

## Liqui-Cel® Membrane Degassing Modules Improve Ice Production at the Ice Palace in Moscow

An innovative approach to high quality ice production has been adopted by the new *Ice Palace* in Moscow. In addition to hosting hockey matches, the arena also hosts many international events such as figure skating and short track competitions.

To achieve high quality standards for the ice that is used in large ice arenas, Gelios Star, a Russian OEM, has designed a state-of-the-art water treatment process. This process utilizes Liqui-Cel® degassing technology to take gasses and bubbles out of the water used to make the ice. Gasses in the water can produce a cloudy appearance in the ice which negatively impacts what the fans and TV cameras see during events held in the Ice Palace.

The overall water treatment system used in the ice palace includes the following elements that work together to improve ice production.

- Water pressure boosting multi-stage pump
- Sedimentation granular medium filtration unit with automatic back-wash
- Activated carbon for Cl<sub>2</sub> removal
- Ion-exchange softening
- Reverse osmosis unit for 2x 1.5 m<sup>3</sup>/h capacity
- Permeate storage tanks
- DI multi-stage vertical pump
- Two Liqui-Cel membrane degas units 6x28 size
- Polishing Mix-Bed



*Liqui-Cel® Water Degassing System used at the Ice Palace to produce Crystal clear ice at the arena*

Two Liqui-Cel® Membrane Degasifiers are connected in parallel and operated with a combination of air and vacuum. Carbon Dioxide and Oxygen are removed from the DI water stream, which helps to produce a crystal clear ice that looks like glass. The system can process up to 31 gpm (7 m<sup>3</sup>/h). Due to the modularity of the Membrane Degasifiers and the variety of sizes available, a system to process flow rates much higher or lower can also be built.

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