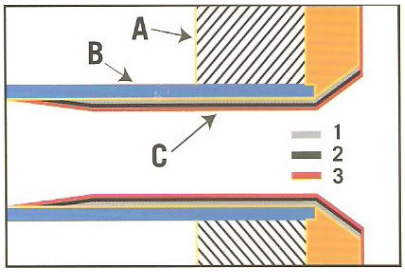
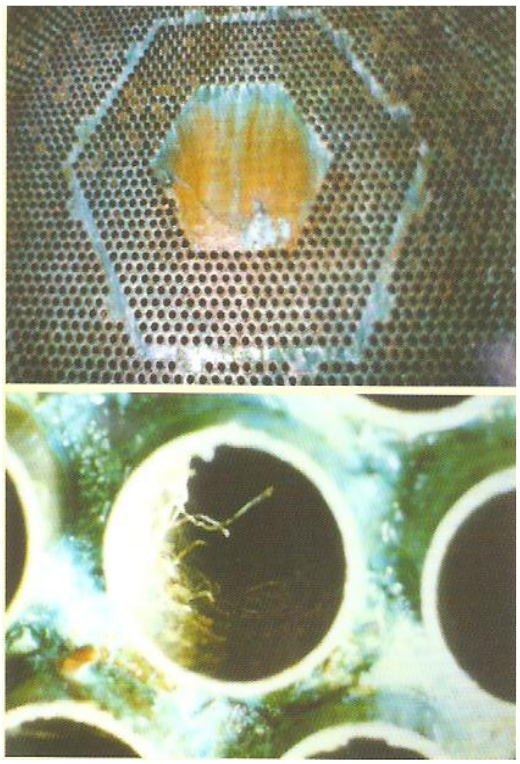
SERVICE DATA SHEET

Heat Exchanger Reconditioning – Tube Sheet

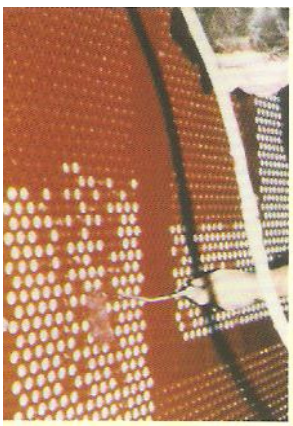
Heat exchangers during life cycle are subject to scale accumulation and galvanic corrosion.
PHENCOTE TS process resolves the tube sheet corrosion damages by the application of 3-5 mm coating of synthetic resin over the corroded part.
The tube sheet can be sandblasted prior to treatment, then the coating process insulates and encapsulates completely the tube and the tube sheets therefore being electrically insulated, cathodic protection is not longer required.
PHENCOTE is produced with duroplastic products and the profile of the system protects the tubes extremities by avoiding cavitations



A Tube Sheet
B Exchanger Tube
C Coating Thickness
1 First layer
2 Second layer
3 Third layer



Tube Sheet with Galvanic Corrosion



Primer application

Tube sheet Bunging

Tube sheet protection

When tube ends become prone to erosion and corrosion, the application of the *PHENCOTE HR60* process proved to be the most effective technology for repairing and impeding the diffusion of the phenomena into the tube.
The *PHENCOTE HR60* can be applied “in situ” by qualified technicians in very short time granting short downtime, and zero transportation cost for the overhaul of the system.

Since 1985 more than 1,000,000 km tubes ends were executed with the system, and the first application is still in use.

The Service is executed in partnership with GMA General & Maritime Applications with proprietary system

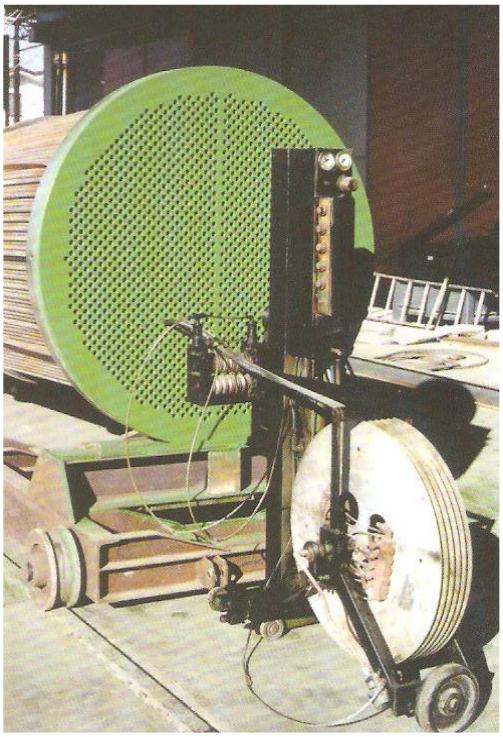
SERVICE DATA SHEET

Heat Exchanger Reconditioning – Tube Liner

Corrosion problems interest sometimes the entire length of the tubes, due to scale, dirt, material defects, bacteria, water characteristics and so on.
Tubes can be thoroughly cleaned by the application of calibrated probes that clean the scale advancing along the pipes due to a pressure applied on the head, the fluid push the probes and partially pass through, cleaning ahead and eliminating the scale.

The application of a thin film of *PHENCOTE HR60* TubeLiner technology eliminates radically all problems.

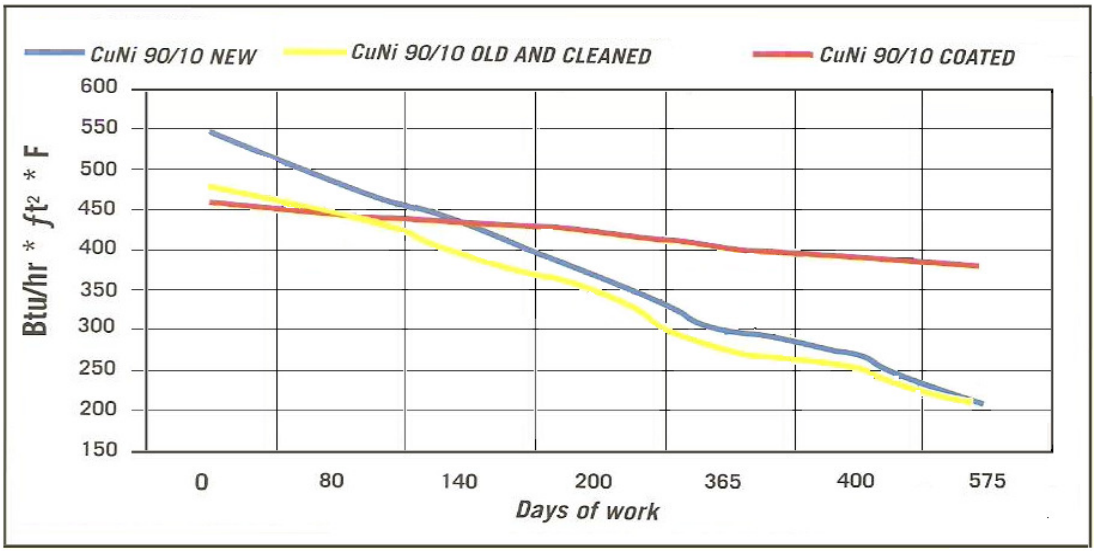
PHENCOTE HR60 TL can be applied "in situ".
The semi-automatic painting machine applies a thin film into the tube. The 50 micron coat of HR60 TL and have virtually no effect on the thermal exchange capacity of the system.
The process is extremely rapid and the complete treatment including cleaning and coating of a heat exchanger of 4000 tubes 9000mm length it's normally executed within two working weeks.



Semi automatic machine applying the Internal coating

Since 1985 more than 1,000 km of internal overall tubes were executed with the system, and the first application is still in use.

Coated tubes grant excellent thermal property losing only 5% of the performances versus new tubes, granting a system protection, long life and constant performances opposite than uncoated tubes that tend to decline the thermal exchange properties in short time periods.



The graph shows the performances over time of coated tubes

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