



Enviro-STEP
Technologies inc.

*Innovative Eco-Efficient Solutions
for Onsite Wastewater Treatment*

Bio-Redox

PREFABRICATED AND MODULAR HIGH STRENGTH WASTE REDUCTION UNIT

The **BIO-REDOX** is a completely mixed aerated biological reactor prefabricated in an easy to install module. Its main purpose is to pretreat high organic loading found in restaurants, food-processing plants, slaughterhouses and several other types of applications where food is prepared or transformed. The **BIO-REDOX** can also be configured as a complete secondary treatment system including a clarifier and sludge holding system.

The **BIO-REDOX** is installed immediately after the grease interceptor on the high strength sewage stream of the building. It consists in two treatment steps: a completely mixed biological reactor followed by a combined settling/holding tank for sludge management. The **BIO-REDOX** is provided with flow equalization as well as lamellar tube settling device for high suspended solid removal. The final stage where settling and storage is combined, simplifies the treatment train. Sludge is pumped out periodically when needed.

The **BIO-REDOX** reduces drastically BOD and COD concentrations from the high strength stream to value equivalent to or lower than domestic waste. This means that the **BIO-REDOX** can be used upstream of any type of treatment process. **BIO-REDOX** allows for significant cost reduction of any high strength waste application.

Every **BIO-REDOX** is engineered to meet the requirements of your project. Our design team assists in providing all the calculations, drawings and spec sheets of your **BIO-REDOX** unit.

A great feature is that the **BIO-REDOX** can also be used in standard domestic sewage applications to achieve secondary treatment levels of 25 mg/L BOD and 25 mg/L TSS. In such configurations, the combined settling and storage sections are separated in a conventional settling tank with automated sludge removal and a sludge holding tank with recirculation of the supernatant to the **BIO-REDOX** inlet.

*Pretreatment of
High Strength Wastewater*

Secondary Treatment

*Efficient yet simple
technology designed
for the reduction of high
organic loading from
restaurant and food
processing plants*

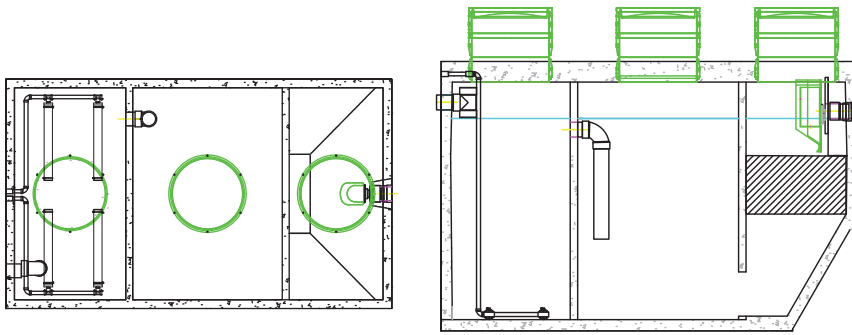


PRETREATMENT OF HIGH STRENGTH WASTEWATER

Every project is unique and our Engineering team always assures optimal design to optimize performances. From a typical high strength domestic sewage application to a more complex process requiring nutrients and pH adjustments, the **BIO-REDOX** arrives at the job site with all its components preassembled: Prefab tank (concrete or fiberglass), aeration system, final settling and sludge storage, flow equalization device, prefab chemical injection skids (if required), sampling port, etc. For a more compact version of the **BIO-REDOX**, we offer the **BIO-REDOX PLUS**, consisting of a MBBR version containing moving fixed film media.

Enviro-STEP Technologies offers a complete range of services to its customers and consulting firms from design to maintenance.

General Layout (may vary)



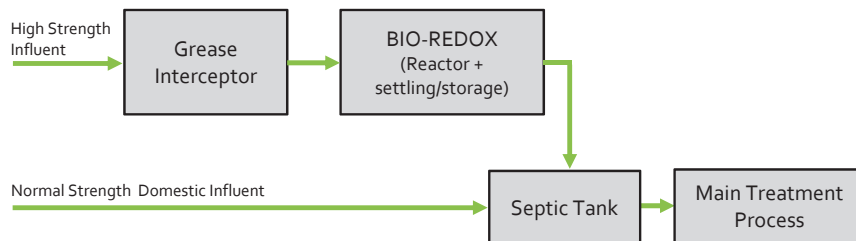
APPLICATIONS

- Restaurants
- Highway service centers
- Grocery stores
- Food processing plants
- Catering venues
- Any project where secondary treatment levels are required

FEATURES & AVANTAGES

- Strength reduction using simple biological processes
- Fully preassembled
- Cost effective
- Easy to operate and maintain
- Reduces drastically the overall cost of the project
- Proven technology
- Can be combined with any type of treatment

Process diagram (High Strength Waste Pretreatment)



PERFORMANCES

Paramètre	BIO-REDOX (Pretreatment)	BIO-REDOX (Secondary Treatment)*
CBOD ₅ (mg/L)	> 90% removal	15 to 25
TSS (mg/L)	-	15 to 25

* Standard **BIO-REDOX** achieves secondary levels. **BIO-REDOX** combined with **POLI-FILTER** post granular filtration achieves tertiary levels.



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