Puebla Michin Aquarium

Mexico

Owner
ACUARIO MICHIN PUEBLA

Architect
ARROYO SOLIS AGRAZ

Project Manager
BOVIS

Contractor
ESCALERA ESPINOSA

Concrete Producer
HOLCIM APASCO

Applicator
GRUPO MG

Products
ADMIX C-1000, CONCENTRATE, PATCH'N PLUG

Project Type
WATER HOLDING STRUCTURES

As the largest aquarium in Latin America, the Michin Aquarium, located in Puebla, Mexico is a center for conservation, research, and education. After the success of the Michin Guadalajara Aquarium in 2015, the new location in Puebla opened its doors in December 2019 to continue raising awareness, sharing marine biodiversity with the public, and celebrating the importance of protecting Mexico's ecosystems through various activities.

Site meetings with Xypex Technical Staff

The Michin Puebla Aquarium has more than 90 exhibits with different species located within one of the six ecosystems (Jungle, Forrest, Reef, Mangrove, Open Sea, and Lakes & Rivers). Each section "recreates the corresponding atmosphere through sounds, colors and various elements that together create a dynamic tour for visitors."

Zero Leakage

Due to the nature of aquariums, a waterproofing solution was needed for the various tanks and exhibits that were to be built in the new Puebla Aquarium. These tanks and exhibits would remain filled for more than 30 years, so the owner needed a guarantee that there would not be the slightest possibility of leakage and therefore no maintenance in any concrete element of the aquarium. Furthermore, as some of the tanks would contain salt water, the concrete needed to withstand the effects of marine environments.

Pouring Xypex Admix treated concrete

Despite being specified to use surface waterproofing, the owner and contractor decided that Xypex's crystalline waterproofing technology was the best solution. Due to the fact that Xypex Admix C-1000 becomes an integral part of the concrete, the crystalline structure within the concrete prevents the ingress of water and other liquids even under strong hydrostatic pressure. In contrast, barrier-type products function only at the surface of the concrete. Xypex's crystalline matrix also pro-

tects the concrete from chemical attacks, such as chlorides, sulfates, acids, or industrial chemicals, and self-heals cracks of up to 0.5 mm, thus extending the durability of concrete in the various aquarium tanks.

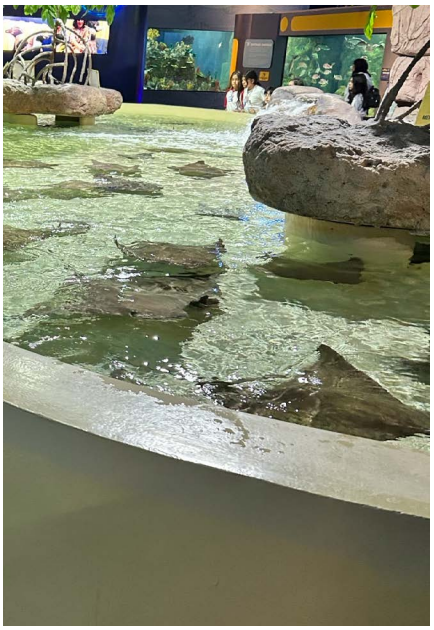
Construction Schedule Savings

Furthermore, since the crystalline waterproofing is added directly to the concrete mix there is no installation time involved. Contrastingly, the typical installation rate for PVC membranes can be 85 m^2/shift and 250 m^2/shift for spray-applied membranes. By choosing to use Xypex Admix, the Michin Puebla Aquarium was able to reduce the amount of labor and time necessary in application as well as eliminate the future need for maintenance or reapplication.

Xypex Admix C-1000 was used in the concrete for the Cistern, Shark Tank, Manta Ray Tank, and Quarantine Tank. With a capacity of 600,000 litres, the Shark Tank concrete was dosed with Xypex Admix C-1000 during a two-stage casting construction. Cold joints, cracks, and tie holes were repaired with Xypex Concentrate and Xypex Patch'n Plug. The Manta Ray and Quarantine Tank used Xypex Admix C-1000 in a monolithic casting and no consolidation problems or major cracks were detected. The concrete used in this project for the various tanks and cisterns is now fully protected, thus managing to extend its useful life and allowing habitats within the aquarium to have the best conditions of quality and safety.

Preparation of Cistern

Finishing of Cistern slab



Stingray Tank

Casting of Shark Tank

Shark Tank