



J-TEC

PLASTIC COMPOUNDING



OUR PEOPLE MAKE THE DIFFERENCE

J-TEC MATERIAL HANDLING

ABOUT J-TEC

WHAT WE DO

J-Tec Material Handling provides material handling and process engineering solutions to leading players in the chemical and food industries all over the world. We design, supply, build and maintain processing systems for powders, pellets and liquids. We deliver single process lines as well as complete turn-key installations.

PERSONAL APPROACH

Our strength lies in the personal approach we bring to every project. We don't offer one-size-fits-all, instead we listen to our customers and use our in-house knowledge, expertise and tools to develop a tailor-made solution for every project.

J-Tec is a partner during the entire process: from the conceptual design, to the detailed engineering, procurement and manufacturing, up to installation and commissioning, and even training and maintenance if required.

NOT SUPPLIER-BOUND

One of the main advantages of working with J-Tec is that we are supplier independent. Every project requires a custom approach. Therefore, vendors are chosen based on the customer's requirements. This way, we can guarantee the best solution for your tailor-made installation.

WOULD YOU LIKE TO STRENGTHEN YOUR MARKET POSITION WITH HIGH-VALUE AND TAILOR-MADE ENGINEERING SOLUTIONS?

J-Tec focuses on niche markets. This helps us to really understand our customers and enables us to provide them with the most optimal solutions and services throughout the entire process.

This strategy has many benefits, such as a higher level of expertise, improved problem solving capacities and a better understanding of our customers' needs.

J-TEC IS PART OF KATOEN NATIE

Katoen Natie develops tailor-made logistic and engineering solutions for its customers' products. The combination of engineering, technology, logistics and semi-industrial activities result in strong concepts each time. J-Tec Material Handling is one of Katoen Natie's independent business units.

TURN-KEY PROJECT ENGINEERING CAPABILITIES

Katoen Natie has the experience and staff to offer you the best complete concepts. In cooperation with the business unit "Supply Chain Engineering", we are able to build entire green field projects.

CHEMICALS

In the exciting world of chemical production and processing, safe and reliable manufacturing is paramount.

Basic requirements include a conceptual design with a healthy OPEX/CAPEX balance, taking various factors into account such as ergonomics, ATEX/NFPA regulations and accurate sizing and the selection of the most suitable components.

J-TEC's extensive knowledge of the industry requirements, product characteristics and material handling solutions is based on over 50 years of collaboration and experience with the chemical industry.





PLASTIC COMPOUNDING

The prime expectation of engineering plastics processing companies is a consistent high quality of customised grades. This requirement dictates the basics of modern design for new compounding plants.

Simple in design but flexible, reliable and highly accurate in performance: these are the key characteristics of J-Tec's Plastic Compounding solutions for engineering plastics such as PP, PA, PC, PPS, SMA, PMMA, etc.

Since we are fully independent of OEM manufacturers, J-Tec can select any brand and any type of key process equipment (e.g. extruder, pelletiser, mixer, feeder, ...) you might prefer, and fully integrate all components into a tailor-made plant control system.

In addition to designing and building the process equipment, J-Tec is a leading global partner for the construction of entire turnkey, greenfield compounding plants.

TECHNOLOGY

Techniques can vary according to industry, product characteristics, and so on. Our customers' product expertise combined with J-Tec's know-how in technology guarantees the leanest and most efficient product handling during every stage of the production process.

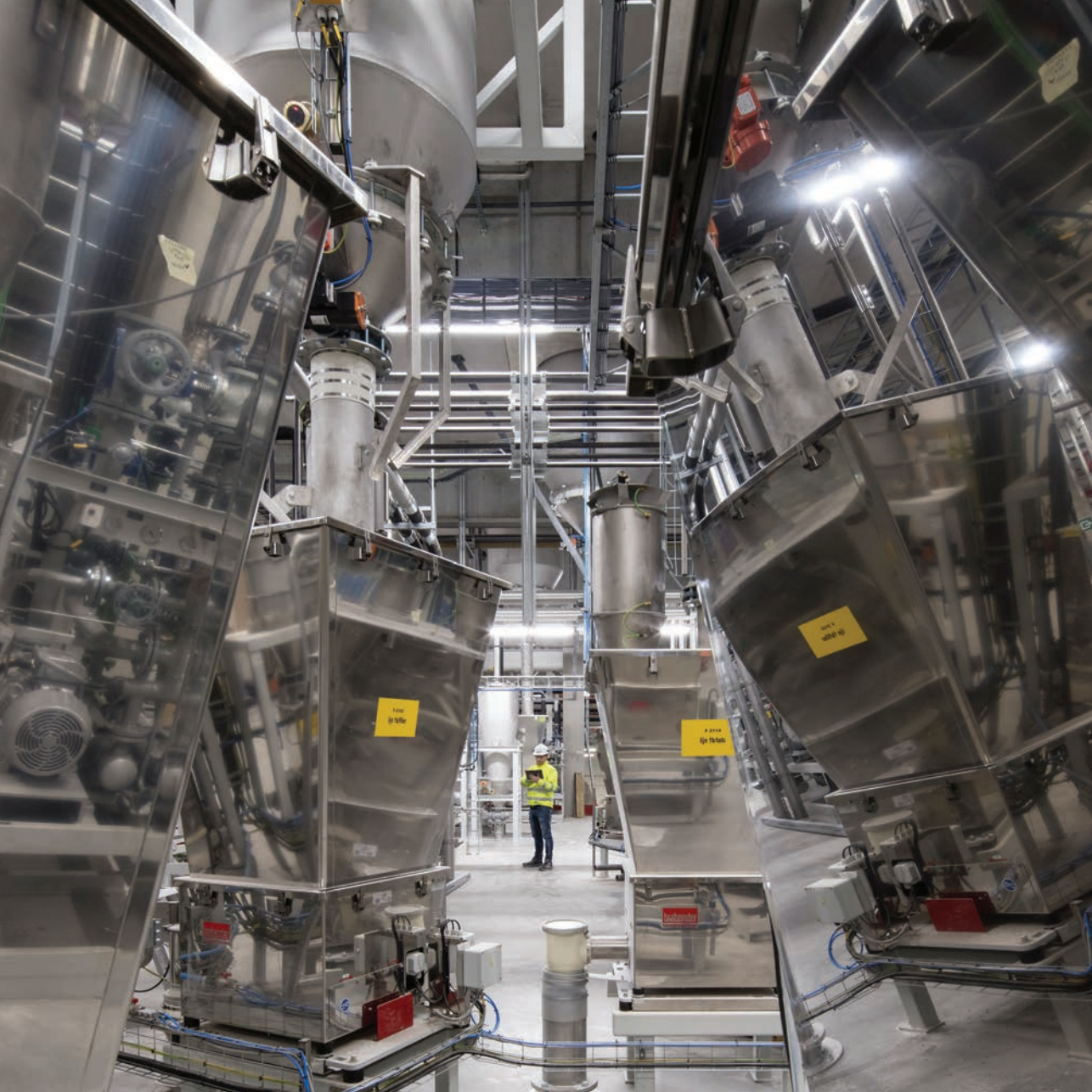
RECEPTION, STORAGE & CONDITIONING

As quality control is crucial for production facilities, we include techniques such as sieving, magnet traps, and metal detection in our validation process by sampling the inbound and outbound products. Product loss is reduced by:

- Optimising the storage solutions (silos, containers, tanks)
- Avoiding product degradation during storage by controlling the atmospheric conditions around the product (drying, heating, cooling)
- Defining the optimal extraction system

Furthermore, J-Tec develops devices for filling bags, (F)IBC, octabins and bulk trucks with a high capacity and minimum of dust and waste creation.





RAW MATERIAL HANDLING

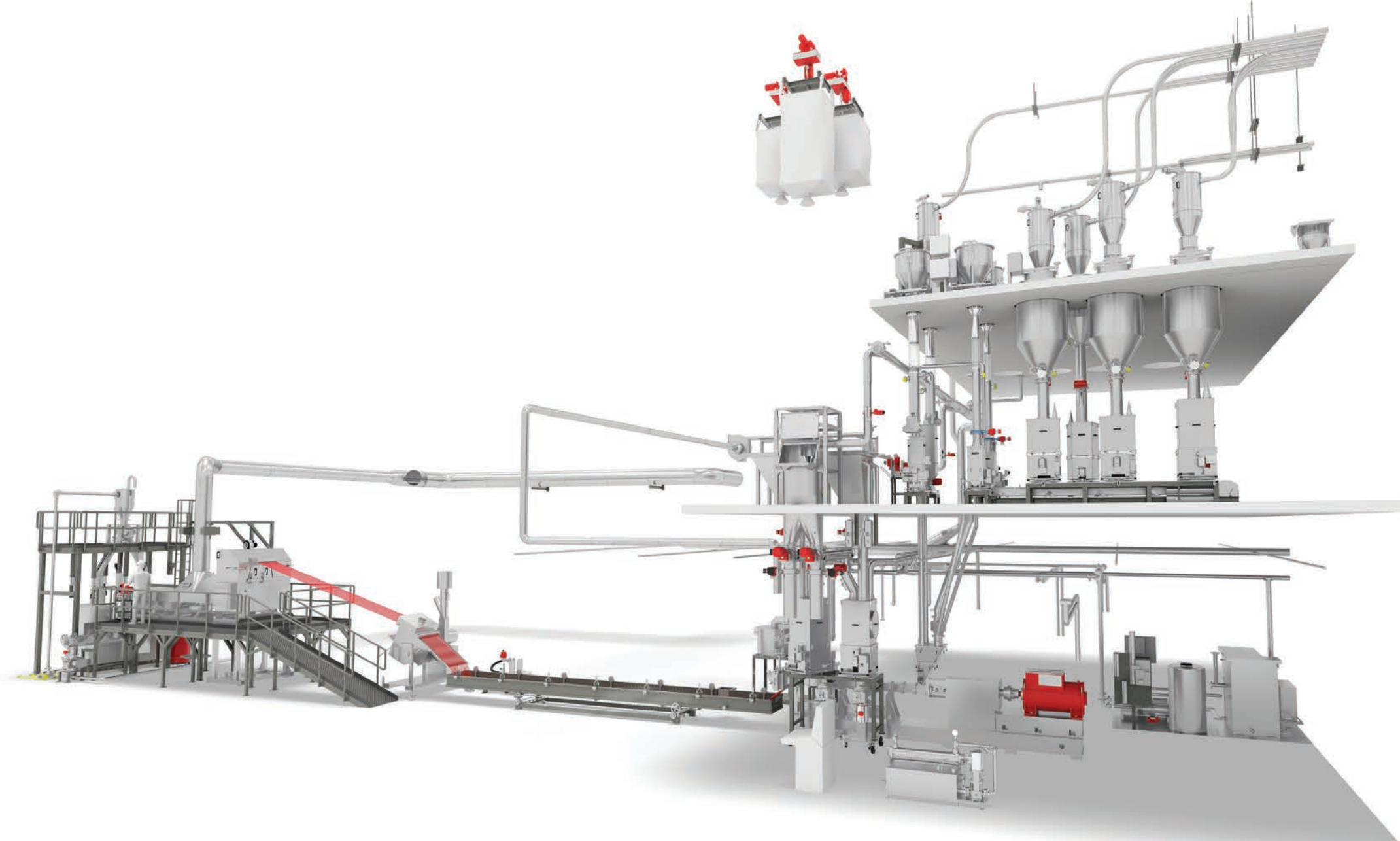
Inherent to plastic compounding is the versatility of raw materials like virgin PO, recycled compounds, masterbatches, liquids, additives, fillers, and many others. Depending on your needs, these can be stored in silos before being conveyed to the line, or they can be stored and transported in big bags, small bags, drums, octabins and more.

Regardless of your preferred option, intermediate products need to be transported or discharged with minimum degradation. J-Tec has a vast experience in common solutions such as pneumatic transports for solids, pumps for liquids and mechanical transports (screws, vibratory trays, conveyor belts, AGVs, etc).

FEEDING

To maintain the optimal end-product, proper feeding of raw materials to the extruders and mixers is key.

With a lot of experience and a wide array of references, we are able to select the best dosing equipment for your process. By implementing gravimetric or volumetric for continuous and batch systems, a constant process flow and consistent recipe is ensured.





EXTRUDING & PELLETISING

Whenever we're talking about compounding installations, an extrusion process is key. In order to obtain your preferred plastic compounds, one or more additives will have to be mixed with several polymers.

After you've gained the required plastic compound, a pelletiser will shape your materials into pellets. Depending on your process needs, a lot of different applications are possible.

J-Tec has a lot of experience with installing extruders and pelletisers into process installations. With an impressive reference list and over 50 years of building expertise and know-how, we're able to implement this important process step in such a way that your production and product needs will be assured.

As a supplier independent system integrator, we can integrate your preferred brand or technology on a mechanical, electrical and automation level, resulting in a custom-made installation, perfectly tailored to your specific requirements.

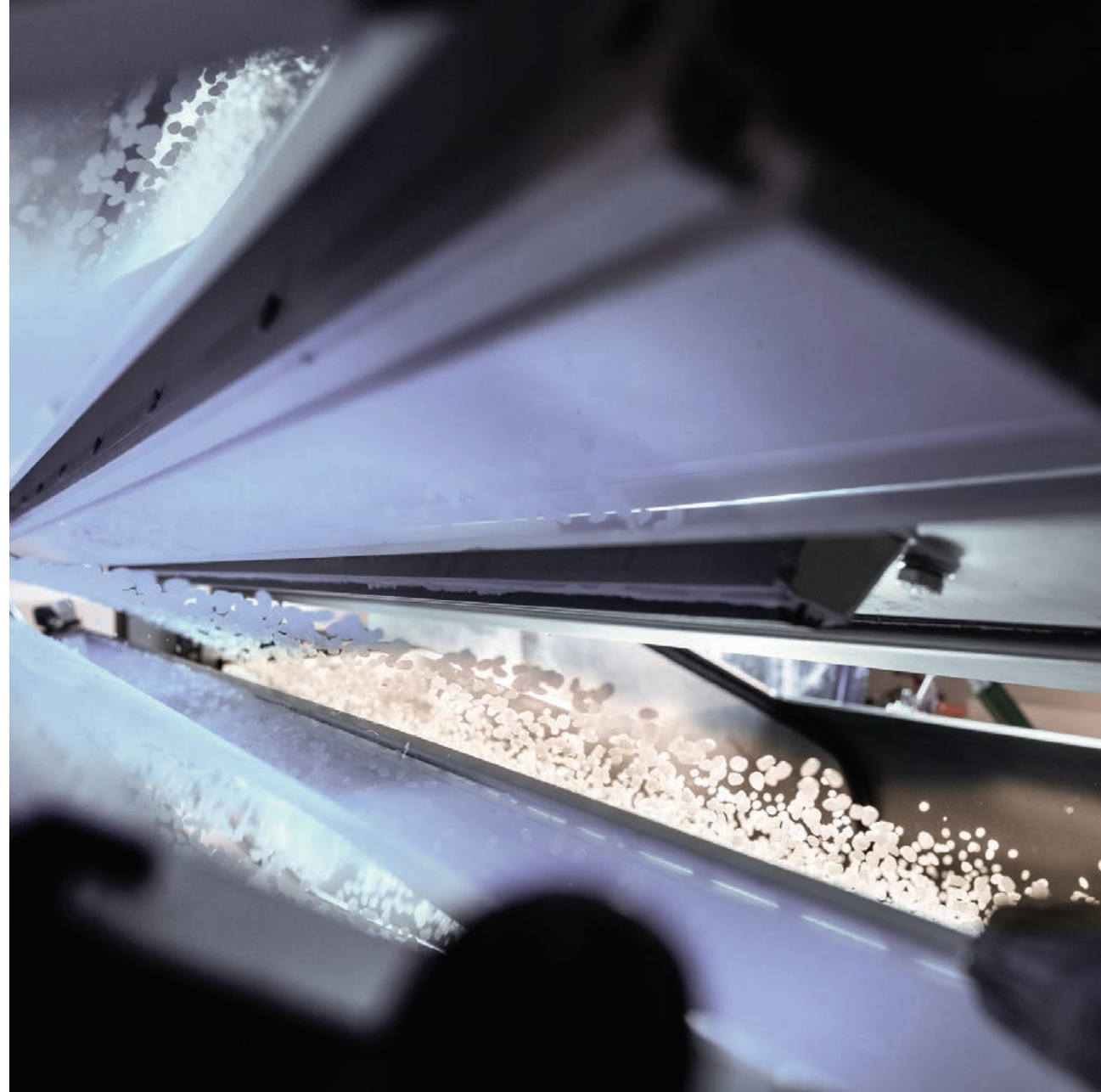
FINISHED PRODUCT HANDLING & QUALITY CONTROL

When your product is finished and ready for sale, distribution, or for your own use, intermediate storage always comes in handy! We will make sure to design and build a suitable conveying system depending on the specific properties of your product (e.g. glass-filled, fragile, sensitive to degradation, and so on).

In order to avoid issues when used in down-stream plastic industry, a wide array of quality control technologies can be used.

To assure clean pellets, dedusting equipment can be installed underneath your intermediate silos. These installations will first neutralise the static charge of your pellets and secondly blow air into the pellet flow, extracting all dust into a filter.

For more sensitive applications, metals (both ferrous and non-ferrous) have to be excluded from your product. In this case, advanced metal detectors are used to detect and reject contaminants rapidly and accurately. Typically, the product is screened for metal particles above a maximum size. A detector drives a valve that momentarily diverts the process flow with the metal particles.





CONTROL SYSTEM

Important logistic decisions are based on the process control system: timely ordering of raw materials, tracing of a certain batch, and so on. Our team of engineers can provide complete solutions from concept through execution to start-up.

From the electrical engineering to the actual automation of your new compounding plant, our in-house engineers will design the hardware, write the different software packages and set-up an appropriate control system architecture. Throughout the years we have built up extensive knowledge of specific compounding equipment (e.g. extruders, pelletisers, etc.), which enables us to integrate them into one central control system.

Minor deviations in the composition of your end product can lead to significant consequences. Therefore, J-Tec often implements high-tech tracking and tracing technologies in order to assure a consistent product. With the use of RFIDs, barcodes, scanners, etc. we are able to track and trace every component used in mixtures and ensure high quality end products.

Changes in your process set-up? As all of our control systems are open source, we make it possible for our customers to adapt the coding after the installation is up and running.

INSTALLING

An installation has to be built exactly according to plan. J-Tec has Lloyd's SHE (Safety, Health & Environment) certification, which guarantees the highest level of quality and safety.

We also meet the requirements of the Safety Checklist for Contractors (SCC), ISO 9001 and ISO 45001 in order to support the business in working effectively, efficiently and safely. Our SCC certificate has registration number 650830.

COMMISSIONING & START-UP

Over the years, our commissioning engineers have built up an extensive hands-on knowledge of different types and brands of all your key-equipment. We commission the compounder and test on performance according to the initial base of design before handing over the installation.

We will make sure the equipment is commissioned correctly within the scheduled time and provide specialised trainings where needed. Furthermore, we prepare the installation and process optimisations for our clients.





TURNKEY GREENFIELD PROJECT EXECUTIONS

DESIGN & BUILD PLANT LAYOUT

Our specialised in-house design department has all the necessary skills and facilities to design and build entire process plants. In cooperation with the Katoen Natie business unit 'Supply Chain Engineering', we are able to build entire green field projects.

J-TEC TEST LAB

J-Tec's test facilities offer a multitude of research possibilities for your products. The main goal of these facilities is to offer you the opportunity to simulate real-life situations in order to ensure new installations and processes will function as planned.

Our R&D facilities, located at our headquarters in Kapellen, Belgium, are at your disposal in order to find the most appropriate solutions for your requirements. We make sure that your product is handled in the best way possible and that your investment will pay off!





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