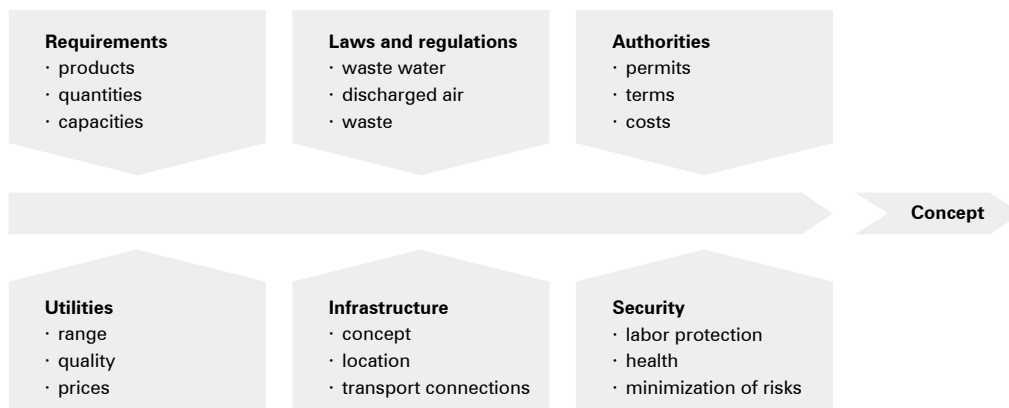
Success can be planned – with Zeppelin

Planning a logistics center always starts with a detailed analysis of the basic conditions. Being familiar with legal regulations, knowing how to deal with the authorities, and having the experience necessary to adapt individual parameters all contribute to a rapid design development.

All basic conditions and requirements of the parties involved in the plant engineering are integrated into the basic design, ensuring you absolute planning reliability, best future prospects and more. With a Zeppelin turn-key plant you will fulfil both current and future requirements. And as markets rapidly change, secure yourself today the flexibility necessary for your operational success of tomorrow. You hold all the aces with Zeppelin because we know your markets.

Zeppelin customers benefit from every individual plant we have built so far as our good ideas and technological innovations influence each new design. Furthermore, our experience in turn-key projects allowed us to develop a system that considerably reduces costs by standardizing individual project steps and basic technologies. You therefore ensure maximum functionality with a convincing cost-performance ratio.

- application of reliable standard technologies and system solutions
- project planning based on project document samples
- synergy effects thanks to optimized configuration
- application of reliable project and company standards
- permanent optimization and modifications of existing designs



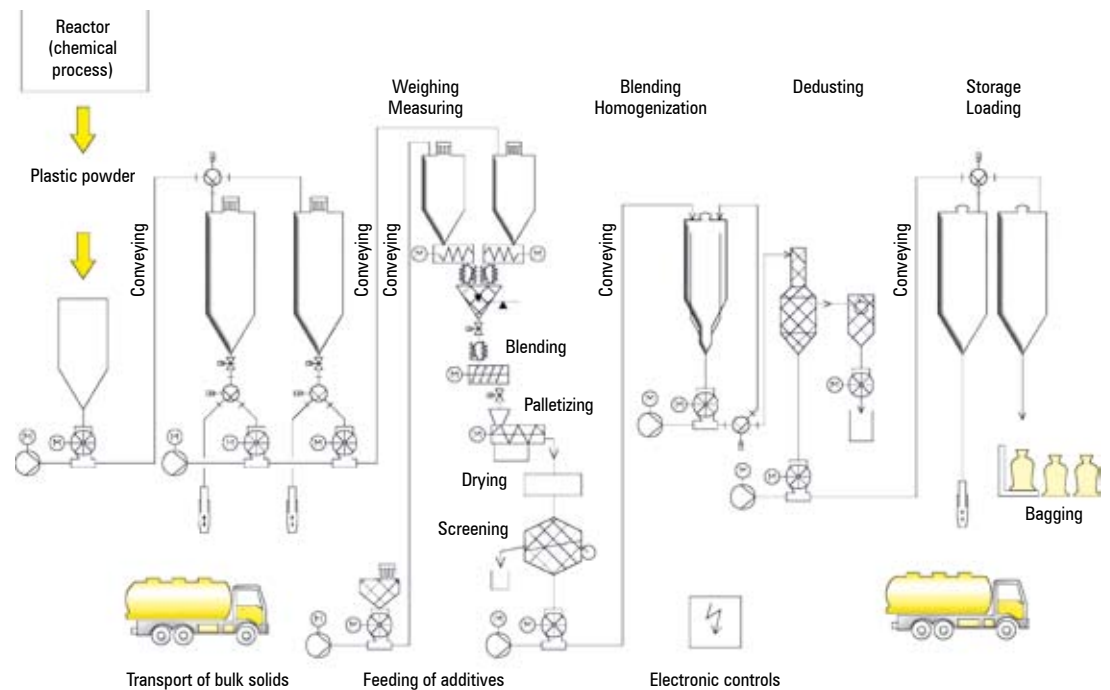
Zeppelin technology – the perfect example of profitable turn-key systems

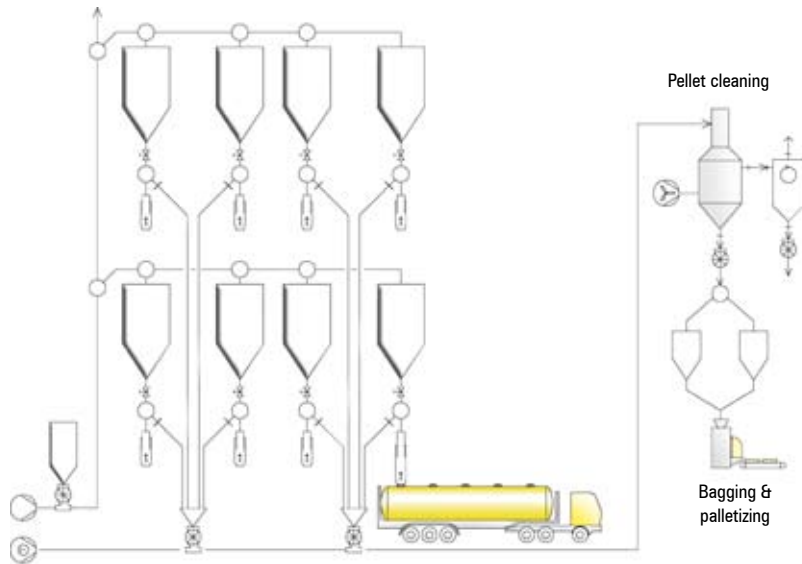
Whether minimizing interfaces thanks to the Zeppelin Group complete scope of supply and services (e.g. production of silos and conveying components) or using the “Brainware” of our plant design engineers – you can always rely on Zeppelin.

Clever ideas – high-quality products – reliable processes. This means reduction of investment costs and minimization of operating expenses for you!

Zeppelin, as general contractor, combines its own advantages with the skills of selected cooperation partners – in your interest.

Interfaces can be minimized already during planning and the advantages for assembly are quite clear: if all operations are coordinated by one designated party, priorities can be changed on request without affecting the complete process and so the time schedule.



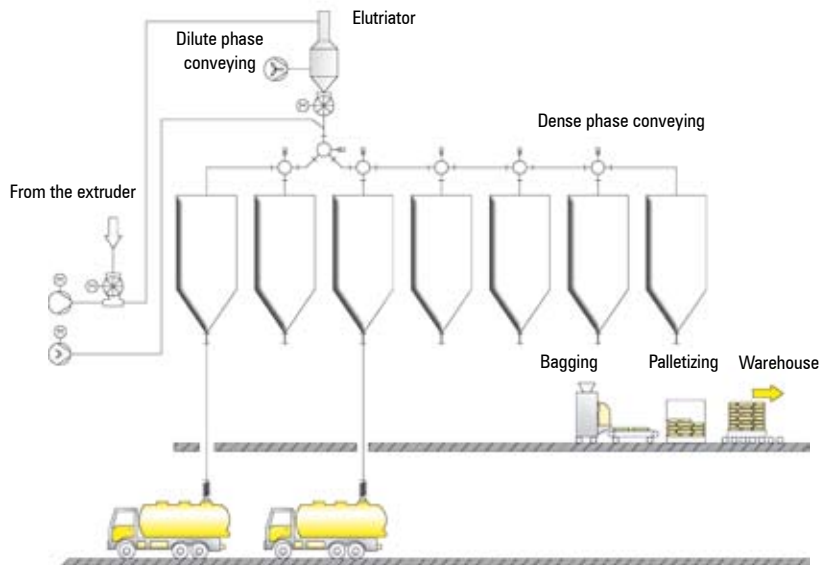


Maximum flexibility

Whether bulky material or in bags – with Zeppelin designs you can always react to the current market requirements.

Individual design

Whether a one or two-story design – our plants correspond to the market requirements and your guidelines (e.g. allowable height of construction, product quality, total investment costs and operating expenses).

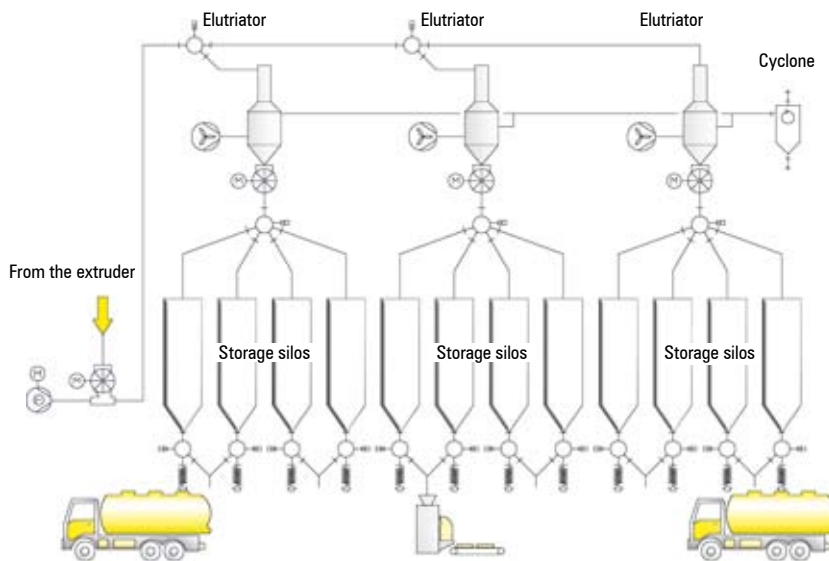


Product quality

A system that combines dilute and dense phase conveying with an integrated elutriator minimizes wear of bulk solids and allows optimum product quality. You will save money daily!

Concept for optimizing space

With a double-story design, maximum functionality can be ensured even with the smallest available space. Why spend more if the defined tasks can be fulfilled at favorable prices?



Energy costs

By using gravitational force, the amount of energy required is significantly reduced, resulting in lower operating expenses and providing you with important advantages on your markets.

Innovative components

When used wisely, Zeppelin diverter valves can feed 4 silos each. Experience and knowledge that make you save.



Silos and vessels from the international market leader

Our customers' advantages concerning silo technology are clearly visible: thanks to our production facilities in Germany, Belgium, Brazil, China, Saudi Arabia, and our production partnership in Thailand, we are able to react with particular speed, flexibility and cost efficiency to your requirements. You will of course benefit from much more than the specific advantages of the Zeppelin products!

Storage silos:

- available in diameters ranging from 2,400 to 9,000 mm
- standardized for bulk densities of 6 kN/m³ and 10 kN/m³ (others available upon request)
- with long or short silo skirt
- for anchoring on steel structure or concrete foundation
- with a comprehensive accessories program from silo management to control systems





The right solution for every application

Zeppelin does not only offer a large variety of silo types: decades of experience in silo technology as well as thousands of silo plants supplied to locations all over the world are the basis for a product program that covers all of your needs.

Silos in panel version: a clever idea for minimizing costs. The individual prefabricated segments are assembled on site, providing advantages in case of unfavorable weather or extremely tight schedules.

Emboxable silos: reducing transport costs significantly. The assembly on site is carried out quickly and smoothly.

Blending and homogenization silos: Zeppelin offers a large variety of blending and homogenization silos. Suitable for bulk solids with good and poor flowability (e.g. powders, pellets, recycled products, dry-blends, compounds). These systems are available as turn-key or retrofit solutions.



Conveying systems that meet your individual requirements

Your requirements towards your plant are utmost process reliability, maximum economic efficiency, and the assurance of an appropriate bulk solids' quality for conveying. Zeppelin offers its customers the highest possible profit and advises them accordingly from begin on.

Basically three types of conveying systems are used in the production of bulk solids, in logistics terminals, or for feeding the processing machines. The system used depends on the customer's requirements.

Pneumatic conveying – dense phase or dilute phase conveying: gas or air is used for conveying the product.

Hydraulic conveying: water is used for conveying the product.

The selection of the conveying system or the combination of conveying processes most suitable for your application depends on a lot of different criteria. The characteristics of your bulk solids (e.g. the grain size and wear resistance), the plant parameters (e.g. conveying distances), the design of the complete plant (e.g. whether independent silo farms are planned) as well as the investment costs and operating expenses have to be taken into consideration. Combinations of conveying systems such as dilute phase conveying for long distances followed by separation and finally gentle dense phase conveying are also possible.



First-class components for first-class systems

The reliability of a complete system depends on the quality of its individual components. Therefore, Zeppelin develops and produces the most important components itself in order to ensure process reliability for the complete plant.

As plant manufacturer, we naturally know the requirements to each individual component. After all, the complete system relies on every detail – and on the optimum adaptation of the single components. Our impressive range of components from rotary feeders and diverter valves to elutriators, samplers, and cyclones is renowned for their highest functionality and operating efficiency in the daily use – exactly what you expect from Zeppelin products.





Leading-edge technology is no luck, it's an achievement

Your investments in individual components and complete systems must be profitable, using the right product for a specific job, readily available and at a fair price. Zeppelin, as the technology leader, runs a powerful development and test center researching different technologies for handling bulk solids.

To further contribute to your success we offer the services of our Technology Center whose capabilities span the entire Zeppelin product range. Acquiring factual information on your product helps you to select the best possible component or plant design.

Our Technology Center is built on an industrial scale to meet our customers' wide range of demands. For this reason we can provide you with tailored answers to your individual tasks, with trials on an industrial scale and special configurations that can be quickly installed.



Powders or pellets – we have all the answers

The heart of our research and development activities are the two Technology Centers – one specially designed for pellets and the requirements of the large scale chemical industry and the other for powders and additives (for the rubber and plastics processing industry).

Whether commercial-size installation or processing plant, we conduct full scale tests to avoid the uncertainties of scale-up calculations with the help of the Technology Center's impressive range of options. Because our customers naturally expect maximum process reliability, Zeppelin provides them with unquestionable results as a solid basis for their investment decisions.

To ensure the completeness and accuracy of the results, Zeppelin provides:

- competent result analysis by its specialists
- conclusive test reports and documentation
- determination of relevant design parameters



The Zeppelin Group of companies: All specialists under one roof

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