



SCREENS

THE PROS & CONS INTERNALLY vs. EXTERNALLY FED

INTERNALLY FED SCREENS

Pros

- Ideally suited for removal of fibrous solids or are physically large.
- ideally suited for removal of solids that have shear resistant properties.
- ideally suited for removal of solids that are not amorphous or do not smear under some pressure.
- These screens provide more retention time on the screen surface and thus typically have a drier mass of solids being discharged from the screen.
- In many applications, the influent distribution piping can be altered to enhance transition of liquids/solids to the screen surface.
- The design permits the changing of the elevation of the solids discharge area, providing a drier mass of solids being discharged from the screen.
- The design permits liquid/solids separation in applications where there are very high flows.
- Reduced maintenance time & cost.

Cons

- Typically, require more sophisticated cleaning systems to keep the screen clean.
- Typically, screen cleaning requires large amounts of water and high pressure.
- Liquid/solids separation very difficult when solids are amorphous and or have lower shear tolerance.
- Typically, not well suited for liquid/solids separation applications where oils and grease levels are of concern.

EXTERNALLY FED SCREENS

Pros

- Typically, well suited for liquid/solids separation applications when a wide range of solids are present.
- Better control of influent conditions.
- Better control of liquid/solids interface with screening surface.
- Better control of liquid levels in the influent chamber/velocity & depth.
- Better cleaning of screen surfaces, due to the internal back washing activity provided by the filtrate. Typically, this is referred to as the self-cleaning phenomenon, caused by the constant back washing.
- Designs provide other cleaning approaches, all of which require less water and pressure.
- Designs provide for a wide variety of influent piping scenarios.
- Designs provide better control of screen rotation to enhance liquid/solid separation.
- Well suited for applications where oils and grease are present.
- Designs provide simple overflow bypass configurations, when upset conditions are experienced.

Cons

- Not well suited for extremely high flows when fine screening is required.
- Solids discharged from the doctor blade have the potential of being wet.
- Potential exists for free water/oils to be discharged with the solids.