

Customized Design for ExtremeDuty™ Sludge Mixer

Standard Construction Adapted to Meet Unique Customer Requirements



Overview

The Seletar wastewater treatment plant (WWTP) in Singapore presented unique requirements that did not fit with WesTech's standard design for the [ExtremeDuty™ Sludge Mixer](#), and custom work was required. WesTech modified, redesigned, and created components to ensure that the mixer met the customer's specifications.

The ExtremeDuty motor usually runs at 1800 revolutions per minute (rpm), and this application required a motor to be specially built at 500 rpm to achieve the designated flow rate. In addition, the impeller was reduced from a diameter of 36-inches to 26-inches. Modifications to the mixer shaft included changing the standard cold rolled steel construction material to 316 stainless steel and increasing the diameter from 6 inches to 8.5 inches to accommodate the output torque of the motor.

To allow for these design changes, the flow deflector was redesigned. Non-standard couplings, lip seals, and bearings were specifically chosen to fit the application. Additionally, new features were added, such as an automated greasing system.

WesTech eventually incorporated some of these modifications as standards for ExtremeDuty Sludge Mixers manufactured for egg and silo shaped digesters. WesTech continues to improve on the mixer design, such as tightening machining tolerances to improve mixer stability and adapting the mixer for easier assembly and maintenance work. ■

Project Summary

Seletar Sewage Treatment Works

Location:

Seletar, Singapore

Application:

Sewage Treatment

Process:

Anaerobic Digestion

Capacity:

1.7 Million Gallons per Digester

Key Features:

- **Custom Motor**
- **Custom Impeller**
- **Automatic Greasing System**
- **316 Stainless Steel Mixer Shaft**

Highlights:

- **Modified mixer met customer performance requirements**
- **Experience in design adjustments used for new mixer specifications**