

Your products put to the test  
In the customer center for food technology

Food Technology Center



# Engineering your success



As a globally leading plant engineering company for the handling of high-quality bulk materials and liquids, Zeppelin Systems has developed impressively over the decades. We work for various different sectors of industry and supply all services in plant construction from a single source, and basic engineering and the production of our own components to final assembly and comprehensive after-sales services. With our economic power and our global network, we have been a reliable partner with our customers for many years.

Every Zeppelin plant is constructed according to individual customer requirements. This is possible thanks to our specially developed innovative processes and technologies.

With the largest association of technology centers for bulk materials in the world and our extensive know-how from more than 130 years experience in plant construction, we develop the perfect solution for any requirement to ensure what is most important: your success.

## Zeppelin plant engineering – business fields

### **Reimelt Food Technology**

Plants for the food, confectionery and bakery industry

### **Polymer Plants**

Plants for plastics producers and forwarders

### **Plastics Processing & Rubber Plants**

Plants for the plastics processing and rubber industry

### **Henschel Mixing Technology**

Mixers, extruders and compounders

### **Liquids Processing**

Plants for the beverages industry

### **Silos & Filters**

Silo technology and filters

### **Components**

Diverter valves, rotary feeders, separators ...

### **After Sales Service**

Assembly, maintenance and spare parts

### **Quality Service**

Services in quality management



## From theory to practical tests

Would you like to know how the chocolate flakes in your new recipe react to the mixing process, what kind of conveying system causes the least abrasion on a specific raw material or how to ensure that your agglomerates remain undamaged? Then come to our Technology Center.

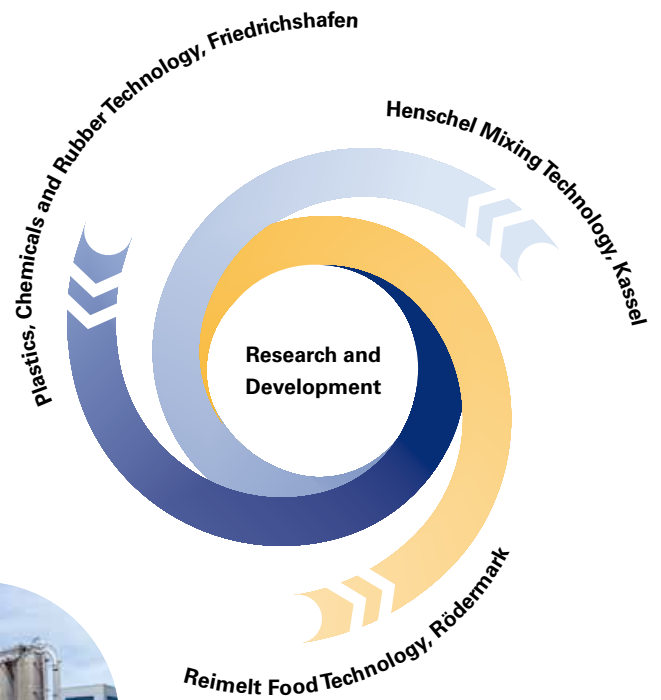
We provide you with all the required testing facilities for dosing, conveying, weighing, sifting and mixing your recipe. Our service staff and development engineers will provide you with assistance and advice. At our laboratory, we can evaluate your tests. Our meeting room with state-of-the-art office equipment allows us to analyze and discuss the results with you in a quiet atmosphere. Should you prefer carrying out your tests yourself, you have the option of renting our technology center and using it independently after comprehensive briefing.





## Global leader

Together with our technology centers in Friedrichshafen and Kassel, we are the largest association of technology centers in the world for handling high-quality bulk materials. While Friedrichshafen covers the area of plastics, chemicals and rubber, the Technology Center in Kassel specializes in the area of mixing and compounding. In addition, we work together with the IGV Institute for Cereal Processing Ltd. in the fields of bakery and food technology and other renowned institutes and universities.



**Friedrichshafen**  
Plastics, chemicals, rubber and tire industry

**Rödermark**  
Food industry

**Kassel**  
Mixing and compounding

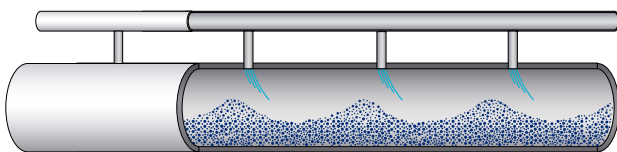
## Customised test assembly possible



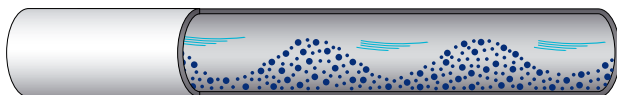
At the Food Technology Center in Rödermark, we are able to cater specifically to your needs. Our two-story test site is not equipped with a permanently installed standard system, but with a self-developed modular system, which ensures a high degree of flexibility.

Depending on the respective test assembly, we construct a tailor-made system for you for the processes of filling, conveying, dosing and mixing. At the adjacent laboratory, we can directly carry out various analysis and measurements. The Technology Center was designed in accordance with the latest hygiene standards for food technology and offers ideal conditions for tests regarding the handling of liquid and powdered raw materials.

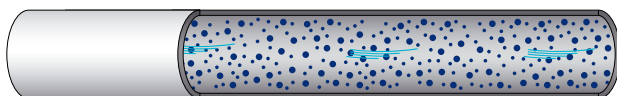
## Gentle conveying



Secondary air conveying



Bullet conveying



Dilute phase conveying

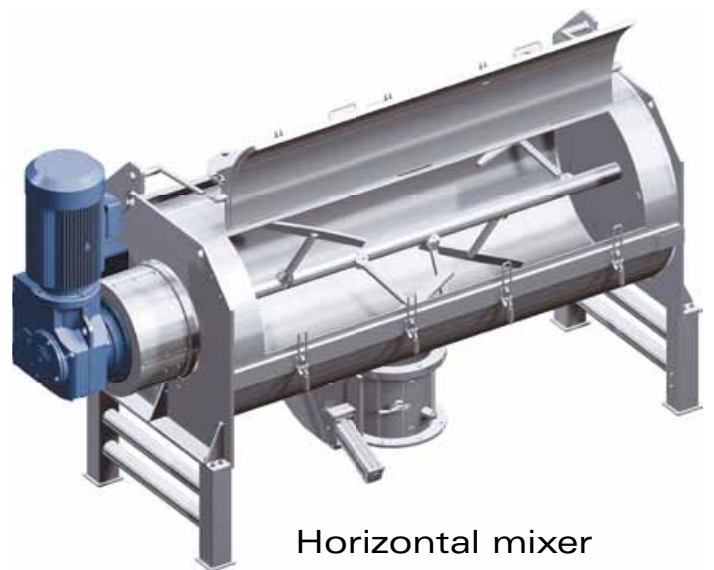
Gentle conveying of products is extremely important for achieving optimum results. Our Technology Center provides various conveying systems for transporting abrasive or easily breakable bulk materials, such as agglomerates:

- » Secondary air conveying DN 65 – 125/80 – 320 m
- » Bullet conveying pressure-/vacuum DN 65 – 110/80 – 240 m
- » Dilute phase conveying DN 65 – 110/80 – 240 m pressure-/vacuum



## Customized mixing

In order to be able to achieve optimum mixing results at our Technology Center, we provide various mixers for you:



**Horizontal mixer**

For perfect mixing of dry powders or with liquid injection, even for chocolate mixing.





### Pneumatic Mixer

For gentle mixing of agglomerates and fine powders in the fluidized bed.



### Screw belt mixer

The compact screw belt mixer produces excellent premixes where only small set-up areas are provided.



### Conical mixer

Powder mixtures are discharged with virtually no residues.



## Conditioning

PneumoTherm ensures that the raw materials we test for you have the optimum temperature. In addition to heating and cooling, the fluidized bed system is also suited for drying fluidizable bulk materials. In this way, we are able to determine the influence of temperature and dampness on the product behaviour in plants and produce optimum product properties.

## Exact metering

A metering station with dosing container for dust-free docking and filling of batches ranging from only a few grams to 1,000 kg allows you to meter your recipe exactly. There are metering and conveying screws and rotary feeders with direct drives, which meet strict hygiene requirements, for the metering and conveying of bulk materials as well as the precise filling of scales. Vibro chutes or discharge and metering devices from Kokeisl for the safe discharge of bulk materials with problematic flow properties are also used. The discharge speed can be adjusted by means of a continuously variable slide in order to achieve optimum metering results.

## Reliable sifting

There are eddy current sifters and a vibration sifter for protective sifting and classification.





## Extensive analysis options

At our technology center laboratory, we can carry out various examinations and analysis before, during and after your tests. We have suitable systems for measuring the viscosity of liquids. Furthermore, we can determine the water activity ( $A_w$  value) of products in order to find out more about the absorption or output of moisture. This value is used at a later point in time to select the appropriate air processing systems, e.g. for pneumatic conveying.

Other bulk parameters, such as density or grain size distribution, can also be determined. We can examine grain or agglomerate properties and abrasion under the stereoscopic microscope and the connected electric imaging system.

## Ready for all possibilities



At our own workshop, all systems and components of the Technology Center are regularly serviced and repaired if necessary. This is also where specific modifications are made in order to make your tests a success.

All systems are equipped with modern, modular control technology, which was specially developed by us in part; this makes us able to provide you with services in this field too.



We are there for you



Our operating staff is there for you throughout the entire test series. They install the testing plant according to your requirements, make modifications if necessary, and support your project from beginning to end. On request, you can speak to our competent development engineers, who will be glad to help you with your tests.

### Discretion goes without saying

We have a separate meeting room equipped with state-of-the-art communication media so that you can discuss the test series with your team in a quiet and private atmosphere.

## Testing of dough mixes

In cooperation with the IGV Institute for Cereal Processing Ltd. in Nuthetal near Potsdam, we carry out tests in dough processing. For these tests, we use our continuous mixing and kneading system Codos®.

The Codos®System comprises the complete dosing unit for dry solids and liquids as well as a mixer and a kneader. A matching control completes the system. Ingredients can be added at any time or point via the feeding points along the production line. In this way, sensitive raw materials, such as flakes, fruit chunks, etc., can be added to the dough virtually without being damaged.

The IGV provides a small Codos®System for throughputs of a maximum of 250 kg/h, which can be used with your raw materials and according to your recipes. After producing the dough, it is baked so that properties and taste of the product can also be tested.



# Mixing and compounding



The Zeppelin business unit Henschel Mixing Technology is located in Kassel. Mixing and compounding systems, but also complete plants, are produced here. All the essential key components stem from our own development and production.

At the Kassel Technology Center, the main processes of mechanical process technology – particularly of mixing technology – are provided for the plastics processing and chemicals industry.

It is not enough to adjust machine-related details to production parameters in order to improve our customers' products. In cooperation with our customers, we develop completely new procedures for processing and producing sensitive raw materials. The first results can be checked immediately at our state-of-the-art laboratory.

Many innovations would not have been possible without the Technology Center. Numerous standard processes used today in mixing and refining were developed here. Processing hard and soft PVC by today's standards would be hard to imagine without the Kassel Technology Center. Constant research ensures that our customers are always a step ahead, for example when it comes to products such as metallic powder coatings, master batches, battery production or ceramic powders.

## Global presence

- » Belgium
- » Brazil
- » China
- » France
- » Germany
- » India
- » Italy
- » Korea
- » Russia
- » Saudi Arabia
- » Singapore
- » United Kingdom
- » USA

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