SYSTEM AVAILABILITY

Protection Of Heat Exchangers For Heat Recovery

Technical Application Bulletin

PROJECT BACKGROUND

DISCOVER

- In a chipboard plant, the process water used heats up to approx. 122°F.
- The heated water is used for long-distance heating.
- Deposits of solid substances in the heat exchanger increasingly result in heat losses.
- The system must be shut down so the heat exchanger can be cleaned (every 2-3 months for 1 day intervals).

DIAGNOSE

- Avoidance of solid substance deposits.
- Minimization of system standstills.
- Increase of cleaning and service intervals at the heat exchangers.
- Automatic working filter.
- Reliable function also for high dirt loads and surges in contamination.
- Low procurement costs.

INDUSTRIES

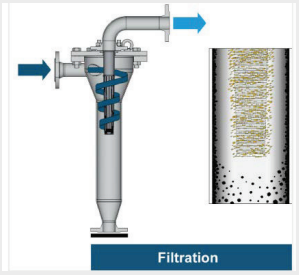


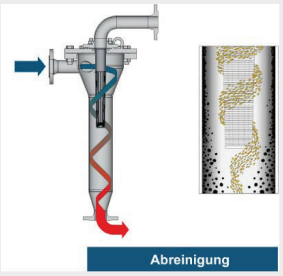


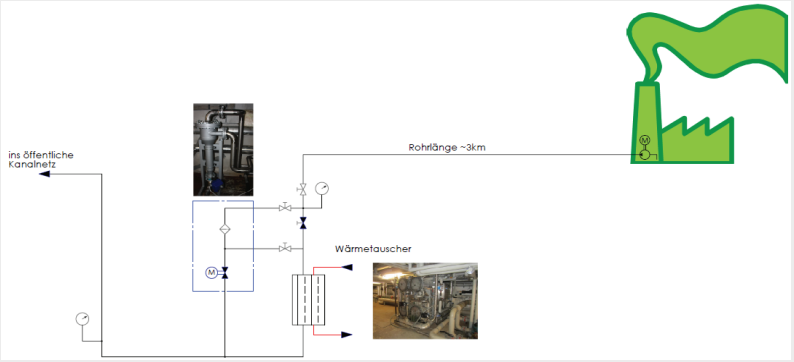
DESIGN

The warm process water is coupled to the district heating system via a tube bundle heat exchanger. In order to avoid solid substance deposits and thus machine standstills in the future, Schroeder installed an ATF | AutoFilt® TwistFlow Strainer before the heat exchanger and a hybrid system consisting of a centrifugal separator and a line filter.

- The ATF is particularly suitable for high pollution loads.
- Compared to conventional cyclone filters, the conical filter element prevents transfer of contamination to the clean side.
- No flushing pressure required.







DELIVER

Very good separation of dirt:

- According to the customer, the ATF AutoFilt® 2.5 works more than satisfactory.
- There was a high ingress of dirt which the filter coped with well.
- No longer any solid substance deposits at the heat exchanger.

Decreased standstill time:

- Increase of maintenance and service intervals for the heat exchanger by a factor of 5 (from 2-3 months to 12 months).
- As one cleaning/maintenance service at the heat exchanger takes 1 day, the annual standstill time could therefore be reduced by 4 days.

Heat Exchanger	Without ATF	With ATF
Number of maintenances	4 times a year	1 times a year
System downtime per year	5 days	1 day

Cost saving:

Costs per year	Before	After	Saving
Maintenance	$8,394.22	$1,678.84	$6,715.38
System downtime per year	$14,505.21	$2,901.04	$11,604.17

ROI

Reduced system failures per year

4 days

Cost saving per year for maintenance

$6.7K

Profit per year from feed

$11.6K

Amortisation time

9 months

Underlying values:
Maintenance costs: $1,676 per maintenance (1 day, 2 people)
Feed into the district heating network: 600 kWh
Feed remuneration: $0.20 / kWh

PRODUCT SPECS

ATF-2.5 | Automatic Twist Flow Strainer

Flow: 65-260 gpm
Operating Pressure: 145/230 psi
Inlet/Outlet: 3” Flange (DN 80)
Volume: 7.4 gal. (28 L)
Housing Material:
Stainless Steel
Carbon Steel
Housing Seal Material:
Buna N
Viton®

CUSTOMER BENEFITS

- Extension of the maintenance intervals by a factor of 5
- Increased system availability
- No carry-over of contamination to the clean side
- Reduced operating costs
- No filter elements required

FURTHER APPLICATION AREAS

- Conditioning of service water in sewage treatment plants
- Pre-filtration for waste water treatment systems
- Cooling water filtration
- Protection of pumps and orifices