

MedClean Propre Limpio


No. 48
Examples of waste and emission minimisation actions

Installation of immersed compact piping for heating flux removal baths

Company background

VALTI (Montbard, France) is a company which manufactures steel tubing. It employs some 260 people and manufactures 41,552 tonnes of tubing per year. It is a member of the Vallourec group, a world leader in the manufacture of seamless steel tubing for various industrial sectors.

Industrial sector

Manufacture of steel tubes for the bearings industry.

Environmental considerations

Flux removal is an essential stage in the manufacture of steel tubing, and for this different kinds of heated baths have to be used (acid baths, rinsing baths etc.).

The baths were previously heated by a boiler:

- The acid baths were heated by passing steam, generated by the boiler, through a graphite exchanger.
- The rinsing baths were heated by immersed coils with condensate recovery.

Background

In 1999, the company found itself faced with the problem of bringing its boiler into line with standard NF E 32020 on steam generators. Since the boiler was by then very old, it was decided to replace it. Two alternatives were considered:

- Purchase of a new boiler.
- Investment in a compact immersed piping system.

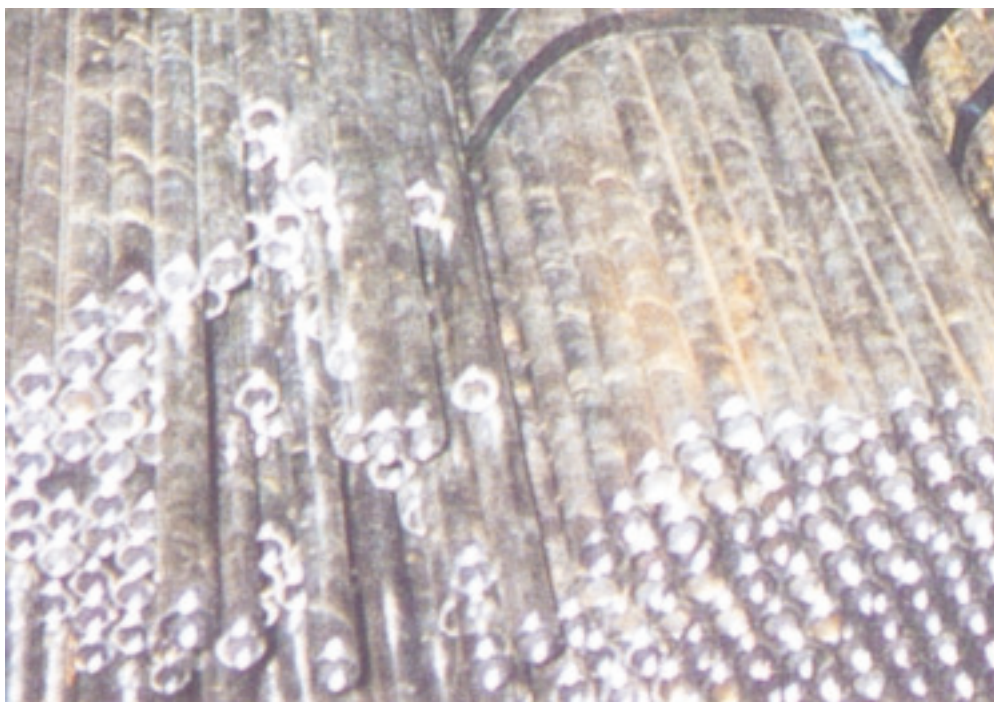
Summary of actions

Despite the larger initial investment involved, the company finally opted for the compact immersed piping solution, which enables a 50% reduction in operating costs thanks mainly to the energy savings obtained.

To ensure better heat exchange, some of the baths had to be modified. With others, the pipes had to be installed in auxiliary tanks.

Installation of a new heating system involves a total re-think of heating needs, given the potential for savings which compact immersed pipes provide.

With the application of this new operational procedure the company has made a 40% saving on the energy consumed in heating the baths. At the same time, safety has been improved thanks to the elimination of pressurised steam, while water consumption (and the associated generation of condensates) has also been reduced.



Pipes under treatment

Balances

	Old process	New process
Material balance		
Energy consumed in heating baths (MWh/y)	10,867	6,520
Savings (MWh/y)		4,347
Economic balance		
Energy savings (€/y)		58,500
Savings in maintenance costs and treatment of wastewater (€/y)		21,000
Annual savings (€/y)		79,500
Investment (€)		75,000
Payback period		11 months

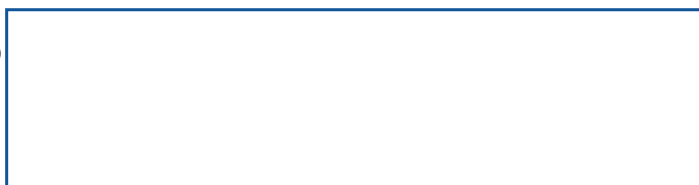
Conclusions

In addition to the energy savings obtained, the elimination of steam from the flux removal installation has enabled a more simplified piping layout and reduced the risks associated with steam generation.

This practical case has been extracted from the ADEME's publication: *Bonnes pratiques énergétiques dans l'industrie*.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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