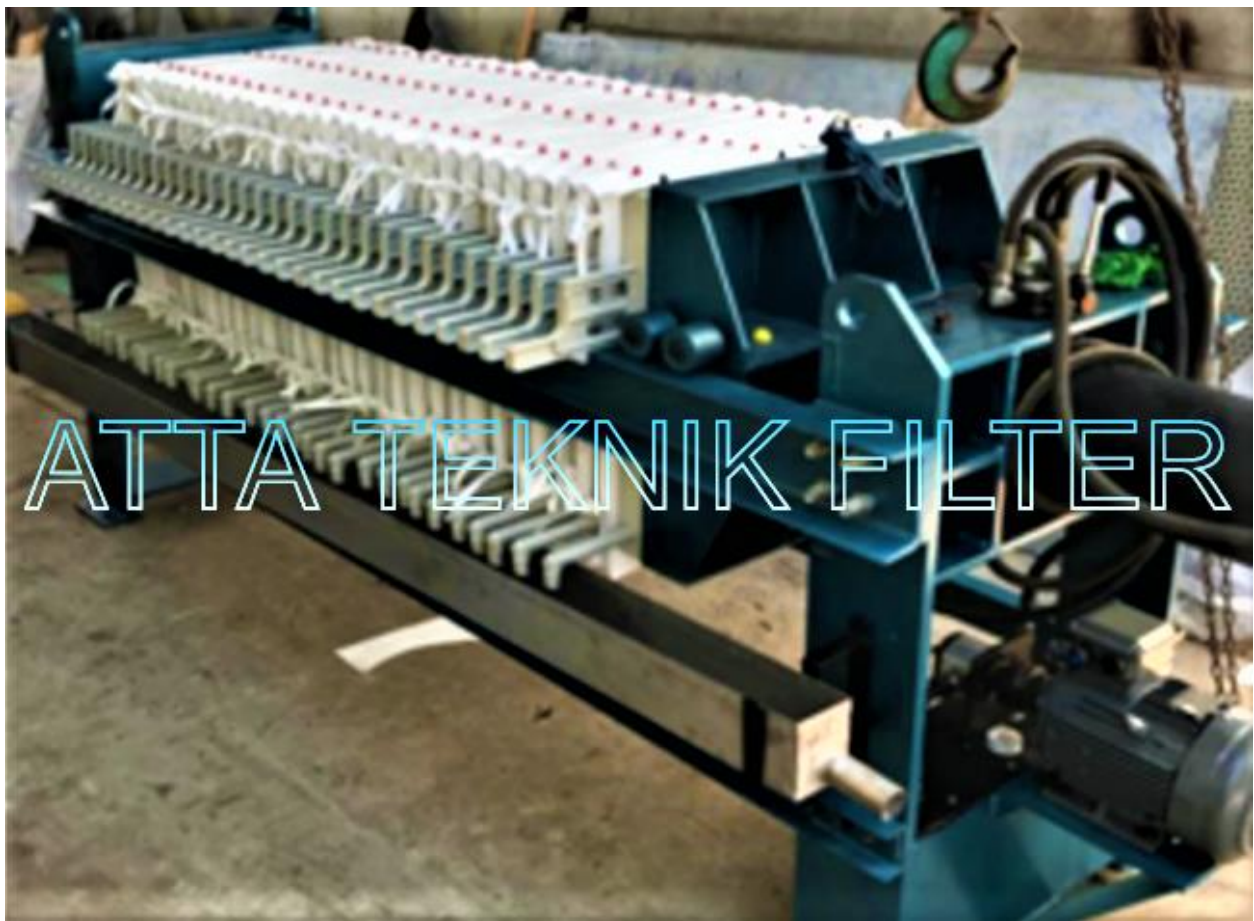


FILTER PRESS MACHINE



Filtration is the most widely used method in industrial processing such as the treatment of sludge produced by wastewater treatment and filtration processing in production.

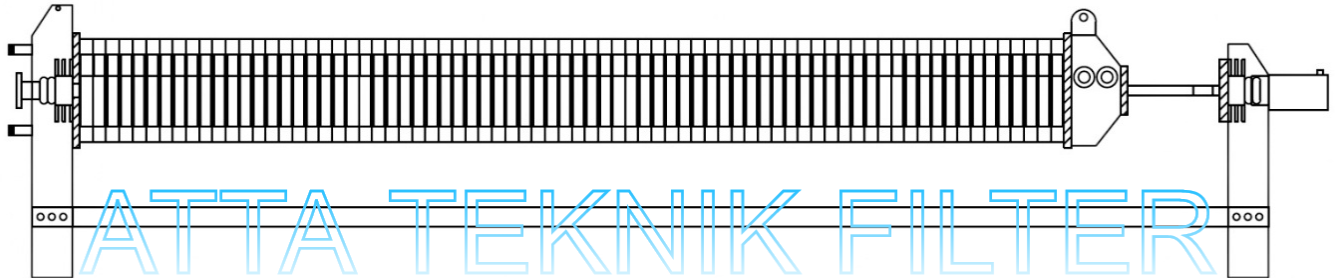
Filter presses operate applying very high pressures to the cake (from 8 to 16 bars), this pressing technique is the most widespread usage for separating particles in solutions. It compares a set of vertical juxtaposed chamber plates, presses against each other by hydraulic at one end of the set. The pressure applied to the joint face of each filtering plate must withstand the chamber internal pressure developed by the sludge pumping system.

This vertical plate layout forms watertight filtration chambers allowing easy mechanisation for the discharge of cakes. Filter clothes finely or tightly meshed are applied to the two grooved surfaces in these plates. Orifices feed the sludge to be filtered under pressure in the filtration chamber. It's usually placed in the center of the plates allowing a proper distribution of flow, right pressure and better drainage of sludge within the chamber. Solids sludge gradually accumulates in the filtration chamber until the final compacted cake is formed. The filtrate is collected at the back of the filtration support and carried away by internal ducts.

The advantages of the filter press :

- it can accept sludge with average filterability. It is always advantageous to optimally thicken sludge before filter press operations. Although sludge presenting a high filterability enables better production capacities, a filter press still accepts sludge with low conditioning precision. This tolerance means that the device offers greater overall operational safety.
- the filter press is high filtration velocities and low moisture content in formed filter cakes, due to the high filtration pressures that can be applied.
- Liquid and solid separated very well





Filtration cycle :

1. **Closing of the press:** as the filter is completely empty, the moving head activated by the hydraulic presses the plates. Closing pressure is self regulated through filtration.
2. **Filling:** During this short phase chamber are filled with sludge for filtration. Filling time depends on the flow of the feed pump. For sludge having good filterability it is best to fill the filter very quickly so as to avoid the formation of a cake in the first chamber before the last ones have been filled.
3. **Filtration:** once the chamber have been filled continuous arrival of sludge to be dewatered provokes a rise in pressure due to the formation of an increasingly thick layer of filter sludge on the cloths. When the filtration pump has stopped, the filtrate circuits and central duct, which is still filled with liquid sludge, are purged by compressed air.
4. **Filter opening:** The moving head is drawn back to disengage the first filtration chamber. The cake falls has a result of it own weight.
5. **Washing:** Whasing of clothes should be carried out every 15-30 processing oprations. Washing is sincronized with separation of plates.



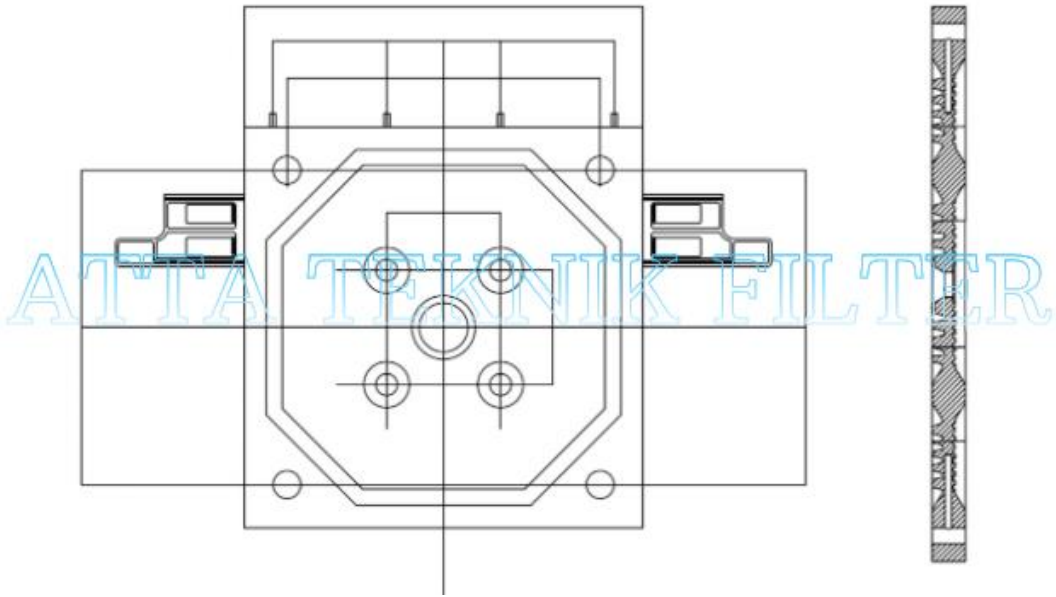
Filtration capacity

The production capacity of cake volume filter press per plate of filtering surface in according to plate size. For every the filter press model, the chamber volume and the filtering surface depend on the number of plates and it size (470mm², 630 mm², 800 mm², 1000 mm², 1500 mm²)

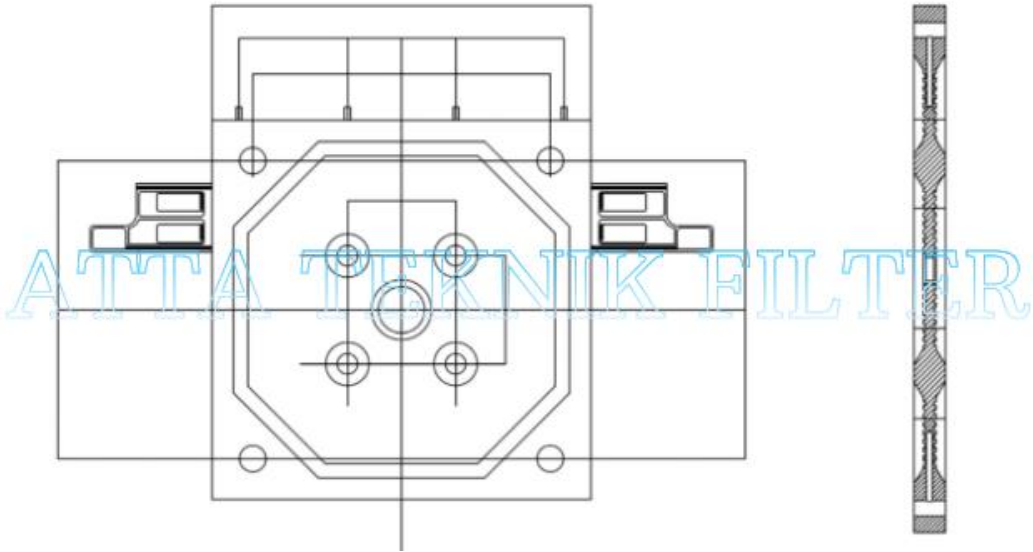
Filtration time depends on:

- cake thickness
- sludge concentration
- specific resistance
- compressibility coefficient.



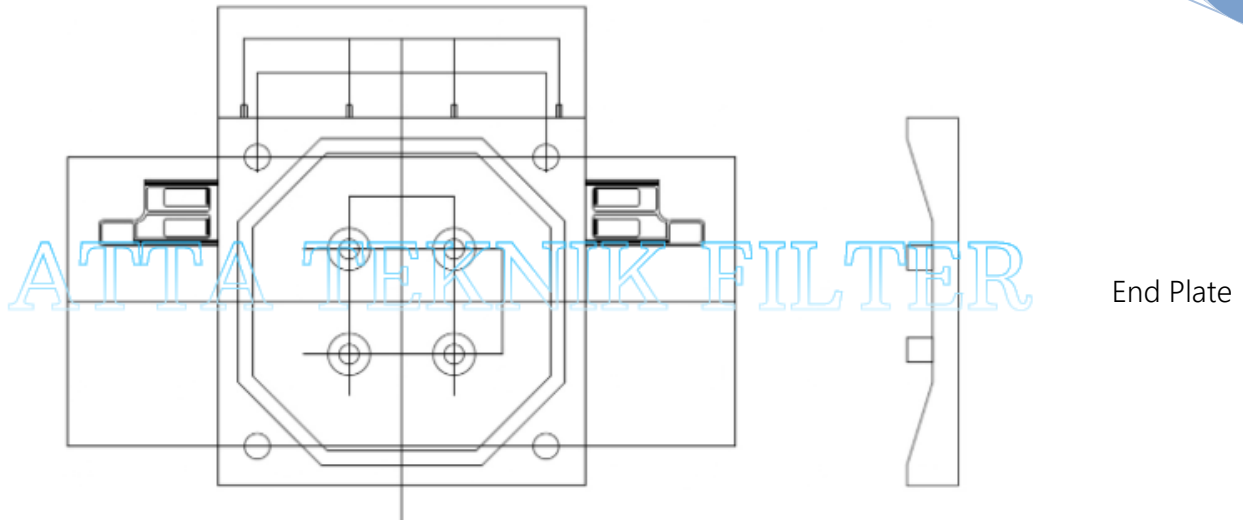


Head Plate



Intermediate Plate





Filter press application :

- Food and beverage processing
- Chemical manufacturing
- Mining
- Power generation
- Aggregates, asphalt and cement production
- Steel mills
- Municipal plants
- Wastewater treatment
- And more applications in Industry processing

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