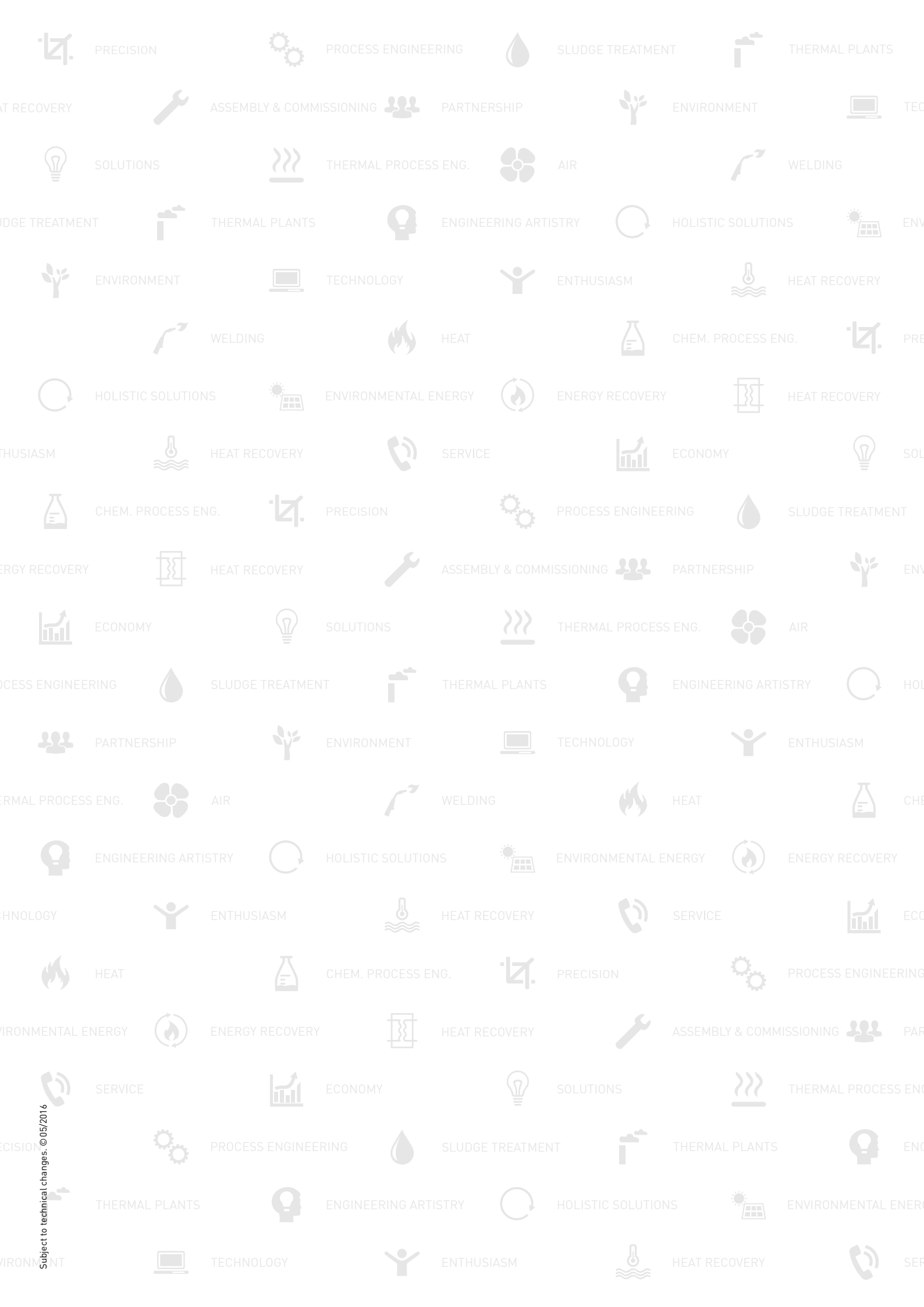




SÜLZLE KLEIN

Mechanical and
thermal sludge
treatment







SUPERIOR TECHNOLOGIES

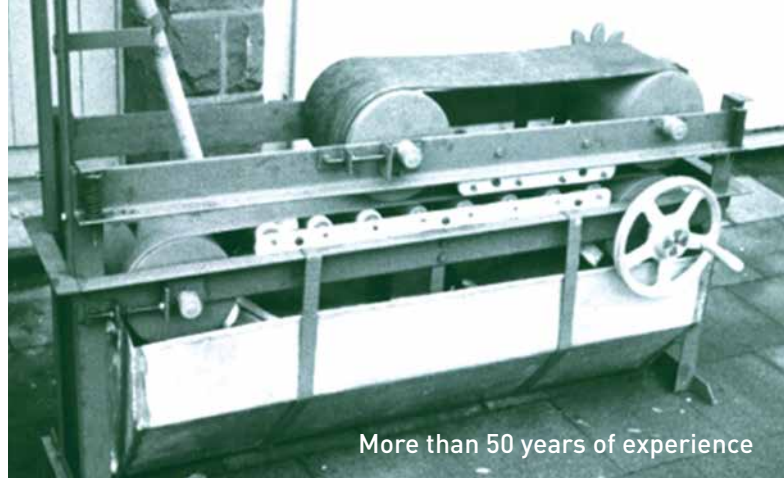
SOLUTIONS FOR ECONOMICAL SLUDGE TREATMENT

Modern sludge treatment pays off!
By developing the Belt Filter Press in 1966, the Gravity Belt Thickener in 1982 and the first Belt Dryer in 1988, we have shown ourselves to be pioneers in sludge treatment.

We have developed four different types of dryers within the last ten years alone. Since 2014, we manufacture highly efficient Screw Presses.



Holistic solutions



More than 50 years of experience



Proven systems



Continuous development

With over 50 years of experience and our highly skilled engineering team, we offer you energy efficient and reliable holistic solutions for your sludge treatment processes.

Why not benefit from the innovative power of this mid-sized German company – SÜLZLE KLEIN.

POLYMER PREPARATION SYSTEM

FOR PREPARATION OF SOLID AND LIQUID PFM

POLYMER FLOCCULANT

- TECHNICAL STANDARD**
- Standalone “plug & floc” system
 - Stainless steel mixing and dosing tanks in a space-saving rectangular design
 - Spray- and aerosol-proof design
 - Reliable measurement and overflow protection
 - Energy-efficient agitators, polymer concentrate and dosing pumps
 - Fully assembled, with pipe network and wiring to the junction box
 - Function and leak-tested at the factory

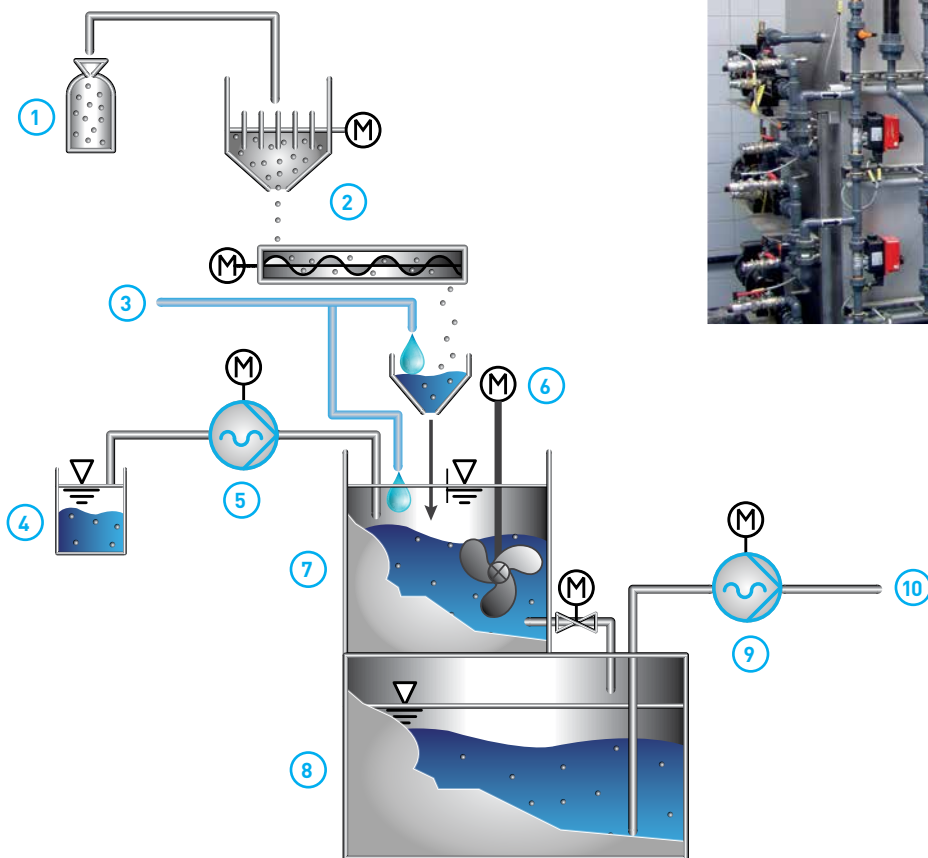
- SPECIAL FEATURES**
- Stainless steel collecting basin
 - Inductive flow meter
 - CE-compliant control unit

- ECONOMIC EFFICIENCY FOR YOUR PLANT**
- Intelligent mixing reduces your polymer consumption
 - Energy-efficient drives reduce your power consumption
 - Simple to operate with minimal effort
 - Our high-quality components offer long service life and minimal maintenance costs

OUR TIP:

Choose your preferred modular polymer system:

- solidXfloc G_{ravity} two-storey system
- solidXfloc S_{witch} pendulum system
- solidXfloc T_{ransfer} transfilling system



- ① Powder Polymer
- ② Powder dosing
- ③ Water
- ④ Liquid Polymer
- ⑤ Polymer pump
- ⑥ High performance agitator
- ⑦ Mixing tank
- ⑧ Dosing tank
- ⑨ Polymer dosing pump
- ⑩ Polymer stock solution



Dewatering with SÜZLE KLEIN
Scan QR-Code and watch the video.

GRAVITY BELT THICKENER

FOR MECHANICAL THICKENING OF SEWAGE AND WASTEWATER SLUDGES

TECHNICAL STANDARD

- Robust stainless steel unit in a space-saving design
- State-of-the-art belt filters for high filtration performance and optimal cleaning properties
- Self-cleaning and clog-free baffle plates
- Continuously adjustable discharge weir for custom adjustment of DS-outlet
- Separation of clear filtrate and belt wash water
- Fully assembled, with wiring to the junction box
- Function tested at the factory

SPECIAL FEATURES

- Fully enclosed machine to protect against contact and aerosol emission
- Automated belt-cleaning system
- CE-compliant control unit

ECONOMIC EFFICIENCY FOR YOUR PLANT

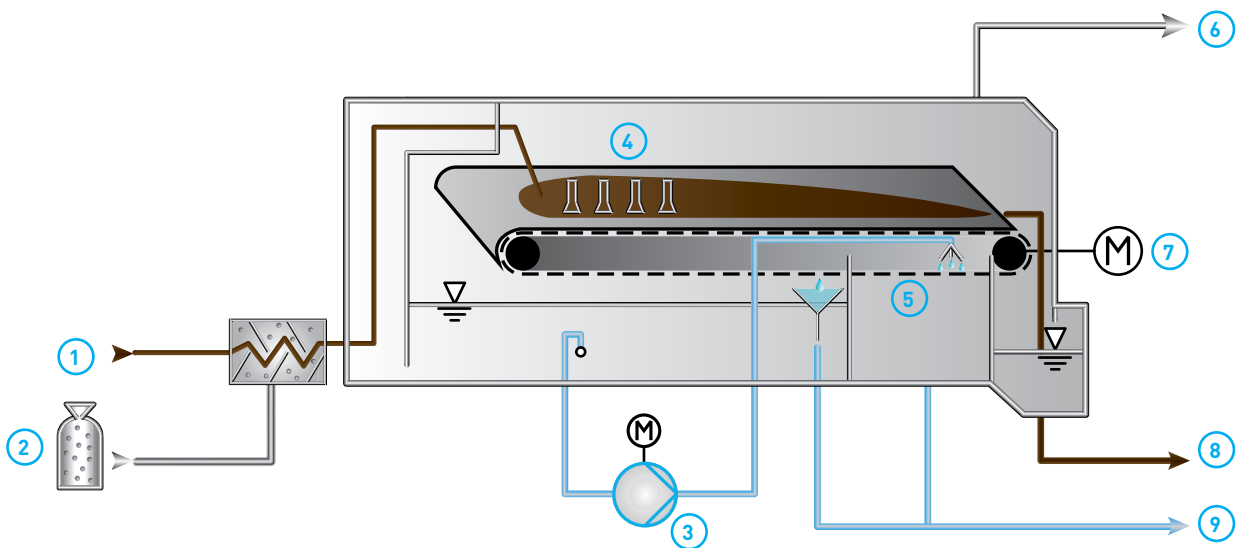
- Energy-efficient drives to reduce electric demand
- Our custom-built spray nozzles reduce wash water consumption
- Minimal operating expenses through reliable design
- Our high-quality components give long service life with low wear parts costs

OUR TIP:

Try out the solidXdrain on site with our mobile unit



- ① Sludge
- ② Polymer
- ③ Wash water pump
- ④ Baffle plates
- ⑤ Belt washing system
- ⑥ Extraction
- ⑦ Belt drive
- ⑧ Thickened sludge
- ⑨ Filtrate



SCREW PRESS

FOR MECHANICAL DEWATERING OF SEWAGE AND WASTEWATER SLUDGES

TECHNICAL STANDARD

- Horizontally and vertically divided screen baskets
- Separate transfer of clear and contaminated filtrates
- Integrated flocculation reactor
- Open design for easy and minimal operator effort
- Fully enclosed to protect against contact and aerosol emission
- Low lying design for easy operation
- Function tested at the factory

SPECIAL FEATURES

- Continuous dewatering during filter basket cleaning
- Filtrate recirculation to increase separation performance
- CE-compliant control unit

ECONOMIC EFFICIENCY FOR YOUR PLANT

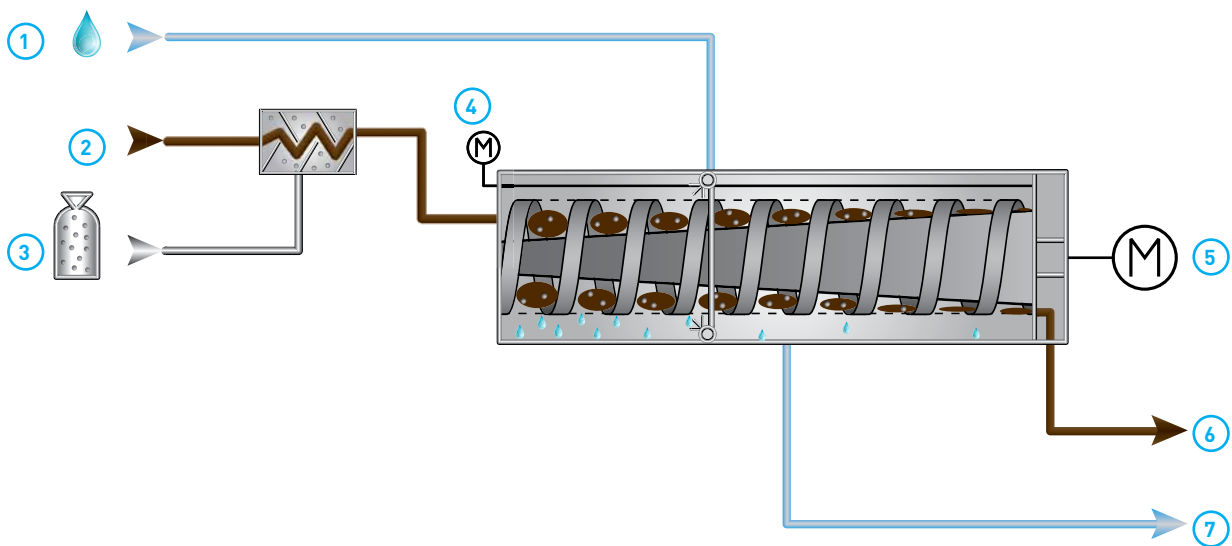
- Low specific power consumption
- Independent washing system for consistently high dewatering performance
- Integrated flocculation reactor to reduce polymer consumption

OUR TIP:

- Enhance separation performance by recirculating the contaminated filtrate
- Try out the solidXpress on site with our mobile unit



- ① Water
- ② Sludge
- ③ Polymer
- ④ Wash water drive
- ⑤ Screw drive
- ⑥ Dewatered sludge
- ⑦ Filtrate



BELT FILTER PRESS

FOR MECHANICAL DEWATERING OF SEWAGE AND WASTEWATER SLUDGES

TECHNICAL STANDARD

- Durable and torsion-resistant machine frame in a space-saving design
- Open design for easy and minimal operator effort
- Fully enclosed to protect against interference and aerosol discharge
- State-of-the-art belt filters for high filtration performance and optimal cleaning properties
- Cascaded pressure zones to increase the dewatering pressure
- Fully assembled, with wiring to the junction box
- Function tested at the factory

SPECIAL FEATURES

- Support structure with integrated filtrate collecting basin for foundationless installation
- Built and developed in Niederfischbach since 1966
- CE-compliant control unit

ECONOMIC EFFICIENCY FOR YOUR PLANT

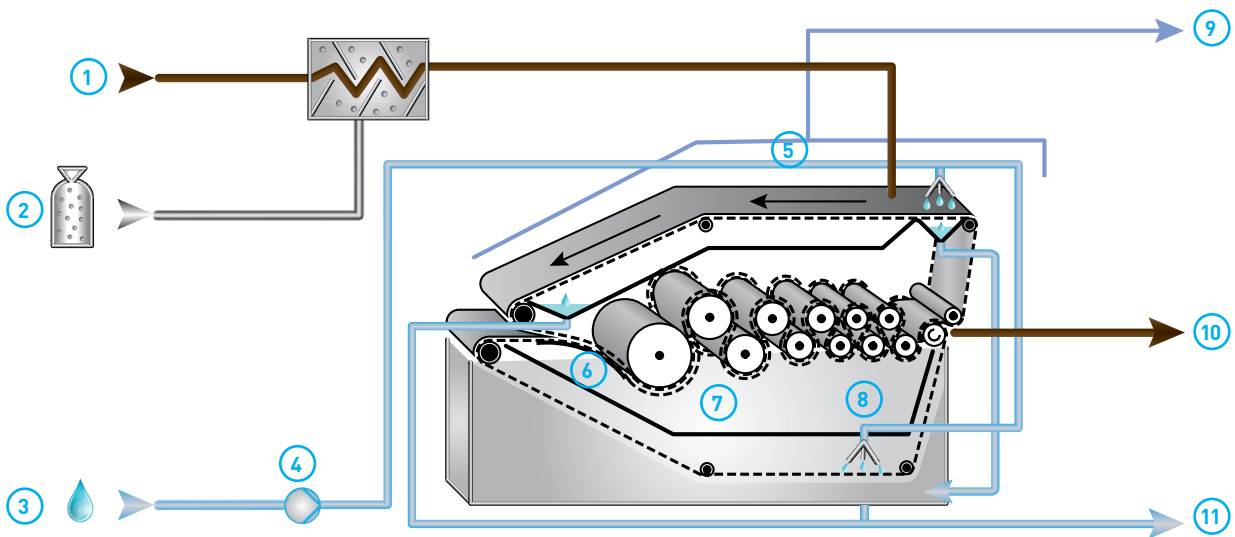
- Energy-efficient drives to reduce electric demand
- Max. number of high-pressure rollers for superior dewatering performance
- Our custom-built spray nozzles reduce wash water consumption
- Our high-quality components give long service life with low wear parts costs

OUR TIP:

Our engineers will devote their considerable experience to the most suitable and economic system design for your process



- ① Sludge
- ② Polymer
- ③ Water
- ④ Wash water pump
- ⑤ Pre-dewatering zone
- ⑥ Pre-press zone
- ⑦ Low pressure press-zone
- ⑧ High pressure press-zone
- ⑨ Extraction
- ⑩ Dewatered sludge
- ⑪ Filtrate



COMBINATIONS & VARIATIONS

**TWO-STOREY
BELT THICKENER**
solidXdrain²
SOLIDXDRAIN

- For thickening large amounts of sewage and wastewater sludge
- A unit with two Belt Thickeners in two-storey design
- Small system footprint with highly specific throughputs
- Low investment and operating costs

**MOBILE
BELT THICKENER**
solidXdrain
SOLIDXDRAIN

- For thickening tests, or to replace existing equipment during maintenance and reconstruction work
- Compact mobile unit, polymer preparation and Belt Thickener included
- Rapid deployment

**COMBINATION
BELT FILTER PRESS**
solidXklein-C
SOLIDXKLEIN

- For dewatering large amounts of thin sewage and wastewater sludge
- Expands the Belt Filter Press with an additional pre-dewatering zone
- Small system footprint with highly specific throughputs
- Low investment and operating costs

**MOBILE
SCREW PRESS**
solidXpress
SOLIDXPRESS

- For dewatering tests, or to replace existing equipment during maintenance and reconstruction work
- Compact mobile unit, polymer preparation and control unit included
- Fully equipped with a testing lab
- Rapid deployment

OUR TIP:

- Combine our thickening and dewatering equipment with a suitable polymer system and control unit for an economical overall operation
- Suitable for contract dewatering



Top: solidXklein-C combination Belt Filter Press
Right: solidXdrain² two-storey Gravity Belt Thickener



BELT DRYER & Compact-Dry

FOR DRYING DEWATERED SEWAGE SLUDGES

TECHNICAL STANDARD

- Modular designed drying system to combine drying area and required throughput
- Optimized air-flow system for uniform drying
- Corrosion-resistant materials
- Durable custom belts with optimal air permeability
- Reliable measurement and control technology
- Fully automated system control and process visualization
- Feeding systems tailored to a range of sludge quality
- Negative pressure control to prevent odor emissions
- No explosion or fire hazards (Ex zone free)

SPECIAL FEATURES

- ATEX compliant through integrated safety design
- Use with a variety of heat sources and temperatures
- Direct and/or indirect heating
- Air treatment acc. to local exhaust air regulations
- Heat recovery from exhaust air
- Product cooling at the discharge point
- Dryness sensor at the discharge point
- Belt and collecting basin cleaning are automated
- Back-mixing system for drying poorly dewaterable sludges
- Product crusher for increasing bulk density and improving feedability

ECONOMIC EFFICIENCY FOR YOUR PLANT

- Energy-efficient heat recovery means low specific thermal energy demand
- Hygienized final product
- Designed for fully automatic and unsupervised operation
- User friendly, with low maintenance
- Possible capture and reuse of waste heat
- Our high-quality components give long service life with low spare parts costs
- Optimal accessibility for inspection and maintenance
- Proven feeding system ensures uniform and efficient drying

OUR TIP:

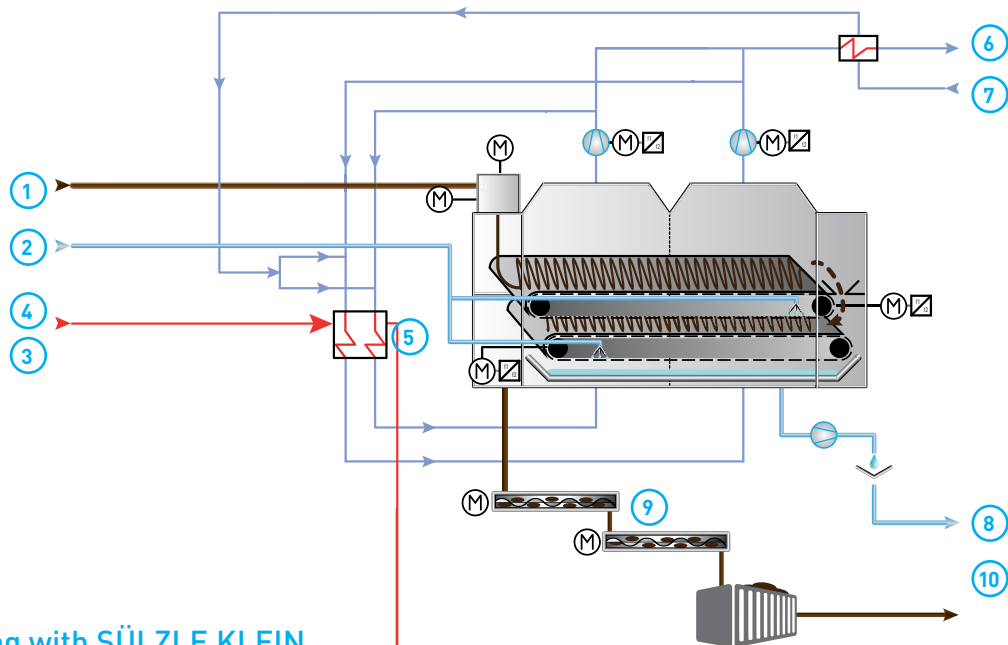
- Take advantage of real-time image transmission via webcam with extra lighting
- Pre-installed system for lower water evaporation capacity (Compact-Dry)



Top: Belt Dryer Pro-Dry® | Right: Belt Dryer Compact-Dry



- ① Dewatered sludge
- ② Wash water
- ③ Waste heat, flow
- ④ Waste heat, return flow
- ⑤ Heat exchanger
- ⑥ Exhaust air
- ⑦ Fresh air
- ⑧ Waste water
- ⑨ Granulate loading
- ⑩ Dried granulate for disposal or thermal recycling



Drying with SÜLZLE KLEIN
Scan QR-Code and watch the video.

BELT DRYER Conti-Dry

FOR DRYING DEWATERED ORGANIC RESIDUES

TECHNICAL STANDARD

- Modular designed drying system to combine drying area and required throughput
- Optimized air-flow system for uniform drying of very light fractions
- Corrosion-resistant design
- Durable custom belts with optimal air permeability
- Reliable measurement and control technology
- Fully automated system control and process visualization
- Proven custom feeding systems provide uniform and efficient drying for a range of materials
- Negative pressure control to prevent odor emissions
- No explosion or fire hazards (Ex zone free)
- Indirect heating for waste heat utilization
- Pre-installed system

SPECIAL FEATURES

- Dryness sensor at the discharge point (optional)
- Integrated safety design
- ATEX compliant
- Usable over a range of temperatures
- Optional partial remixing to improve the material structure
- Air treatment acc. to local exhaust air regulations
- Heat recovery from exhaust air

ECONOMIC EFFICIENCY FOR YOUR PLANT

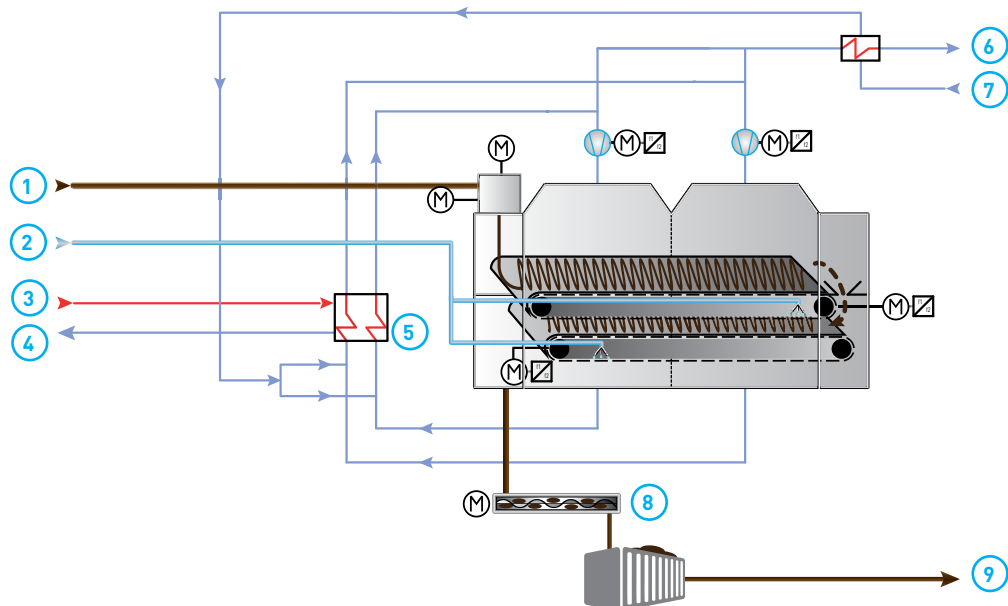
- Energy-efficient heat recovery means low specific thermal energy demand
- Designed for fully automatic and unsupervised operation
- User friendly, with low maintenance
- Waste heat utilization
- Our high-quality components give long service life with low spare parts costs
- Optimal accessibility for inspection and maintenance
- Hygienized final product
- Minimal assembly work means simple structural requirements

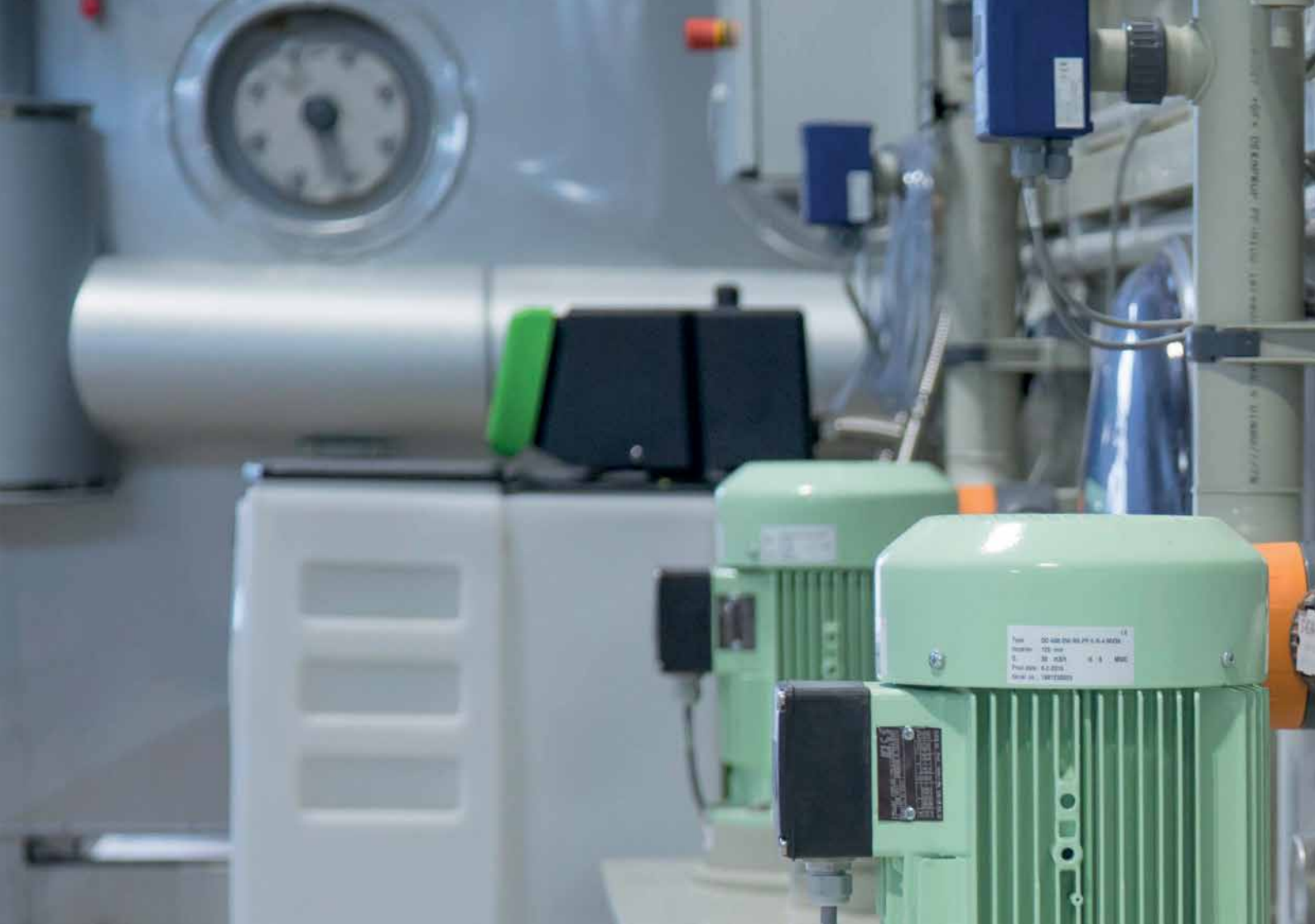
OUR TIP:

The unique design of the Conti-Dry is especially suited for uniform drying of very light fractions



- ① Dewatered sludge
- ② Wash water
- ③ Waste heat, flow
- ④ Waste heat, return flow
- ⑤ Heat exchanger
- ⑥ Exhaust air
- ⑦ Fresh air
- ⑧ Granulate loading
- ⑨ Dried granulate for disposal or thermal recycling





TECHNICAL DATA*

POLYMER PREPARATION SYSTEM solidXfloc

Dosing capacity	0.5 – 15kg-working substance/h
Dosing concentration	0.05 – 1.0%
Remarks	Suitable for powder and/or liquid polymer flocculants

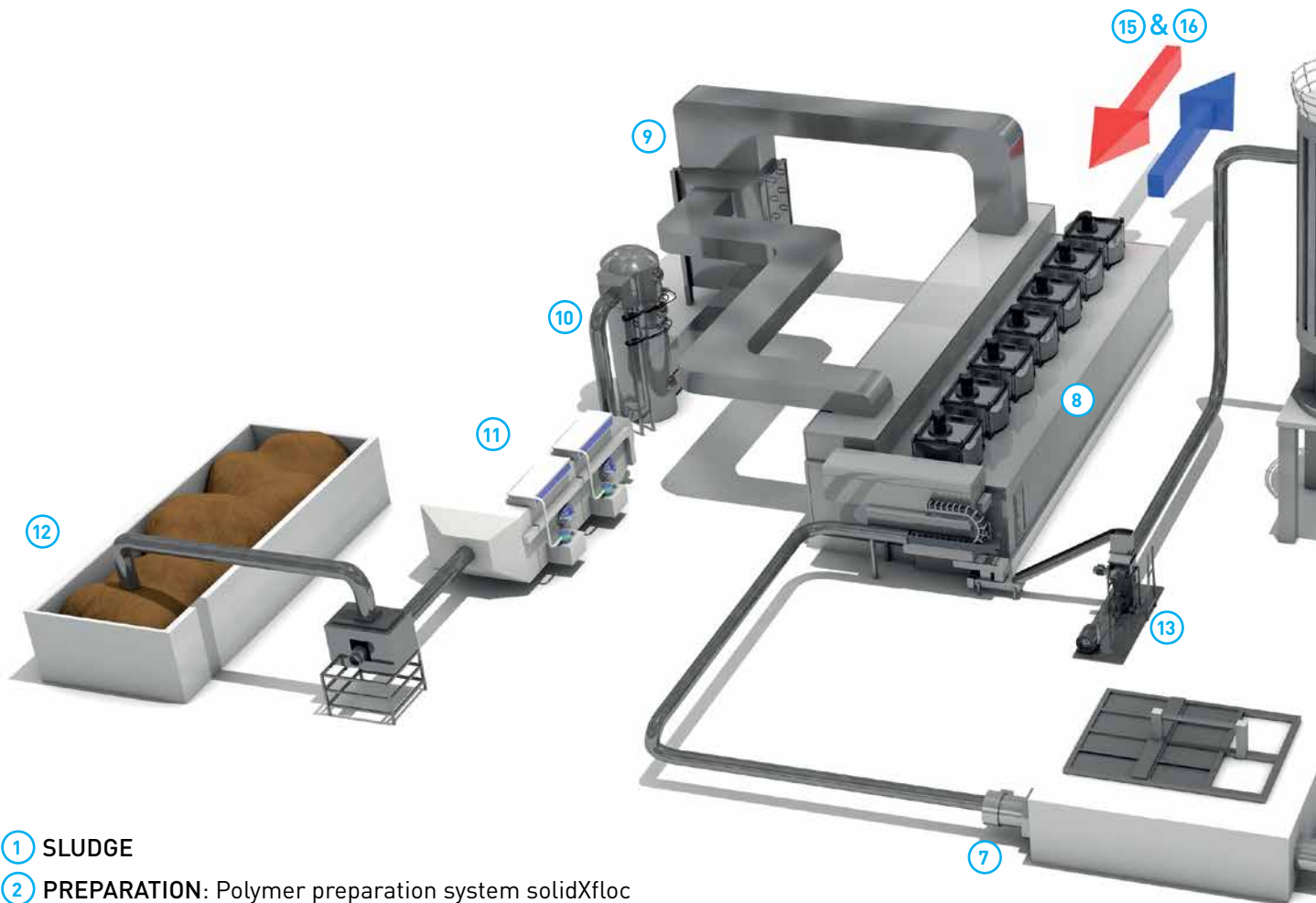
	BELT THICKENER solidXdrain	SCREW PRESS solidXpress®	BELT FILTER PRESS solidXklein
Throughput	5 – 150 m ³ /h	2 – 15 m ³ /h	5 – 100 m ³ /h
Typical inlet DS-concentration	0.5 – 2%	0.5 – 5%	0.5 – 5%
Typical outlet DS-concentration	5 – 8%	20 – 30%	20 – 30%



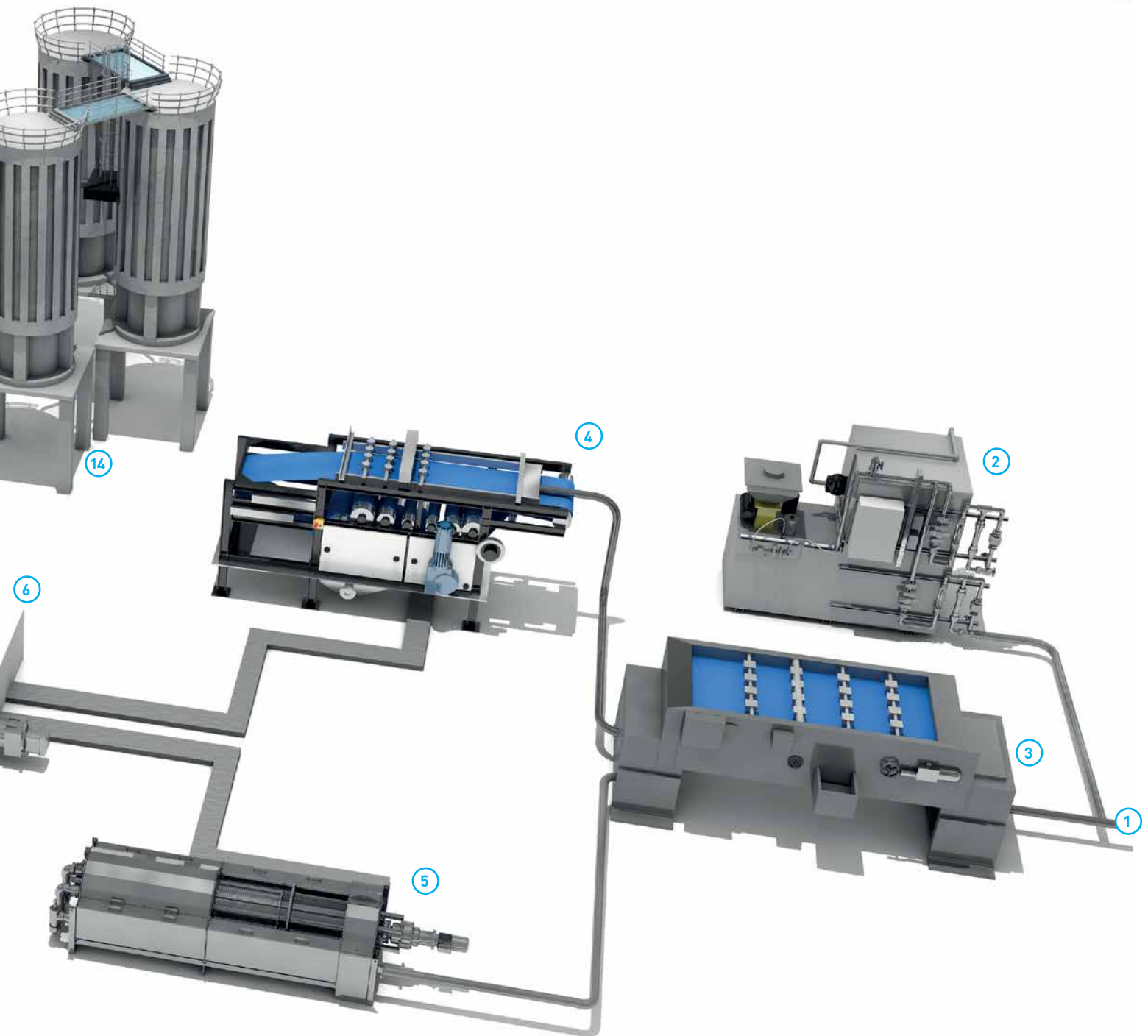
	BELT DRYER Compact-Dry	BELT DRYER Pro-Dry®	BELT DRYER Conti-Dry
Water evaporation capacity	150 – 700 kg/h	500 – 4,000 kg/h	500 – 3,000 kg/h
Typical inlet DS-concentration	15 – 35 %	15 – 35 %	15 – 60 %
Typical outlet DS-concentration	min. 90 %	min. 90 %	min. 90 %
Thermal energy demand	max. 850 kW/t H ₂ O	max. 850 kW/t H ₂ O	max. 850 kW/t H ₂ O
Electrical energy demand	approx. 70 kW/t H ₂ O	70 - 100 kW/t H ₂ O	70 - 100 kW/t H ₂ O

*depending on the particular sludge and material properties, and also on the overall process engineering.

SOLUTIONS BY SÜLZLE KLEIN



- ① SLUDGE
- ② PREPARATION: Polymer preparation system solidXfloc
- ③ THICKENING: Gravity Belt Thickener solidXdrain
- ④ DEWATERING: Belt Filter Press solidXklein
- ⑤ DEWATERING: Screw Press solidXpress
- ⑥ SLUDGE STORAGE: Bunker with discharge system
- ⑦ FEEDING: Feed Pump / Distributor
- ⑧ DRYING: Belt Dryer Pro-Dry® / Compact-Dry / Conti-Dry
- ⑨ PROCESS HEAT RECOVERY
- ⑩ EXHAUST AIR TREATMENT: Condensation
- ⑪ EXHAUST AIR TREATMENT: Acid scrubber / Basic scrubber / Oxidation
- ⑫ EXHAUST AIR TREATMENT: Biofilter
- ⑬ CONVEYING EQUIPMENT:
Pneumatic conveying system / Tube chain conveyor / Screw conveyor / Bucket conveyor / Belt conveyor
- ⑭ DRY SLUDGE STORAGE: Silo / Container / BigBag
- ⑮ NATURAL ENERGY SOURCE: Natural gas / Heating oil / Biogas / Pellets
- ⑯ HEAT TRANSFER MEDIUM: Steam / Hot water / Warm water / Waste heat / Flue gas



SÜZLE

überzeugt.

STEEL ENERGY IDEAS

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