SOMERSET INTERNATIONAL

IRON ORE

Ultra-fines Processing, Resource Recovery from Tailings, Dry Tailings Disposal, and Clean Water Supply

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INNOVATION IN RESOURCE AND TAILINGS MANAGEMENT

Somerset International develops and applies innovative technologies to enhance efficiency and sustainability in the mining sector. Specializing in mineral processing and resource recovery, Somerset employs advanced methods to maximize mineral extraction and recovery while minimizing waste and environmental impact. Somerset's world-leading expertise in tailings dewatering and management delivers responsible handling of mining by-products, reducing waste and ecological risks. Somerset enhances operational efficiency, reduces costs, and boosts productivity through tailored, performance-driven solutions. Somerset offers comprehensive services incorporating design, installation, operation, and maintenance delivering long-term value for our valued customers globally.

CLASSIFICATION TECHNOLOGY

Somerset's patent-pending SUB325® classification system significantly enhances mineral processing recovery through precise particle size classification down to < 4 µm. This advanced technology can be utilized to remove unwanted gangue material, thereby enhancing plant beneficiation, and to recover ultra-fine valuable resources and minerals that are typically discarded with tailings.

TAILINGS MANAGEMENT SYSTEM

Somerset's SUB325® Tailings Management System revolutionizes tailings management by maximizing resource recovery and minimizing environmental impact. Somerset's patented solid bowl centrifuge technology enables efficient solid-liquid separation, water recovery, and dry tailings disposal. The system's modular design can be readily applied to meet specific tailings duties across different sites, reducing or removing the need for traditional, environmentally risky wet tailings dams. With ongoing process development, the system is adaptable to a range of minerals, such as coal, phosphate, iron ore, copper, PGMs and gold.

SOMERSET OPERATIONS

Somerset operates and maintains resource recovery and Tailings Management Systems globally with > 95% availability for reliable performance. The modular design allows for cost-effective solutions which can be readily adapted to meet plant requirements and expanded as needed. Somerset's systems, produce low moisture cake with excellent handling properties. Somerset's Tailings Management System provides significant savings in capital expenditure (CAPEX), operational expenditure (OPEX), and footprint compared to conventional dewatering methods. With decades of experience in the mining industry, Somerset's team maintains an exemplary safety record at all locations. Somerset offers innovative and flexible commercial arrangements including investing in, operating, and maintaining systems under performance-based service agreements to meet our customers' requirements.

SUB325®

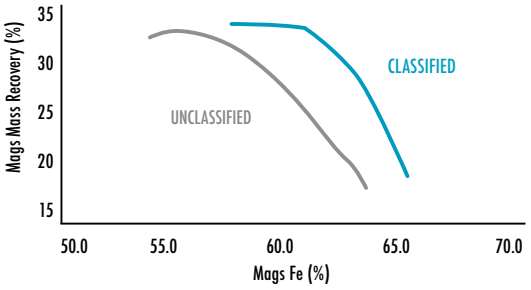
CHALLENGES IN IRON ORE PROCESSING

- Environmental challenges, such as excessive water consumption and operational risks linked to wet tailings.
- The complexity of processing iron ore deposits with high levels of impurities such as silica and clay to achieve desired quality.
- Significant metal loss during the fine grinding of iron ore particles.
- The ongoing need to balance profitability with sustainability, particularly in waste management and community impact.

Somerset addresses these challenges with cutting-edge technology designed to maximise ultra-fine particle recovery in mineral processing including ultra-fine iron ore from tailings. This innovative solution enables efficient dewatering and produces a tailings product suitable for safe and effective dry stacking.

TECHNICAL SOLUTION

- Somerset's advanced technology recovers ultra-fine iron ore that was otherwise being discarded as tailings, driving enhanced sustainability outcomes.
- This innovative system efficiently recovers large volumes of high-quality water for reuse, significantly reducing overall water consumption.
- The SUB325® system outperforms traditional methods like filter presses, offering continuous solid-liquid separation, higher water recovery, and smaller footprint.
- The process produces a dry cake suitable for dry stacking, effectively eliminating the need for traditional tailings dams and minimizing environmental impact.



CASE STUDY

SUB325® benefits based on case study in South America on itabirite ore.

SYSTEM OVERVIEW

- The SUB325® system is used for classification and dewatering.
- It effectively rejects ultra-fine clays (< 4 µm) while preserving recoverable iron (Fe).
- Removing clays, the system boosts Wet High-Intensity Magnetic Separation (WHIMS), yielding a high-grade product with few impurities.
- Traditional classifiers often discard valuable minerals along with ultra-fine clays.

ECONOMIC IMPLICATIONS

- The system produces a high-grade iron ore product with low contaminant levels.
- An estimated additional revenue potential of around US$200M annually*.

* Pricing: Iron ore fines (US$132/t, CFR, db)