



GLASS. TECHNOLOGY. PASSION.

High-Tech for the Glass Industry



OUR DAILY DRIVING FORCE: OUR PASSION FOR GLASS



01. Welcome

Dear customer,

You are about to enter the world of ZIPPE.

ZIPPE Industrieanlagen, as an independent family company, is serving the International Glass Industry for almost 100 years.

From the beginning we have been dedicated to the task to design and manufacture plants and machinery for our customers that help to create optimal melting material for fascinating glass products.

This is our desire and still we are enthusiastic about it - now in the 4th generation.

Over decades we have seen many changes and improvements in the glass industry, which we have also shaped to some extent by developments that were ahead of their time.

To name a few we think of the first batch chargers, the first fully-automatic batch plants for the glass industry, the first internal cullet return systems, the first batch preheating systems and most modern process control systems including plant-wide-automation concepts nowadays.

Our aim is to continue to provide innovative, outstanding and economic solutions for our customers which help to secure your success and sustainability.

To achieve this, our highly qualified and motivated team is working closely together with you, our customer.

We look forward to meeting you!

Yours sincerely,

A handwritten signature in blue ink, reading 'Ph. Zippe'.

Dr. Philipp Zippe

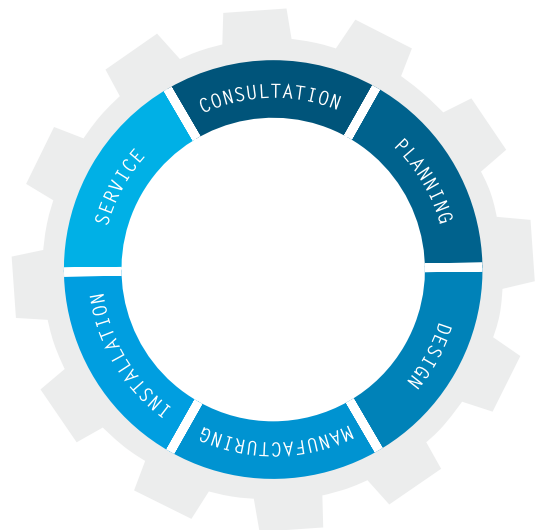
A handwritten signature in blue ink, reading 'Günther Mlynar'.

Günther Mlynar

02. The Company

THE FASCINATION FOR GLASS

Our core business is the development and construction of [batch and cullet systems](#). Our particular expertise and all our passion lie herein. As one of the pioneers in our branch of industry, we were involved in key developments in the glass industry from the very outset. It is for good reason then that our name is being used in many countries as a synonym for different technologies in the batch and cullet processing sector – „It’s a ZIPPE“.



PARTNER TO THE INDUSTRY

We regard ourselves as a [reliable partner](#) to our customers and have at our disposal the expertise and capabilities to deliver projects of any magnitude. At the same time, our customers hold in high regard [our flexibility](#) with which we are able to respond quickly to different requirements and current trends with the appropriate portion of [creativity and innovation spirit](#). This has made us a [preferred supplier](#) for industry leaders.

As one of the few [full-service providers in our industry](#), our spectrum covers all service ranges within plant construction – engineering, planning, design, production, automation technology, installation, site management for all disciplines, commissioning, training for your personnel, and services for ongoing operation.

RELIABLE, FLEXIBLE
AND CREATIVE



From left to right . Managing Director Dipl.-Ing. Günther Mlynar, CEO Dr. Philipp Zippe, Chairman Dr. Bernd-Holger Zippe and Director Dipl.-Kaufm. Volker Kalisch

FROM WERTHEIM TO THE WHOLE WORLD



Technology Centre . Wertheim am Main



ZIPPE Headquarter . Wertheim am Main

- | | |
|---|--|
| 2016 . Dr. Philipp Zippe takes over management, Dr. Bernd-Holger Zippe Chairman | 1991 . Dr. Bernd-Holger Zippe takes over management |
| 2014 . Installation of the 20th "Plant-Wide Automation" control system | 1986 . Construction of the first batch preheater for the glass industry |
| 2012 . Construction of the 550th batch plant | 1984 . Construction of the first batch plant for float glass |
| 2011 . Construction of the 60th float glass batch plant | 1965 . Construction of the first factory cullet processing plant for hot and cold glass waste |
| 2010 . ZIPPE Industrieanlagen GmbH celebrates its 90th anniversary | 1960 . Construction of the first fully automatic batch plant for container glass |
| 2009 . Official opening of the new ZIPPE Technology Centre | 1953 . Development of the first batch charger for the glass industry |
| 2007 . Start of operations at the new ZIPPE Logistic Centre | 1951 . Relocation and founding anew of the company in Wertheim. It is managed by founder Alfred Zippe Sr. and his son Alfred Zippe Jr., with his wife Edith. |
| 2003 . Delivery of the 1000th batch charger | 1920 . Founding of the company by Alfred Zippe Sr. in Haida, North Bohemia |
| 1995 . Official opening of the new ZIPPE Electronic Centre | |

The Company

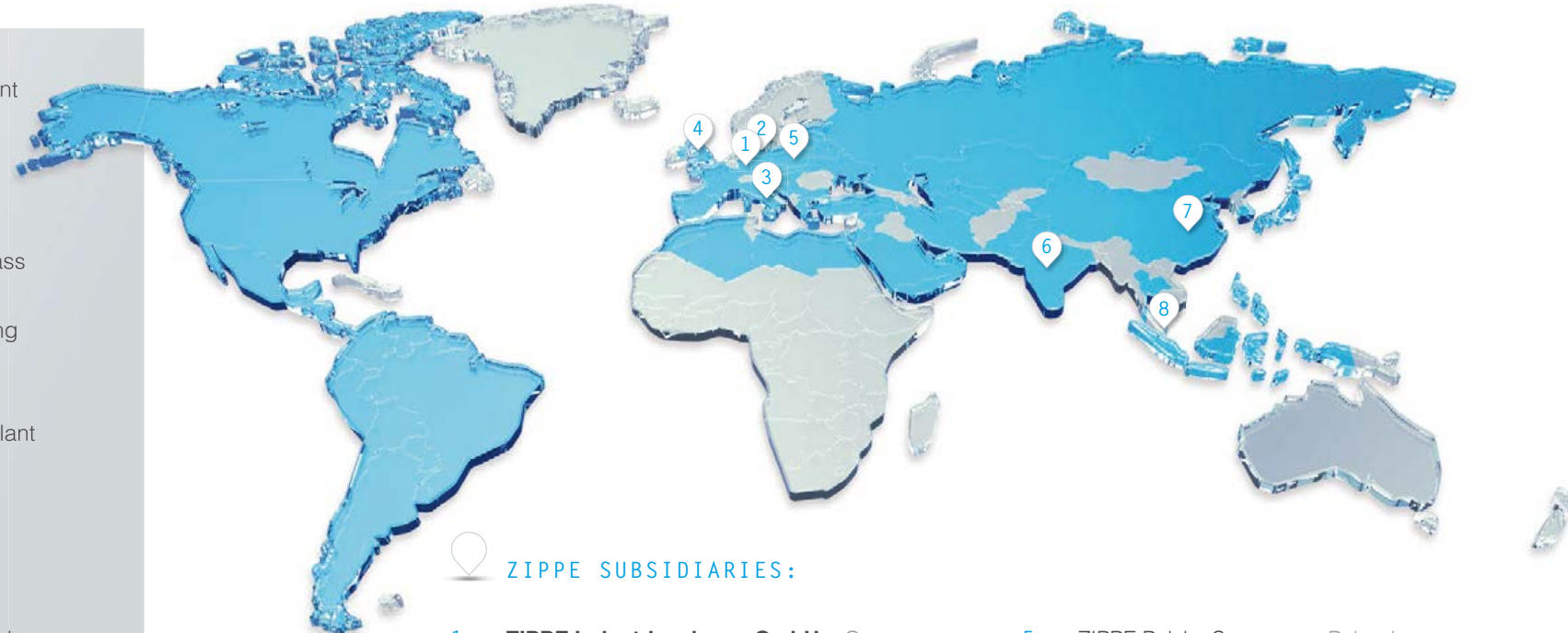
FROM A METALWORKER'S WORKSHOP ...

Following the formation of the company in Haida, North Bohemia, a well-known glass making region, with subsequent relocation of the company to Wertheim am Main, Germany, 1953 saw the foundations laid for ZIPPE's activities in the glass industry. Back then, Alfred Zippe Jr. developed **the first fully automatic batch charger** for a glass manufacturer based in Wertheim. Many decades have passed since. Now we are one of the world's leading suppliers of state-of-the-art, powerful batch and cullet plants, and ensure that glass producers around the globe are able to manufacture high quality glass batch reliably and economically.

... TO A COMPANY ON THE INTERNATIONAL STAGE

With **six subsidiaries** and **30 representatives** across the globe, we have representatives in all key markets in the glass industry.

Every project bears with it new challenges – and no technical solution is alike. Difficult? We don't think so, quite the opposite in fact. The more tricky the task at hand is, the greater is our ambition to find a tailored and cost-effective solution.

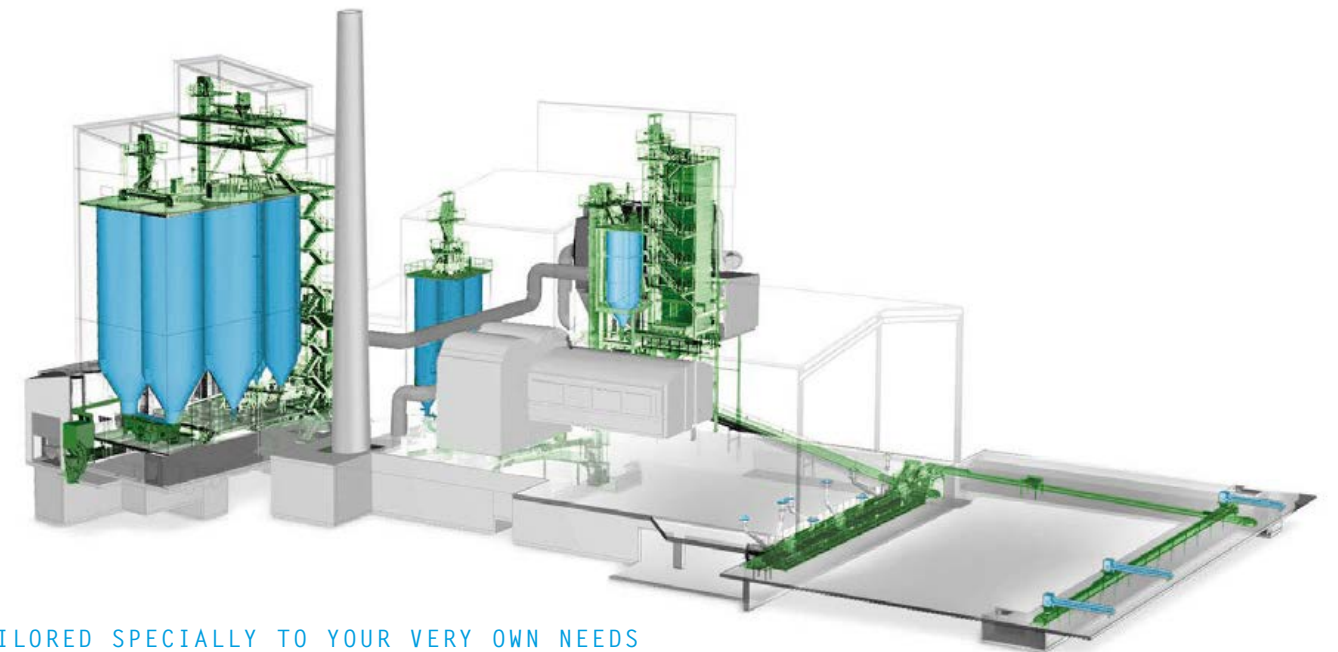


ZIPPE SUBSIDIARIES:

- | | |
|---|--|
| 1 ZIPPE Industrieanlagen GmbH . Germany | 5 ZIPPE Polska Sp. z o.o. . Poland |
| 2 MÜGELNER Maschinenbau GmbH . Germany | 6 ZIPPE Glass Industries India Pvt. Ltd. . India |
| 3 ZIPPE Italia s.r.l. . Italy | 7 ZIPPE Technology Beijing Co. Ltd. . China |
| 4 ZIPPE Ltd. . Great Britain | 8 ZIPPE office . Singapore |

● Countries in which ZIPPE has representations

EXPERTISE FROM WHICH YOU CAN BENEFIT



TAILORED SPECIALLY TO YOUR VERY OWN NEEDS

Whether you come to us with very specific technical specifications, or just tell us what glass you wish to manufacture at which tonnage, we listen very carefully to what you need and put forward a proposal for best possible realisation of your project.

The general conditions for construction of a plant, such as raw material availability and climatic conditions, vary across the globe. These and many other factors must be taken into account in planning. With over [550 batch plant projects realised](#), we have the greatest wealth of experience in our branch of industry. This gives you the security of receiving a powerful and sophisticated system that satisfies all your expectations.

PRECISION FROM THE VERY OUTSET

We deploy the very latest in technology as early as the planning phase for your batch system. Our 3D design is state-of-the-art and the prerequisite for efficient and precise planning. It facilitates smooth processes on site and is a prerequisite for adhering to deadlines.

[Our task is not complete until you are satisfied.](#)



[CAD design](#) . We use the very latest tools to develop and visualise your plants.

04. Batch Plants



HIGH QUALITY GLASS REQUIRES HIGH QUALITY BATCH

ZIPPE batch plants ensure that the batch for every glass type is fed fully automatically into the furnace with the exact consistency and homogeneity needed, at the required amount and at the right point in time – 24 hours a day, every day.

YOUR SYSTEM EXACTLY TO SIZE

Our teams of experts ensure smooth and on-schedule realisation of every order – also as turnkey solutions if so required. Globally leading companies are placing their trust in our expertise – and we are channelling all our efforts into [continual development](#), [innovation and safety](#) so that this remains the case in the future.

THE KEY TO EFFICIENT GLASS PRODUCTION



INNOVATIVE & SOLUTION-ORIENTED



Batch Plants



Batch Plants



05. Batch Preheating



SUSTAINABILITY
THAT PAYS OFF

ENERGY SAVINGS BY USING
FURNACE WASTE GASES

Rising energy costs mean production processes in glass production must be made as efficient as possible.

One way to save costs is to use the waste gases from the melting process to preheat the batch and cullet. This enables a [reduction in the melting energy](#) requirement between [10 and 15 %](#).

At the same time, CO₂ emissions can be reduced considerably and the capacity of the production can be increased. [A batch preheater can be planned as an integrated element of batch processing, but also as a retrofit later](#). As a pioneer of this technology, ZIPPE has been continually refining this technology and is able to offer the most advanced state-of-the-art systems.



AS INDIVIDUAL AS YOUR SYSTEM – THE VERY LATEST AUTOMATION TECHNOLOGY

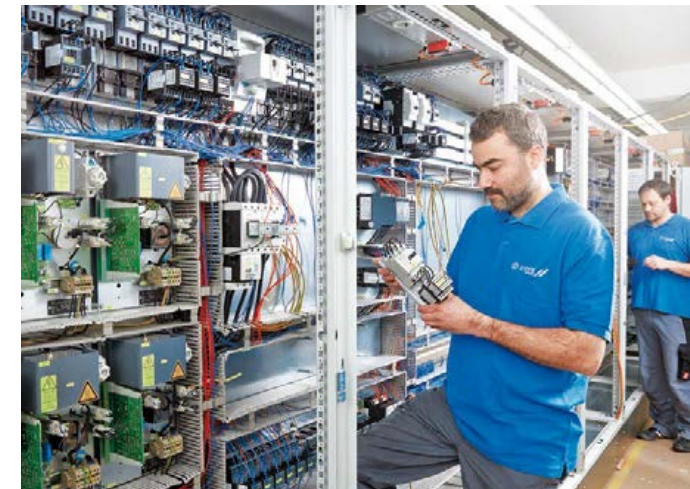
State-of-the-art control technology is a key part of the optimal operation of a batch plant. After all, it is responsible for the efficient, reliable and reproducible operation of a system.

It is for this reason that we attach very special significance to the development of powerful software and hardware systems. Nearly 50 of our employees are realising next generation automation and control systems. This means we are one of the few companies able to carry out complete control development and realisation in-house.

This is the only way we are able to guarantee customers tailor-made and flexible solutions, and subsequently to provide the speedy and effective support expected of production companies today.

Our 24-hour support service enables our customers to phone or email an expert around the clock, who is granted access to your control system online once a secure connection has been established.

06. Control Technology & Process Automation



CONCEPTUAL DESIGN, DEVELOPMENT, INTEGRATION

Our spectrum of services ranges from the development of new systems for batch plants via modernisation of existing plants to the development of special dosing and weighing controls including corresponding weighing computers and weighing indicators.

We work very closely with the most important component suppliers, such as Siemens, Schneider and Rockwell, and so are able to leverage very quickly the latest developments for our control systems. But it is not until seamless integration of the systems into your overall production process that a perfect solution results.



WE OFFER:

1. Project coordination
2. Electrical / hardware design
3. Software development
4. Switch cabinet construction
5. Installation and commissioning
6. After-Sales-Service

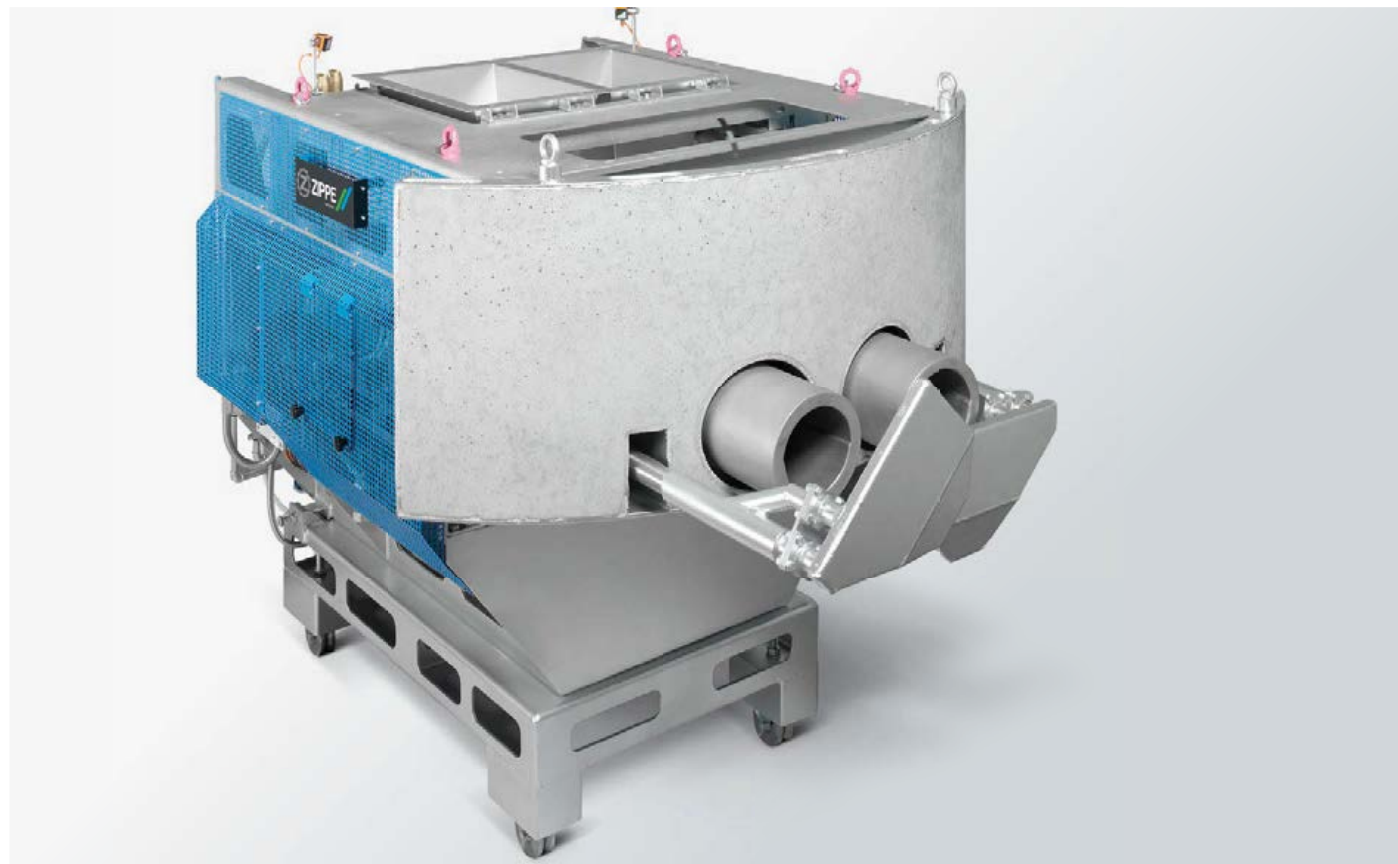
EVERYTHING FROM A SINGLE SOURCE

ZIPPE IS THINKING AHEAD: CONVENIENT CONTROL OF YOUR BATCH PLANT FROM YOUR SMARTPHONE OR TABLET

ZIPPE batch plants are equipped with the newest control systems on the market. Their numerous practical functions mean every system can be specifically tailored to the requirements of our customers. If required, even entire plants can now be monitored and controlled from mobile devices such as tablet PCs with the help of innovative user interfaces.



ROBUST TECHNOLOGY TO SIZE - BATCH CHARGING FOR ALL FURNACE TYPES



Batch charger . model VIBROTUBE®



Batch charger . model ECD



Batch charger . model EVP with pusher

07 . Batch Charging & Glass Level Controlling



Cold-top batch charger .
for electric melting furnaces



Float glass batch charger

WELL-ENGINEERED DOWN TO THE SMALLEST DETAIL

Everything started with the construction of batch chargers for the glass industry. And we are still manufacturing batch chargers to this day. Many years' experience, production quality and ongoing innovations are reflected in many details of our machines.

It makes no difference as to the type of glass or furnace, glass manufacturers all around the globe are praising their reliability and efficient furnace feeding.

EXACT MEASURING, AUTOMATED CONTROL

Highly advanced measurement systems ensure exact and reliable determination of the glass level in the furnace during the melting operation. If the glass level sinks below a specified level, a signal is automatically relayed to the batch charger that then ensures new molten material is fed to the furnace.



Optical glass level controller . model BZ 31

Mechanical glass level controller . model BZ 23



RECYCLING REPLACES
VALUABLE
RAW MATERIALS



SCRAPING CONVEYORS - FACTORY CULLET PROCESSING 24/7

Glass production always generates a certain fraction of glass waste. Scraping conveyors are used to deliver the still hot glass drops or filaments back to production. They are positioned under the moulding machine and guarantee continual hot glass recycling around the clock almost without any deployment of personnel.

Our scraping conveyors are aligned exactly to the requirements of our customers. Their length and design is based on the drop points of the hot glass waste. Nowadays scraping conveyors represent the foundation for automatic factory cullet processing plants.

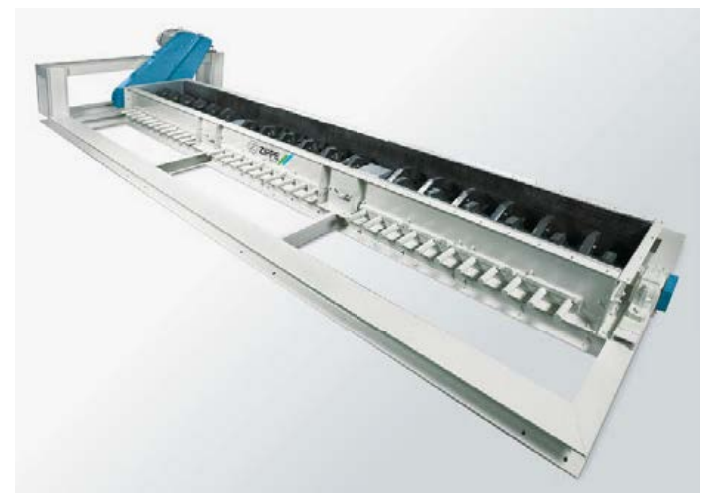
08. Scraping Conveyors & Crushers

CRUSHERS - CRUSHING TO SIZE

We have the right glass crushers for every application – be it [factory cullet](#) or [cullet from outside](#). The cullet can then be melted down again and be returned to the production process. [One single](#) or [several different crusher models manufactured in-house](#) are deployed depending on the type of glass. All feature very [low levels of wear](#) and [minimum maintenance overhead](#). As one of the largest manufacturers in this sector, we have a broad level of experience and know the issues to which attention should be paid.



Float glass crusher



Edge crusher



BRV-type crusher

POST-CONSUMER GLASS RECYCLING

Glass waste collected externally cannot be simply fed back into the production process. Rather, it must be conditioned such that it complies with the purity and particle size regulations of the glass industry. We design, supply and build [complete post-consumer glass processing plants](#), or provide the conveying technology and engineering skills.

Post-consumer glass processing plants normally include conveying, crushing, screening and sorting technologies (e.g. CSP, all-metal, colour sorting).

09. Installation & Commissioning



Our best supervisors working for you



WHEN PLANS TURN INTO REALITY

DEPLOYMENT ACROSS THE WHOLE WORLD

Our supervisors and project engineers are realising projects across the globe. For steel structures and buildings, we work closely with local providers and engineering consultants. Core components are installed on site by our experts who have undergone specialist in-house training. Our customers benefit from their [many years' experience](#) on most diverse construction sites across the globe. In parallel, our software specialists provide support for the control systems providing [smooth interaction](#) between mechanics and electrics.



MODERNISATION - TO ENSURE THAT YOUR PLANT IS ALWAYS KEPT UP TO DATE



Looking to increase the productivity of your plant or reduce costs? [The modernisation of a plant](#) can be a sensible alternative to a new investment.

We highlight in detailed personal discussions all of the issues, such as your infrastructure, economical requirements, the technology to be deployed, deadlines and costs.

Our specialists take a close look at your plant and then propose a concept tailored to your very own needs. Important issues such as operational reliability are also taken into consideration.

Our experience means we are able to leverage strategies that reduce to a minimum the effective downtimes of your plant, or even avoid them altogether.

Our services in all aspects of system modernisation and expansion mean we are able to assist you in optimising your batch plant and to bring it right up to date.

[INCIDENTALLY](#), our specialists also carry out modernisation of systems not bearing the "Made by ZIPPE" label.

FOR TROUBLE-FREE OPERATION



10. Training & Service

TRAINING OF YOUR EMPLOYEES

Nothing can replace first-hand information. This is the reason why we pass on our knowledge and experience to you in intensive training sessions. This is the way to learn how to operate your new system perfectly and so to prevent operator errors.



HIGH LEVELS OF AVAILABILITY AND STANDBY READINESS

Faults must be eliminated in the daily production process. When faults occur however, our service specialists ensure speedy, targeted problem analysis and then immediately take the actions necessary. Customers can use the [ZIPPE 24-hour hotline](#) and our [teleservice](#). This way we are able to guarantee [availability and standby service at all times](#) – across the globe.



CONTINUAL QUALITY IS MANDATORY

We want to offer you, our customers, the best possible quality in all aspects of our business relationship. And to also make this clear in our outward image, we have in use a modern quality management system complying to [DIN EN ISO 9001](#) that is [TÜV CERT](#) certified.



TESTING OF EXISTING SYSTEMS

We also work in parallel with you following the commissioning of your plant. This way problems can be detected before they occur. For this we offer a detailed [ZIPPE Plant Check](#), in which we propose relevant actions and assist you to [optimise your maintenance routines](#). As a result service life of your plant can be prolonged further.

11. Production & Training



ADVANTAGE DUE TO
A SOLID BASIS

TRAINING AT ZIPPE

It is important to us to enable every year new young people to make a start to their careers. We train them to become [precision engineers](#), [electronic engineers](#), [technical product designers](#) and [industrial administrators](#).

They are given excellent support by our training managers and engineers – [many regional and national winners attest to this](#).

IN-HOUSE PRODUCTION



The production area is over 4,000 m² in size and every day sees the manufacture of [batch chargers](#), [scraping conveyors](#), [crushers](#) and other key system components. Most of the [55 production employees](#) have been at ZIPPE for many years and know every bolt and weld seam. This bodes well for the highest levels of quality and reliability.

This is also where our service engineers and supervisors learn their skills for deployment across the globe.



[Training](#) . In our apprenticeship workshops, trainers pass on their expert and practical knowledge to trainees.

The ZIPPE scope of services

- 1 BATCH PLANTS
- 2 CULLET PLANTS
- 3 AUTOMATION
- 4 MODERNIZATION
- 5 ENGINEERING
- 6 FACTORY CULLET RECYCLING
- 7 GLASS RECYCLING
- 8 BATCH CHARGING
- 9 GLASS LEVEL CONTROLLING
- 10 PREHEATING
- 11 MAINTENANCE AND SERVICE

IN THE HEART OF GERMANY

Just 50 minutes from Frankfurt Airport, Wertheim nestles in delightful countryside on the beautiful banks of the Main river, and has a historical old town and proud castle.

We look forward to your visit.



ZIPPE INDUSTRIEANLAGEN GMBH

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