

## Artificial lagoons in Chile – a landscape of superlatives

### World record with Leister

Crystal Lagoons Corp.'s concept and technology enable to build crystal clear water bodies in almost unlimited dimensions thanks to its uniquely new and patented concept. In a region where the sea is too rough and thus unattractive to tourists, it is now possible to construct giant artificial lagoon landscapes. There are already several of these pools in the world. One of them is situated in Las Brisas de Santo Domingo, Chile. But the world's largest one can be found in San Alfonso de Mar. It covers an area of 8 ha. In fact, Crystal Lagoons Corp. managed an entry in the Guinness Book of Records with it in 2007. The longest distance stretches for more than 1 km. You can actually see it on "Google Earth". An even bigger basin with an impressive 12.5 ha area of crystal-line water is currently taking shape in the Egyptian resort of Sharm El Sheikh.

#### Cost-effective maintenance

To ensure the quality of these huge bodies of water at the lowest expense, Crystal Lagoons Corp. has developed an innovative technology patented in 150 countries. It is based on an energy-saving filter system combined with a pulsed flushing method for disinfecting the water. That means up to 100 times less chemicals and 50 times less energy are used during the cleaning than with conventional methods.

#### Las Brisas de Santo Domingo - a challenging project

Construction of this 2.2 ha complex with a maximum length of 320 meters and 70 meters width was a challenge in itself. The substrate had to be sloping so that the lagoon



*Las Brisas de Santo Domingo on "Google Earth".*

landscape offers different depths for the various types of water sports. The ground was sandy, which made welding work considerably difficult. And what is more, a tight construction time of only four months had to be met.

#### The perfect sealing system

The entire structure consists of a geotextile overlapping on the sandy substrate of the excavation. A 0.75 mm thick HDPE plastic sealing sheeting was then laid directly on the geotextile. The LLDPE sealing, especially designed in the US under Crystal Lagoons' brand and specifications, and



*Las Brisas de Santo Domingo lagoon undergoing construction.*

exclusively offered to their clients, completed the structure. 5400 m weld seams had to be processed for every position. A total of 16.2 km were therefore welded. All the requirements for tightness and aesthetics are fulfilled with this system.

#### **Welding machines from Leister busy at work**

Two combi-wedge welding machines TWINNY S made by Leister were used for the welding work. The welding process using the TWINNY S involves an air heated hot wedge. This lightweight welding machine proven in use throughout the world is compact and easy to handle, yet impressively powerful. Even thin plastic sealing sheets like those used here can be handled by the TWINNY S with an astonishing speed of up to 6 m/min.



*The compact and convenient TWINNY S with combi-wedge welding the uppermost layer.*



*The proven manual welding unit TRIAC S for detailed work.*

#### **The right tools for any challenge**

Connections and detail work were carried out with the reliable manual welding device TRIAC S. It was no problem to weld seams in positions less suitable for welding machines thanks to the long-shaped FUSION 3. This hand extruder allows you to work in an upright position without strain. The FUSION 3 really shows its merit when welding batches with thick materials.



*The hand extruder FUSION 3 for upright extrusion welding without strain*



**Guaranteed quality with EXAMO**

The proven test instrument EXAMO made it possible to check the weld samples without complications directly on the construction site. The EXAMO lets you test peel, tensile and shear forces. If need be, the relevant parameters for speed, temperature and pressure can be adjusted afterwards on the welding machine.

**A successful finish**

Hard to believe: The San Alfonso de Mar project was able to be completed successfully within just 120 days. This was thanks to the collaboration between experienced engineers and the layout company Termofusion Siplas Ltda, who have been relying on the powerful, world-proven welding equipment from Leister for many years. "We work almost exclusively with Leister tools. Both the welding quality, as well as the speed and reliability of the Leister devices never cease to amaze us", is how Waldo Neira, Project Manager of Termofusion Siplas Ltda, praises the equipment from Leister.

*The tensile tester EXAMO for checking the relevant welding parameters.*



*The finished lagoon in Las Brisas de Santo Domingo, Chile.*

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**System responsibility:** Crystal Lagoons Corp., [www.crystal-lagoons.com](http://www.crystal-lagoons.com)  
**Installers:** Termofusion Siplas Ltda, [www.siplas.cl](http://www.siplas.cl)  
**Equipment manufacturer:** Leister Process Technologies, Switzerland, [www.leister.com](http://www.leister.com)  
**Leister sales and service partner in Chile:** Vorwerk y Cia S.A., Santiago, [www.vorwerk.cl](http://www.vorwerk.cl)

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