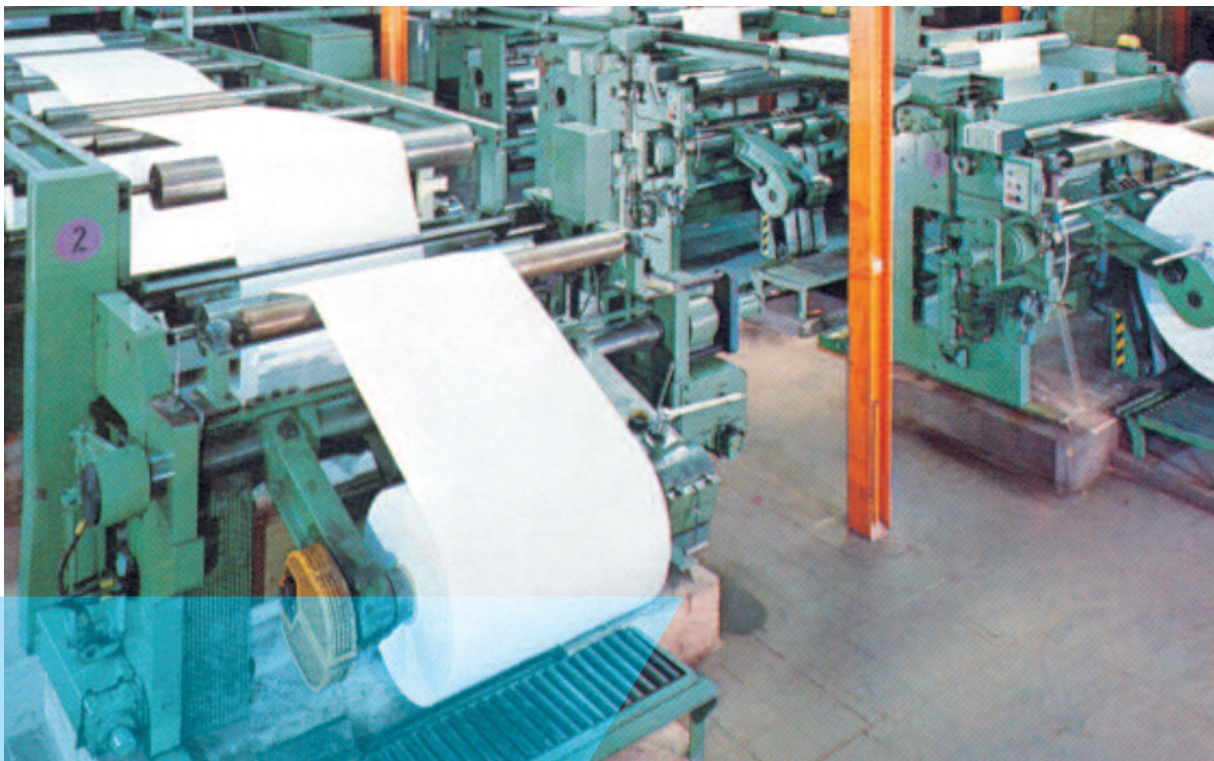


HUBER Solutions for the Paper and Pulp Industry



- Tailored overall solutions from one source
- Long expertise in industrial wastewater treatment
- Well-proven products
- Global presence

►► The situation

High amounts of fresh water are needed for the production processes in paper and pulp industries, with a high environmental impact and the result of enormous costs. It is therefore getting more and more important to treat wastewater and return it to the process.

►► The requirements

Paper factories often cover their high fresh water demand with surface water but surface water requires mechanical pre-treatment before its use in the production processes of paper factories.

As the wastewater and sludge to be treated originate from different production processes, they require specific treatment to ensure their as complete as possible conditioning and reuse.

►► The solutions

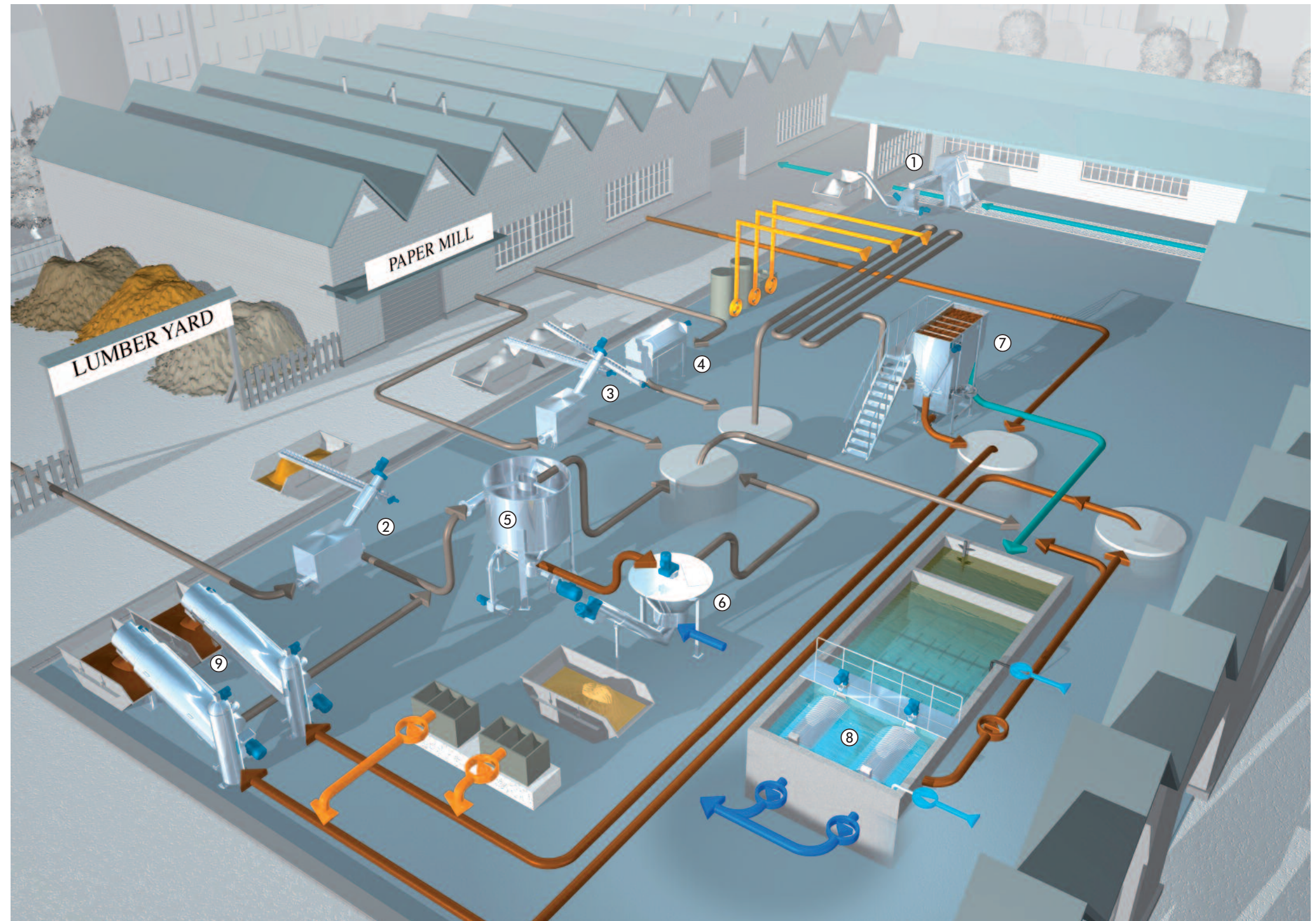
Especially at big lumber yards, large volumes of heavily polluted surface water are generated during storm events. If screened and after removal of the contained grit, this water can be introduced into the wastewater plant.

Most of the wastewater is generated in the pulpers where the wood fibres are watered. This wastewater has a very high COD and fibre content. The majority of the fibres can be removed from the wastewater flow by means of a fine screen and the separated fibres returned depending on the production process.

The filtrate from screening flows through a mixing and balancing tank into the dissolved air flotation plant where the residual fibres are completely removed. The flotation effluent is passed on to the biological membrane plant. Solids/liquid separation is achieved in an ultrafiltration plant that retains even bacteria and viruses. The permeate has bathing water quality and can be used in the paper production process or discharged into a surface water body.

The high amounts of primary and secondary sludge generated during the paper manufacturing process requires most intensive dewatering to keep the steadily rising disposal costs as low as possible.

►► Plant description



►► Coarse Material Separation

① HUBER RakeMax®

Mechanical separation of coarse material with 10 - 50 mm bar spacing.

Application: Especially for river water extraction and coarse material removal in different fields

or alternatively

HUBER STEP SCREEN® SSV/SSF

Fully automatic mechanical separation of coarse and fine material according to the STEP SCREEN® principle

Application: River water treatment, wastewater and process water treatment

② HUBER ROTAMAT® Ro 1

Fully automatic mechanical separation of coarse material with 6 - 50 mm bar spacing.

The solids are dewatered to > 35%.

Application: River water extraction and pulp and paper reject separation

③ HUBER ROTAMAT® Ro 2

Fully automatic mechanical separation of fine material with 0.5 - 5 mm bar spacing.

The solids are dewatered to > 35%.

Application: Process water treatment and reject recovery, river water treatment

►► Fiber Material Recovery

④ HUBER ROTAMAT® RoMesh®

Fully automatic separation of fine material with 0.2 - 1 mm mesh.

Subsequent screenings dewatering in a separate machine is possible.

Application: Process water treatment and reject recovery

►► Grit Separation

⑤ HUBER Circular Grit Trap HRSF

Fully automatic separation of fine grit through constant rotation.

Separation of fine grit > 90%, 0.2 mm grain size

Application: Treatment of surface water from storm events

⑥ COANDA Grit Washer RoSF 4

Dewatering and washing of grit

Application: Wastewater and process water treatment with grit separation

►► Process Water Treatment

⑦ HUBER ROTAMAT® Dissolved Air Flotation Plant Ro 5

Separation of floating material / sediments and dissolved material by introducing fine air bubbles

Application: Process water treatment and fiber recovery

►► Biological Wastewater Treatment

⑧ HUBER VRM® Membrane Bioreactor

The HUBER VRM® system is a combination of biological wastewater treatment and high-efficient solids/liquid separation. The pre-screened wastewater is aerated, clarified biologically and all solids within the flow (particles, bacteria, viruses) removed by the ultrafiltration membrane in accordance with the low-pressure principle.

Application: Process water treatment, drinking water treatment, tertiary filtration after biological treatment

►► Sludge Treatment

⑨ HUBER ROTAMAT® Screw Press RoS 3

Continuous dewatering of coarse material, sludge and fibers by means of a screw press, with optional polymer addition. Achievable dewatering result: up to 55% DS.

Application: Dewatering of fiber sludge and sludge from the primary, secondary and tertiary treatment stage or alternatively:

HUBER Bogenpress BS

Continuous dewatering of coarse material, sludge and fibers by means of a filter belt.

Achievable dewatering result: up to 50% DS

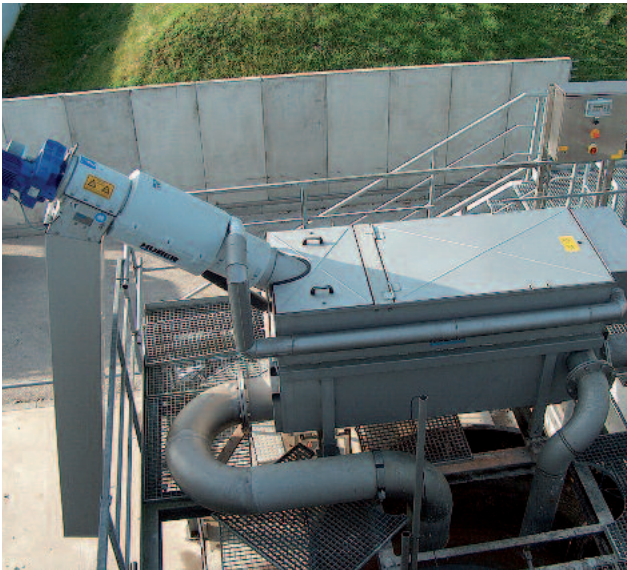
Application: Dewatering of fiber sludge and sludge from the primary, secondary and tertiary treatment stage



MD Paper Factory, Germany: solids / suspended material separation with HUBER STEP SCREEN® SSF



*Paper factory SCA Oftringen (CH)
HUBER ROTAMAT® Screw Press RoS 3*



Paper factory, Germany: solids separation with HUBER ROTAMAT® Ro 2



River water extraction in front of cooling towers with HUBER STEP SCREEN® SSV, Sasol South Africa



Paper factory Lingaong, China: dewatering of primary / biological sludge to > 28 % DS with HUBER ROTAMAT® Sludge Dewatering Plant RoS 3



Paper factory Lingaong, China: mechanical preliminary treatment with HUBER ROTAMAT® Rotary Drum Fine Screen Ro 2, 1 mm, solids retention > 60 %



*Kievskiy PPM II, Ukraine)
HUBER ROTAMAT® Screw Press RoS 3*



*Paper factory Kronostar, Russia
Dissolved Air Flotation Plant HDF-7 throughput: 70 m³/h*

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