Get the best flotation performance for your fine ores with the Outotec® ColumnCell, across all duties in flotation circuits. ColumnCell units are available in a wide range of sizes, allowing high capacity and the most appropriate heights for different duties. The absence of moving parts and the options for different types of lining minimizes maintenance and enables high availability.

**BENEFITS**
- Superior metallurgical flotation performance for fine ores
- High concentrate and froth quality
- High availability and high capacity
- Easy and safe operation
- Reduced energy consumption and small plant footprint
Outotec offers two types of SonicSparger systems; SonicSparger Jet and SonicSparger Vent. The number and position of the spargers are calculated to provide a homogeneous air distribution across the column, resulting in the best bubble surface area to enhance recovery. The SonicSparger systems are available with options to promote the most appropriate air distribution and bubble size, and the choice is made to meet requirements of each application.

**SonicSparger™ Jet**

SonicSparger Jet is based on ultrasonic injection of air or air plus water. SonicSparger Jet includes a superior and easier to calibrate control system for automatic shut down [patented feature] in case of air compressor failure, enhancing reliability and reducing maintenance. Maintenance of SonicSparger Jet is easy and only the nozzle needs to be replaced during regular preventive maintenance, reducing maintenance costs.

**SonicSparger™ Vent**

SonicSparger Vent is based on the Venturi principle, which is the best way to generate the most energetic and smaller microbubbles. In this system, a portion of underflow recirculates into the SonicSparger Vent, generating bubbles via cavitation. An extra injection of air guarantees the best air inflow.

**Life cycle support**

Outotec is your partner for the entire life cycle of your plant. From a greenfield project plan to a flotation process modernization, our experienced service team has you covered. Our service offering ranges from spare parts to comprehensive solutions covering your entire maintenance and operations, including:

- **Project design and engineering services** - We can design a tailor-made flotation circuit for your plant with optimized cell volume, froth carry rate, and residence time.
- **Installation, commissioning and ramp up of columns** - We provide support to ensure a smooth production start-up to reach the designed process performance quickly and efficiently.
- **Assessment of flotation performance** - Your process will be thoroughly evaluated to indicate the main aspects impacting performance and potential improvements.
- **Pneumatic flotation training** - We can provide general or advanced training in pneumatic flotation technology based on your needs in different levels, from operators to flotation process engineers and experts.

**Column modernizations and spare parts**

We can replace spargers, instruments and other accessories in your existing columns to achieve superior metallurgical performance. Modernization is a fast and practical way to use Outotec technologies to improve your results.
SUPERIOR METALLURGICAL PERFORMANCE FOR FINE ORES

Flotation of fines requires special features: higher energy collection with smaller bubbles to guarantee a good recovery; a less turbulent regime / good slurry distribution to avoid bypass; and a fluid, deeper and more selective froth to generate a better product quality. Outotec ColumnCell is designed to provide all these features, tailored to the ore type and the requirements and specifications of each project.

High concentrate and froth quality
The structure of the columns, with higher height, allows the development of deeper froths. With the column’s wash water system, water is distributed over the froth in a soft, homogeneously dispersed manner. This flow of water washes the froth and displaces most of the entrained hydrophilic material back to the pulp.

Outotec ColumnCells use a perforated tray to distribute the water. The number and size of holes are calculated to promote the appropriate distribution of water over the froth. This system is also easier to clean and maintain, in comparison to other systems.

High availability and capacity
Outotec ColumnCells are available in a wide range of sizes, allowing high capacity and the most appropriate volumes for different flotation duties. The absence of moving parts and the possibility of different types of lining minimizes maintenance needs, enabling high availability.

Easy and safe operation
Outotec ColumnCell is easy to operate, the main controls are the level and air flow rate. Accurate instrumentation is used for air control. Level control can be performed by standard sensors or with the LevelSense, an advanced control system developed by Outotec that provides the most precise measurement of slurry and froth levels.

Easy and low cost maintenance
The main wear part of the ColumnCell are the spargers. The ColumnCells are available with two types of sparger systems, and both can be easily and safely removed from the column without interrupting its operation.

With the use of wash water, a more fluid froth develops, with a higher grade of hydrophobic material, which means a better concentrate in direct flotation or a higher recovery in reverse flotation. The internal launders design promotes the optimal lip length, froth area, and transportation distance for collection of froth, increasing froth recovery.