SIMATEC

CHAMBER FILTER PRESSES

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Solids are separated from liquids using chamber filter presses. The separated liquids and solids can then be reused or disposed of in the proper way. They have a wide variety of uses. For example, chamber filter presses can be found in the natural stone industry, tunnel construction, mining, the concrete industry and the asphalt industry. They are also used for disposing of drilling sludge and for decontaminating contaminated soil. Simatec also delivers filter chamber presses to chemical industries and municipal sewage treatment plants.

Simatec plans each individual chamber filter press for the intended application. The design, the mechanisms, the sensors and the automation are planned individually for the respective application. The company falls back on solutions which have been tried out and proven for many years when doing this.

Thanks to the considerable know-how and the relevant engineering that is involved, the operator of the Simatec chamber filter presses benefits from their outstanding availability and extreme robustness.

Simatec chamber filter presses have many other advantages: Thanks to the optimum process design and the correct dimensioning of all system components, the amount of work required during the use and maintenance of the chamber filter press is reduced considerably. Simatec chamber filter presses also achieve the optimum degree of separation of the solid phase and the liquid phase. They are energy efficient during operation, and only cause a small amount of pollution because few additives or chemical additives are used.

Chamber filter press

FULLY AUTOMATIC OPERATION

FILTER PLATE DIMENSIONS: 500 MM TO 2 000 MM

THE ADVANTAGES

Large sludge quantities

Simatec chamber filter presses allow you to process large quantities of sludge. With our biggest series, the “High Beam” chamber filter press, payload capacities of up to 18.5 m^3 are possible thanks to its plate size of 2000 × 2000 mm.

Efficient drying

In comparison to other filter technologies, a high degree of solid content is achieved in the filter cake with Simatec chamber filter presses thanks to having optimal hydrostatic dewatering pressure.

Energy-efficient use

The careful design and the process-technological correct dimensioning of the Simatec chamber filter presses results in a reduction in electrical energy during every pressing. The combination of the pump technology which has been designed and selected by means of testing in our own laboratory and the relevant automation results in efficient energy consumption.

Low environmental impact

Efficient separation of the solid phase and the liquid phase also means that careful use is always made of resources. Regardless of whether your reusable material occurs in the filtrate or the filter cake, or even both.

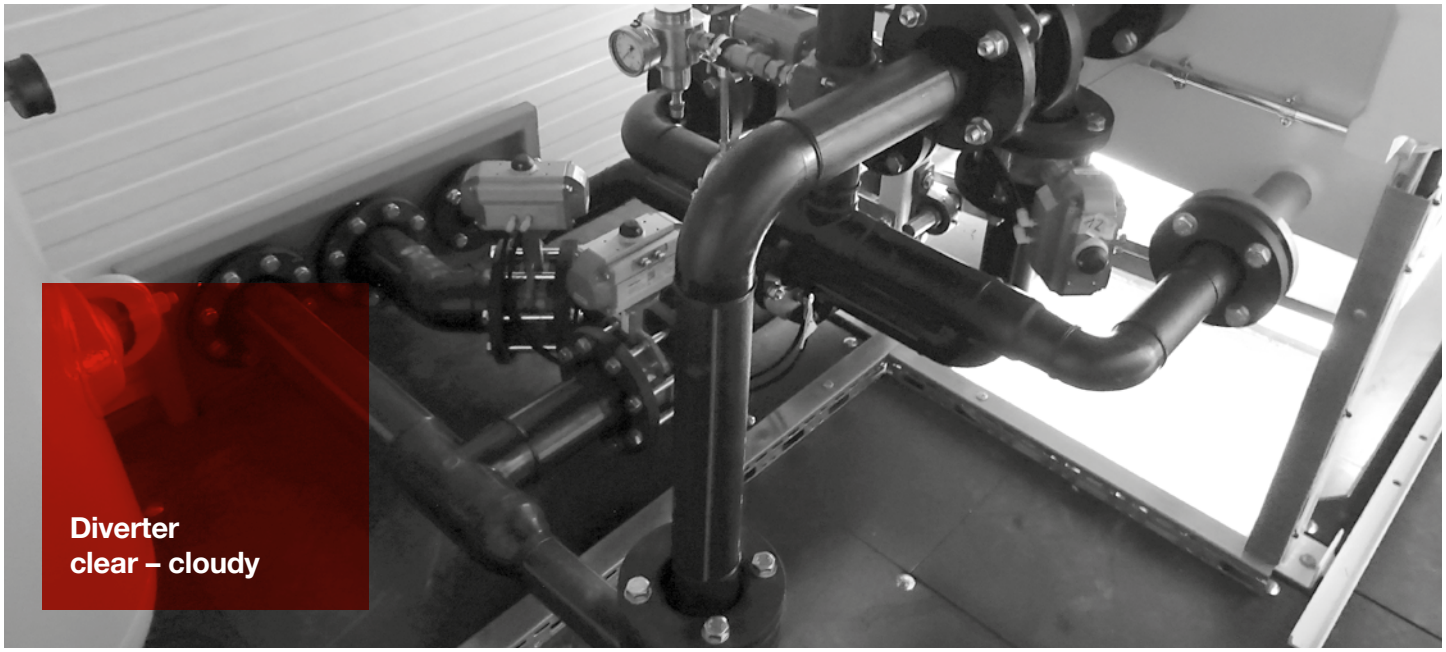
Minimal maintenance

Thanks to its optimum concept, the amount of work required during the use and maintenance of the Simatec chamber filter press is reduced considerably. The cost of maintenance work and spare parts remains within manageable limits.

CHAMBER THICKNESSES
OF 15 MM TO 60 MM

HYDROSTATIC DEWATERING
PRESSURE
UP TO 16 BAR

Washing robot



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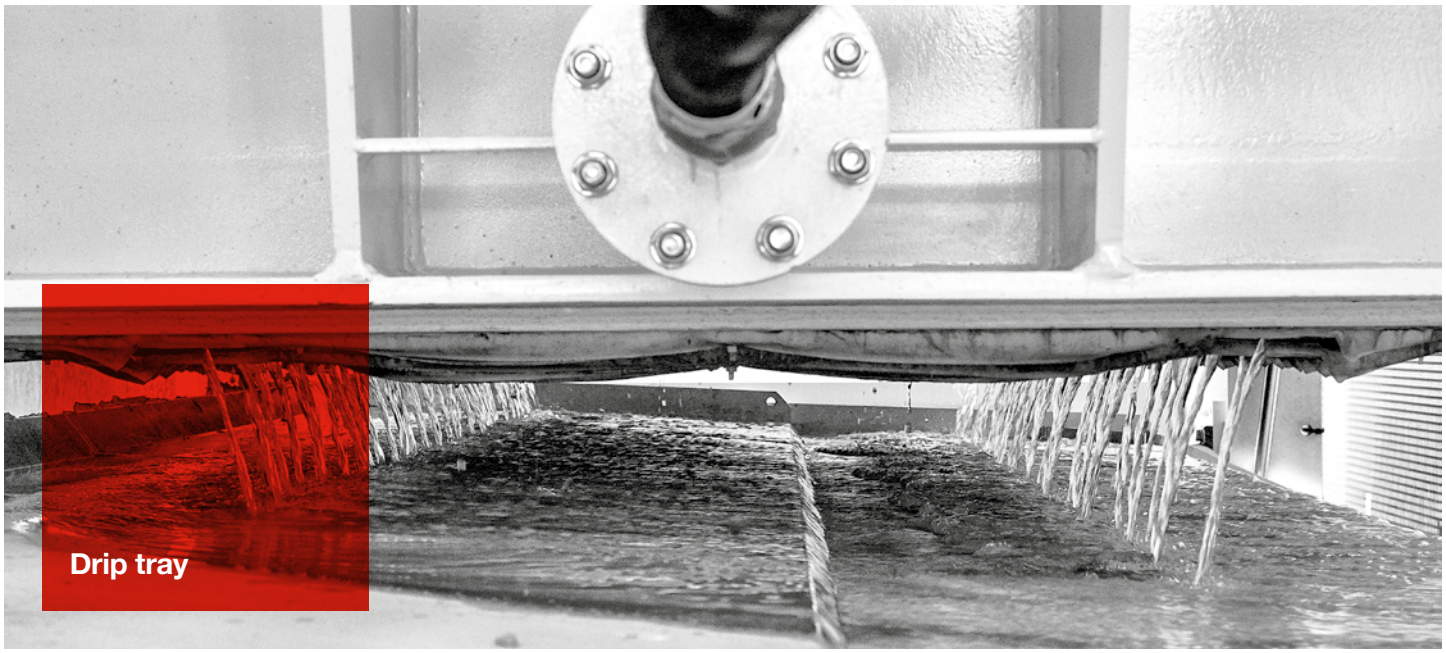


Drip tray

OPTIONS

Washing robot

The washing robot, which can travel along the entire length of the plate package, is equipped with a spray header. A hydraulic system ensures that this spray header moves up and down automatically between the filter plates. The integrated high-pressure water jet sprays off the filter cloths on the plates and therefore cleans them in a careful and reliable way.

Drip tray

The collection tray is fitted beneath the plate packages. It is used to collect the filtrate and washing water. Depending on how it this is going to be used later, it can be returned to the closed water circuit. Before the cake emptying process, the collection tray opens automatically, then closes again.

Core blow-out unit

At the end of the filtration cycle, air pressure forces the residual liquid sludge out of the filling channel back into the sludge line. This takes place before the filter plates are opened. This process prevents liquid sludge from soiling the dry, waterproof filter cake.

Membrane pressing

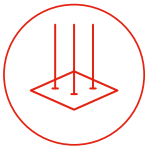
After additional pressing and more drying, the filter cake comes up against a membrane which is embedded in the filter plate. Depending on the size of the system, the membrane is filled after filling the chambers with water or air. This generates greater contact pressure in the filter cake.

Filter cake washing

If the filter cake is contaminated or contains materials that are to be reclaimed, it can be rinsed with clean water during the pressing procedure. This takes place by admitting water from the bottom to the top and perfusing it. The pollutants or valuable materials rise with the water and are fed off at the top via the plate overflow.

Filter cake drying

With sludges that are difficult to press, the filter cake is also exposed to compressed air or another gas after the pressing process. This flows from the top to the bottom through the filter cake. Liquid which has accumulated in the pores is also extracted in this way.



Cake separation system

100 % certainty that the pressed sludge cake will fall out of the filter plate chambers is achieved by using the KAS pneumatic cake separation system. The two upper filter cloth ends between two filter plates are held at the top using a pneumatic cylinder when the filter press is being filled. After the pressing procedure and the opening of the relevant filter plates, the two upper cloth ends are moved downwards using the cylinder and therefore relaxed. This procedure makes it possible for the cake to remain in the chamber by sticking to the filter cloth.

COMPLETE WATER TREATMENT PLANTS

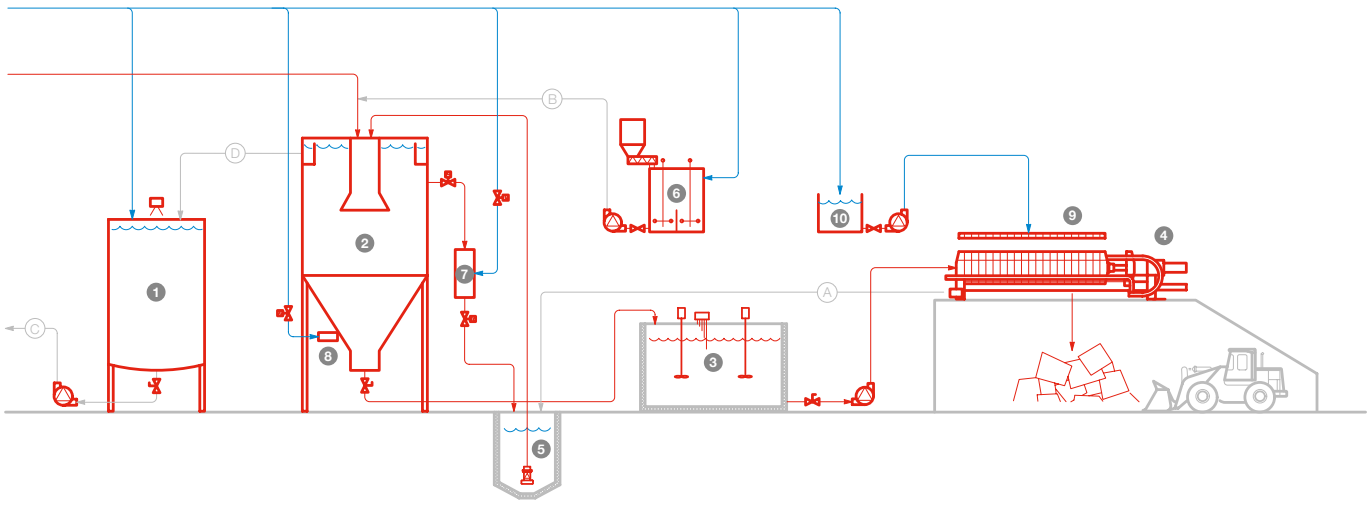
Simatec can provide you with tailor-made water treatment plants which are perfectly coordinated with your individual dewatering tasks. We guarantee flexible, customer-oriented services, and will provide you with comprehensive support during all phases. From individual advice and planning to design and manufacturing, as well as the optimisation, servicing and maintenance of the machines.

We also always incorporate the entire production process and analyse the environment. The delivery of associated system components made from steel and sheet metal rounds off our range of products in a suitable way.

Depiction of the process engineering

1. Process water tank / **2.** High clarifier / **3.** Sludge collecting tank / **4.** Chamber filter press / **5.** Dirty/filtrate water basic / **6.** Flocculant station
7. Sedimentation measurement / **8.** Sludge level measurement / **9.** Option: Washing robot / **10.** Option: Fresh water tank for washing robot

– Fresh water / – Sludge water/Dirty water / **A.** Filtrate water / **B.** Flocculant / **C.** Process water / **D.** Make-up water

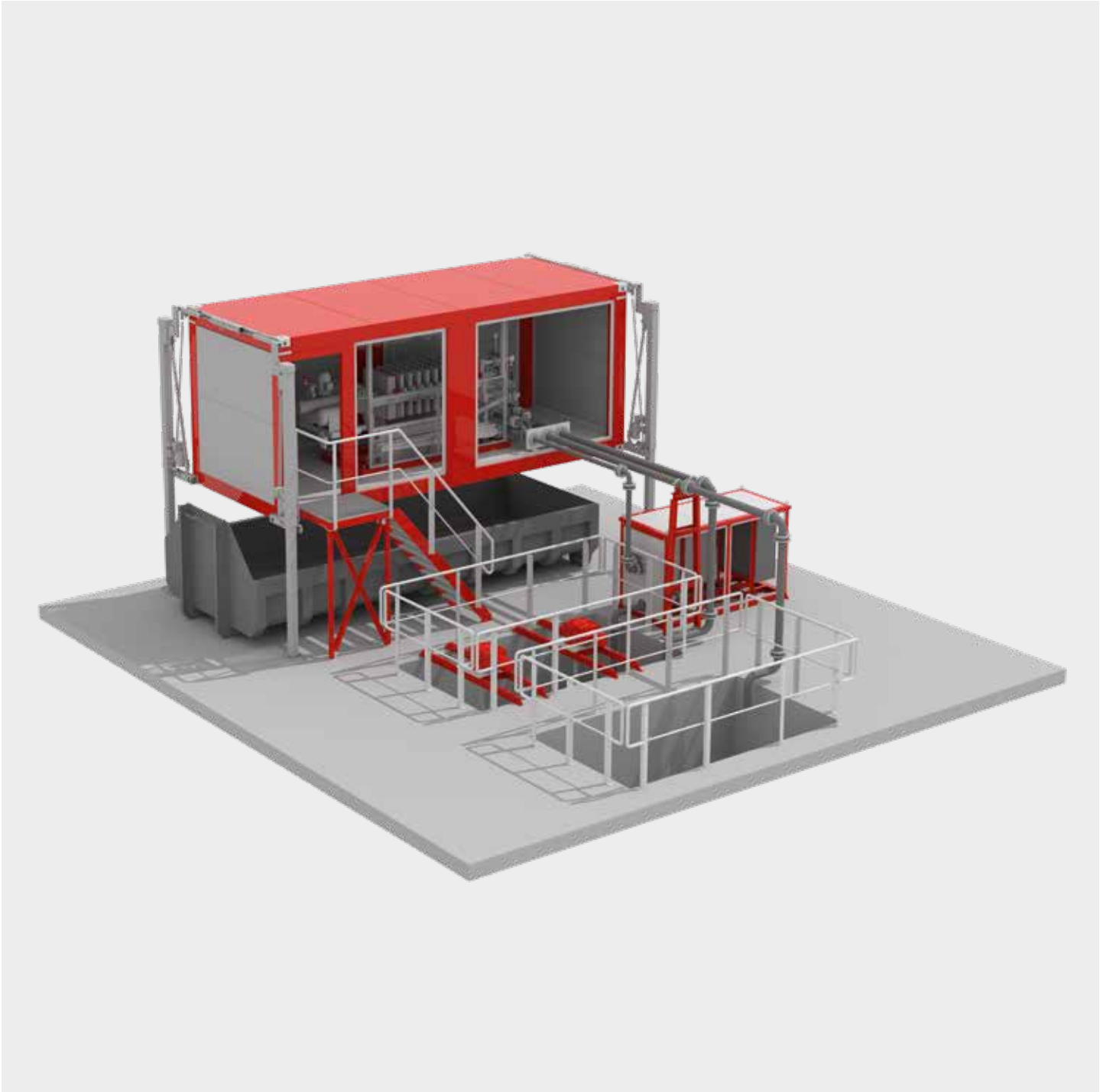


MOBILE CONTAINER CONCEPT

Our mobile solutions offer you the greatest possible flexibility in the smallest space. Their modular design means that they can be individually put together depending on the task and the case of application. The advantages of this concept are most apparent when the application is time-limited.

The processing and dewatering of cement suspensions/cement sludges, such as those which occur in the washing water from stationary concrete mixers/ready-mix concrete trucks, can be optimally covered using the Cemwash.

The Drillwash has been specially designed for the processing and dewatering of drilling suspensions/drilling sludges, such as those which occur in tunnel construction and geo-thermal drilling.



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