



Las Esclusas Wastewater Treatment Plant (PTAR)



2022

ABOUT THIS PROJECT:

Market Segments:
Wastewater Treatment Plant

Owner:
Autonomous Decentralized Municipal Government of Guayaquil

Products Used:
Xypex Concentrate
Xypex Patch'n Plug

Developer:
Guayaquil Municipal Water and Sewer Company EMAPAG-EP

Engineers:
Las Esclusas PTAR Guayaquil Consortium (Hidalgo e Hidalgo Construction / VA Tech Wabag)

Waterproofing Company:
Aditec Ecuatoriana Cia Ltda.

Applicators:
Eng. Jorge Gomez, Eng. Salomon Altamirano

Concrete Supplier:
Holcim Ecuador

Contractor:
Hidalgo e Hidalgo Constructors

Location:
Guayaquil, Ecuador

The Las Esclusas Wastewater Treatment Plant (Las Esclusas PTAR) in the southern area of Guayaquil, Ecuador, is part of the "Project for the Universalization of Sanitary Sewerage." It was designed to improve the region's wastewater management, serving over 1 million residents. This facility, completed on October 7, 2022, reflects a shift toward more effective and sustainable construction methodologies.

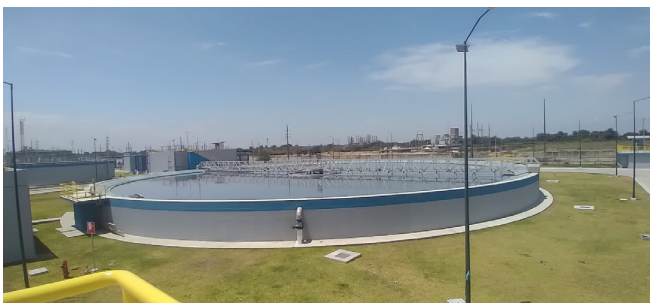
Originally, the project team had specified an elastomeric membrane system for waterproofing the concrete structures. However, as the project advanced, the need for a more reliable, long-lasting solution became clear.

The aggressive nature of the wastewater, coupled with the importance of long-term infrastructure resilience, required a system that could provide superior protection with minimal maintenance. This led to a re-evaluation of the waterproofing strategy.

After technical consultations among project engineers, the decision was made to replace the elastomeric membrane with Xypex Crystalline Technology. This shift was driven by Xypex's proven ability to deliver long-term waterproofing and its capacity to resist aggressive agents found in wastewater. Xypex's crystalline technology not only extends the life of the concrete structures but also offers a more cost-effective, time-efficient, and sustainable solution compared to the membrane system.

The transition to Xypex was further justified by the local availability of the product, unlike the membrane that had to be imported, thus reducing both costs and logistical complexities.

The Xypex products used, Xypex Patch n' Plug and Xypex Concentrate, ensured long-term integrity and waterproofing of the plant. A total of 11,730 kg of Xypex products were applied across the facility.





The application of Xypex not only met the technical requirements but also underscored the importance of using a system that could guarantee the durability and safety of such a vital infrastructure project.

Xypex has no Volatile Organic Compounds (VOCs), no Red-List Chemicals, and has up to 65% less carbon footprint than membranes. Additionally, the plant is equipped with features such as the capacity to treat methane gas emitted from wastewater, generating energy that supplies 40% of the plant's consumption. These aspects highlight the project's commitment to sustainability and operational efficiency.

While the Las Esclusas PTAR is now fully operational, contributing to the environmental health of the region, the city's commitment to enhancing wastewater management continues.

The Guayaquil Municipal Water and Sewer Company EMAPAG-EP is developing another wastewater treatment plant, the Los Merinos PTAR, which is still under construction.

Xypex has been specified for this new plant as well, ensuring that the high standards of waterproofing and durability established at Las Esclusas will be carried forward.

The choice to switch from an elastomeric membrane system to Xypex at Las Esclusas not only solved immediate waterproofing challenges but also set a new benchmark for infrastructure projects in the region.

This decision shows how innovative solutions can drive long-term success and sustainability in critical public works.

