

Continuous sand filtration with carbon addition to facilitate removal of nitrates from wastewater

DynaSand® Deni is a low-energy, low-maintenance vertical sand filtration plant for nitrogen removal from final discharge.

DynaSand® Deni denitrification helps reduce the adverse environmental impact of excess nitrogen compounds from treatment works into receiving watercourses.

Primarily designed for nitrate removal, for which it delivers down to 10 mg/l, the DynaSand® Deni can also provide removals of effluent phosphorus down to 0.2 mg/l, effluent BOD and TSS down to 10 mg/l.

DynaSand® Deni denitrification helps reduce the adverse environmental impact of excess nitrogen compounds from treatment works into receiving watercourses. With the addition of aluminium or ferric salts the scope of the DynaSand® Deni can be extended to remove phosphorus at the same time. As with the standard DynaSand®, the metal salts can be injected directly into the inlet stream to facilitate precipitation of phosphates.

The vertical configuration of the DynaSand® Deni means a 90% smaller footprint than the equivalent horizontal sand filtration beds.

Benefits

Continuous process based on the DynaSand® system with the addition of nitrate removal.

Nitrate, suspended solids and BOD removal in a single stage.

Can be upgraded to enable phosphorus removal down to 0.2 mg/l (annual average).

Low total N consents achieved.

Peak inlet concentrations handled.

Efficient, easy operation.

Stand alone addition to the works.



Applications

- Wastewater treatment works
- Industrial effluent treatment

Performance

| Feature | Removals |
|--|-------------------------|
| Effluent TSS removal | Down to 10 mg/l * |
| Effluent BOD removal | Down to 10 mg/l * |
| Effluent Phosphorus removal (upgrade option to include metal salts dosing) | Down to 0.2 mg/l ** |
| Effluent Nitrogen removal | Down to 10 mg/l Total N |
| Maximum flow-rate per filter | 29 l/s |

* effluent standards quoted to 95%ile

** annual average

