



Large Galvanising Furnace 'Super Kettle'

E2SL completed a project for A-Plus Galvanising in Salina, Kansas, USA which included the design, supply, installation and commissioning of a very large galvanizing kettle.

→ Aim

A-Plus Galvanising in Salina foresaw a market demand for galvanising large fabricated structures such as cell 'phone antennae towers. To satisfy this demand an unusually large galvanising kettle was required. The challenge set by A-Plus management was to provide a gas fired heating system that would sustain the operation of this very large kettle, much larger than any built before.

→ Scope of Work

Design, supply, install and commission a 'Super Kettle' including the combustion and control systems and kettle wall props. 'Super Kettle' specifications:

| | |
|------------------|----------------|
| Length: | 25m |
| Width: | 3.5m |
| Depth: | 3.75m |
| Kettle Capacity: | 2,000 Tonnes |
| Throughput: | 73 Tonnes/hour |

The combustion system was based on a multi-zone arrangement of high velocity burners configured to fire peripherally into the furnace firing lanes. This along with the carefully engineered control system ensured good temperature uniformity throughout the setting and thus ensuring maximum heat to the process. Also this minimised the Zinc to Steel interface temperature and with the props ensured extended kettle life.

The system also included the ability to stress relieve the steel kettle shell and melt the zinc load, the former being a 'one-off' operation, and the latter a repeated, but infrequent duty.

→ Benefits

The plant was commissioned and has operated trouble free. A-Plus Galvanizing's expectations have been met in full and the plant enabled them to galvanise a 40 Tonnes bridge structure, the largest ever item hot dipped. In addition the stress relieving process was successfully completed meeting ASTM requirements.

- Reliable operation
- Dramatic increase in galvanizing capacity / productivity
- Energy efficiency
- Low maintenance costs

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→ Images



Figures above show the process of dipping steel sections in the zinc bath to galvanise.

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