



## Technology for Reject Treatment and Recovery

ATREX<sup>®</sup> G-series provides a highly efficient, flexible and compact process to treat the reject flows from the paper and boards machines. This reject flow, which contains valuable minerals and fibers, can amount from 1 up to even 4% of the total tonnage of the paper or board production line, and is in many cases hauled to the landfill. With the ATREX<sup>®</sup> system most of the valuable minerals and fibers can be recovered and reused in the process.

■ MORE THAN 95% OF THE REJECT STREAM RECOVERED BACK TO PROCESS

■ FAST RETURN ON INVESTMENT

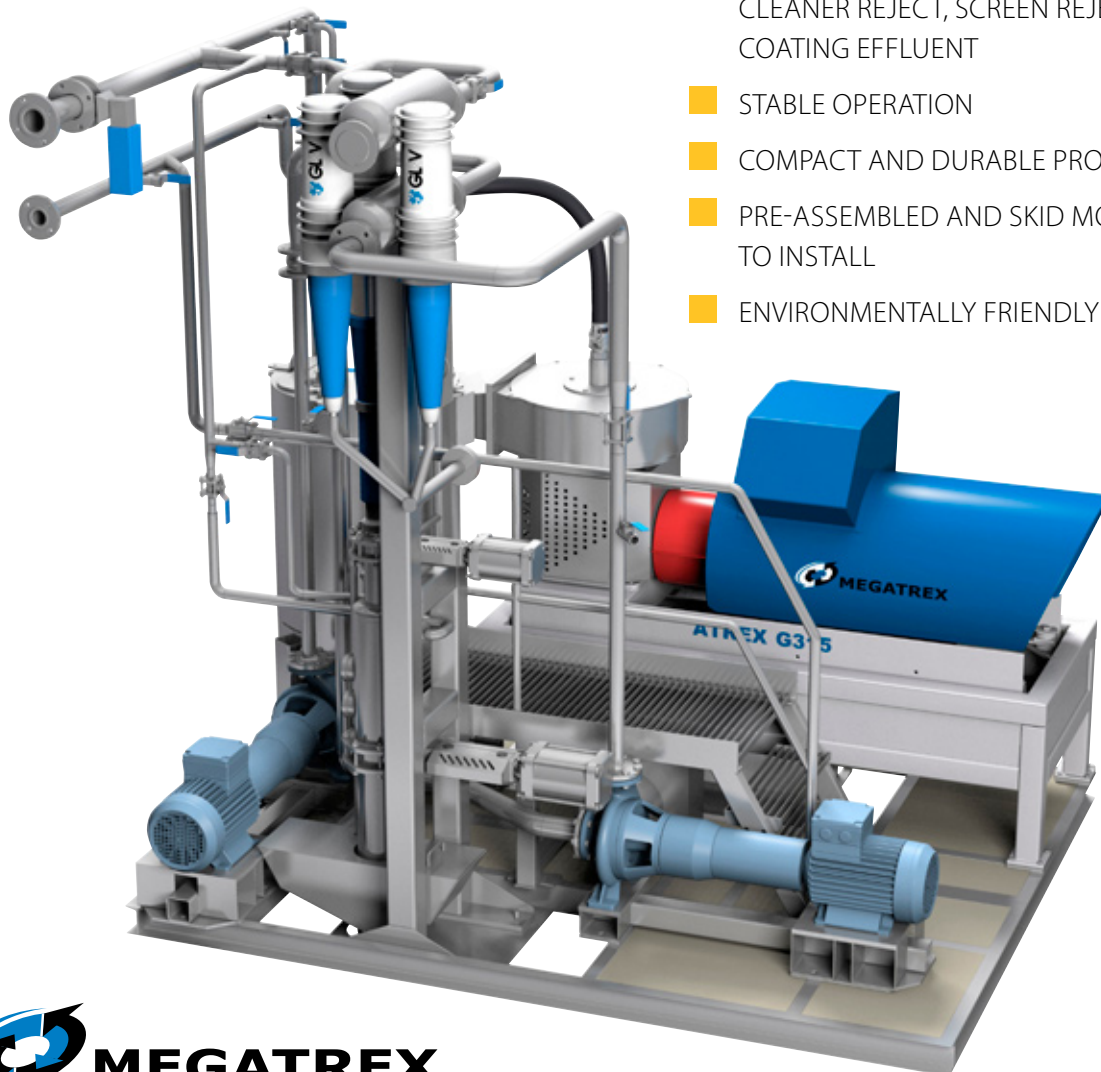
■ SAME PROCESS CAN BE USED TO RECOVER CLEANER REJECT, SCREEN REJECT AND COATING EFFLUENT

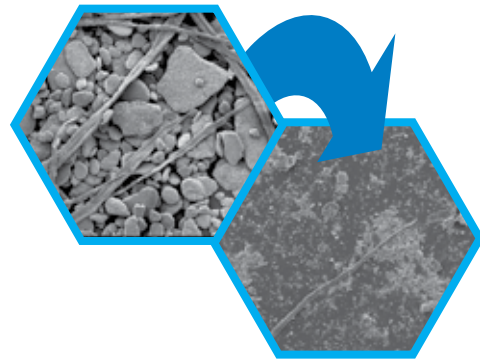
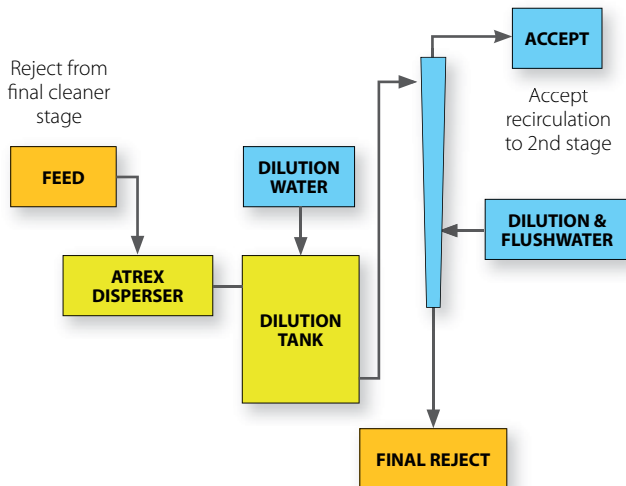
■ STABLE OPERATION

■ COMPACT AND DURABLE PROCESS DESIGN

■ PRE-ASSEMBLED AND SKID MOUNTED. EASY TO INSTALL

■ ENVIRONMENTALLY FRIENDLY





Electron microscope pictures of Cleaner Reject (left) and Accept from the Atrex process (right).

## VALUABLE RAW MATERIALS

The cleaner reject consists of valuable raw materials that can be reused in the process after treating them with ATREX<sup>®</sup>. Especially the paper and board mills producing coated grades have a lot of coating flakes in their current reject streams. The heavier the coating is the more difficult is deflaking with existing machinery. Double coated grades or coated board are good examples.

When the reject stream is studied more carefully, one can detect fractions from fillers, coating flakes, residues from furnish like fiber knots or shives and contaminants like sand.

When this stream is processed with ATREX<sup>®</sup> the target is to reach the original particle size distribution of coating pigments and fillers. At the same time fiber knots are disintegrated and shives grinded. It has been shown that all the fibers and more than 95% of the total reject stream can be recovered back to process. The pigment works as filler and the use of native filler can be subsequently reduced.

In this process ATREX<sup>®</sup> unit with an additional cleaner is installed after the last, typically the 6th centrifugal cleaner stage. The accept of the additional cleaner will be returned to the 2nd stage feed and the reduced amount of residue will be the final reject. See flow sheet.

## ECONOMICAL CONSIDERATIONS

When analysing the economical impact of this process for the mill, one has to take in account the value of the recycled raw materials and the savings of the transportation of the reject and the charges for landfilling. Typically these considerations lead to a payback time of 6 to 12 months.

## PRESENT STATE OF THE DEVELOPMENT

The ATREX<sup>®</sup> process has been developed and run at extensive trials at a number of paper and board mills. The first units were installed and started up in early 1999. Over 50 units are running worldwide. There are ATREX<sup>®</sup> units available to cover capacities up to 100 cubic meters/h. We can offer trial runs at the customer's mill with the transportable pilot units.

## CONCLUSIONS

The ATREX<sup>®</sup> Reject Recovery Process is an environmentally sound process to treat the reject flow from the final stage of approach flow centrifugal cleaners, paper machine screen rejects and coating colour effluents. The process not only reduces the amount of wastes, it turns them into valuable raw materials.

## Technical Specifications

Application: Reject Recovery Process

Atrex G-Series	Rotor Dia. mm	Motor Power, kW (1500 rpm)	Capacity Flow, l/s	Capacity Consistency, %
CD500G	500	1 x 30...75	0,5 – 5	0,5 – 15
CD650G	650	1 x 90...200	3 – 8	3 – 20
CD700G	700	1 x 250...400	5 – 15	5 – 20

Cleaner	Capacity, l/min	at Pressure Drop, kPa
Albia 500 FRB	500	120
Cleanpac 700 FRB	630	150
Cleanpac 270 SR	360	150
Cleanpac 700/700 LD	630	150
Celleco Twister	630	175