



Product Origin: USA

# HEAT TRANSFER EQUIPMENT SERVICES

Mun Siong Engineering is the sole distributor for Curran International in Singapore and Malaysia. Curran International provides innovative solutions to improve the reliability of fixed equipment. Curran International is known globally for its exchanger tube ID coatings that minimise tube fouling and inhibit corrosion. Curran International provides a wide range of Tubular Heat Transfer Equipment Services to restore exchangers and extend the useful service life of fixed assets.

## INDUSTRIES



Oil & Gas



Petro-Chemical



Refinery



Power Generation



Pulp & Paper



Metal

## BENEFITS

### Eliminate Corrosion

Protection of tube metal by polymer coatings will prevent oxide formation on your tube wall, extending life and eliminating unplanned maintenance of tube leaks. Coating can be used to protect against aggressive acid and alkaline.

### Eliminate Fouling

Polymer coating will reduce the surface tension of even a new tube by a factor of 50; this inhibits the ability of fouling to attach to the tube wall, and eliminating cleaning cycles.

### Maintain Heat Transfer Co-Efficiency Over

Over 70% of total heat transfer resistance for heat exchanger tubing is boundary layer fluid film and fouling. Removal of fouling and reduction of boundary layer drag of the exchanger enhances flow profile of the tube wall for the operational life, increasing heat transfer.

### Increase Flow Rates

The sleek properties of high performance coatings substantially reduce tube wall friction, or boundary layer drag. Reducing drag can increase flow rates up to 80%, pressure differentials have been reduced by 50%. Without flow degradation from corrosion and fouling these values remain constant.

## PRODUCTS AND SERVICES

### Exchanger Tube ID Coating

- Curran 1000
- Curramix 2500
- Baked Phenolic
- PFA, PTFE, PPS
- SOL GEL
- Curramix 3500

### Protective Coatings For Fixed Equipment

- Curran 500
- Curran 1000R
- Curran 1200
- Curran 1500

### Exchanger Cleaning

- Dry Blast Tube ID



Curramix 3500

## Exchanger Tube ID

Thin film exchanger coatings have been proven to mitigate fouling and corrosion that reduce asset life and cause unplanned shutdowns. Fouling leads to reduced heat transfer and production bottlenecks, increased maintenance; tube corrosion risks the integrity of exchanger mechanical performance and plant safety.

### Curran 1000

An advanced two part 100% solids epoxy coating designed for high temperature immersion service in cooling water, hydrocarbons and process streams. This coating is an organic/inorganic hybrid with superior mechanical performance; resistant in cooling water steam services to 365°F (185°C) and excursions to 400°F (204°C). Applied to 8-14 mils total DFT.

### Curramix 2500

An ultra-low DFT ambient-cure coating system designed for high temperature fouling services; possesses excellent hydrophobic & oleophobic properties, anti-coking performance, resistant to thermal cycling and is suitable for services to 1200°F (648°C). Applied to 20-40 microns total DFT.

Suitable for:

- Heat exchanger tubes, plate & frame exchangers
- Channels
- Exchanger components and crude heaters

### Curramix 3500

An advanced anti-coking ceramic coating for crude and hydrocarbon fouling; excellent hydrophobic & oleophobic properties, anti-coking performance, resistant to thermal cycling, and maintains repellency to 750°F (400 °C). Applied to heat exchanger tubes, plate & frame exchangers. Applied to 12 to 38 microns total DFT.

### Baked Phenolic

Shop applied, bake catalysed, suitable for all cooling water services, hydrocarbons, salt solutions and solvents. Immersion resistance to 365°F (185°C). Applied to 7-10 mils total DFT.

### PFA, PTFE, PPS

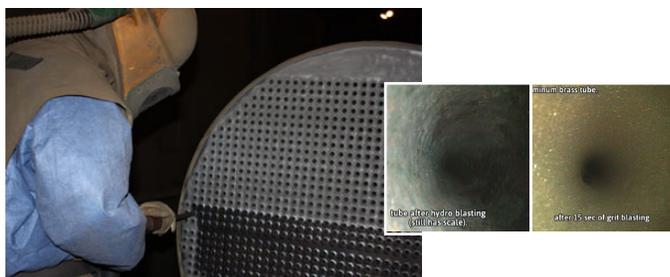
Shop applied, bake catalysed thermo-melts; superior resistance in chemicals, solvents and acids. Immersion resistant to 500°F (260°C). Applied to 8-14 mils DFT.

### Sol Gel

Ceramic SiO "backbone" hybrid with organic and inorganic components, suitable for plate & frame, and tube bundles in process critical services. Applied to 20-40 microns total DFT.

## Exchanger Cleaning

Curran International's patented dry grit blast tube ID cleaning process has revolutionised how clients clean their tube in preparation for Non-Destructive Evaluation (NDE). Compared to conventional tube cleaning, Curran cleaning offers predictable results, eliminates cleaning rework, and promotes high integrity inspection data collection.



Air coolers, shell & tube exchangers can be cleaned in-situ; dust abatement system ensures containments are vacuum tight. Curran is experienced with process air coolers, SRU reactors, boilers and condensers, all metallurgies and U tube exchangers. Technicians visually confirm cleanliness, eliminating cleaning rework!

- Great Fill Factor for NDE Probes, Better Data Accuracy
- Reduced Background "Noise" Faster Technician Analysis
- Complete Waste Containment, No Nuisance Impact

## Protective Coating For Fixed Equipment

### Curran 500

An advanced two part 100% solids epoxy. It is a high build coating that can be applied by brush or roller in one coat to repair and protect steel surfaces in wet/immersion environments while still providing excellent corrosion resistance.

Suitable for:

- Condenser, HVAC Chiller Tube Sheets, Waterboxes
- Circulation Water Piping, Channels, Marine Boxes

### Curran 1000R

An advanced two part 100% solids novolac epoxy, a brush and roll material for high temperature immersion service in cooling water, hydrocarbons and process streams. Temperature resistant in water, steam up to 365°F (185°C); tolerates excursions/steam outs to 400°F (204°C).

Suitable for:

- Exchanger Tubesheet Coating
- Tubesheet Repairs of Curran 1000T Coated Exchangers

### Curran 1200

An advanced two part (100% solids) epoxy coating designed specifically for high temperature immersion service in water and process streams (365 F, 185 °C). This coating is an organic/inorganic hybrid that exhibits state of the art coating technology; it is formulated for high build sprayable applications, up to 40 mils in a single coat. Can withstand multiple cycling and steam out events subjected to process equipment.

Suitable for:

- Process Vessels/Hydrocarbon Tanks
- Piping, Channels, Towers

### Curran 1500

Curran 1500 is an advanced two part (100% solids) epoxy coating designed specifically for high temperature immersion service in water, hydrocarbons, and process streams (up to 365 F, 185 °C). This coating is an organic/inorganic hybrid, is suitable for immersion services subjected to "cold wall" exposure, and is machinable when fully cured. Can withstand multiple cycling and steam out events subjected to process equipment.

Suitable for:

- Heat Transfer equipment and components
- Channels
- Covers
- Floating heads
- Tube-sheets
- Process vessels/ Tanks
- Piping
- Water boxes

