



Pre-Gel Infrared System helps trailer manufacturer drive efficiency improvements



The challenge

Gatormade Trailers, Kentucky, USA, manufacturer of trailers with an in-house powder coating facility, which consisted of a 70 ft (214 m) convection oven, running at 600°F (316°C). For their heaviest part (9000 lbs / 4100 kg and 53 ft / 16 m) long, the line speed required slowing from 3 f.p.m. to almost a standstill to achieve the required quality of finish, with powder flowed correctly and a consistent gloss. To find a way to get their line speed back and still maintain a high quality finish, Gatormade Trailers developed together with Air Power Manufacturing Solutions and Heraeus Vulcan Catalytic a new solution.

The new solution

- A 3-section, 24' pre-gel gas catalytic IR oven with 36 heater panels designed to accommodate the part size of the largest trailer.
- Each section controlled by a PLC control system, to enable different profiles, each program can be called up as required.
- During production breaks the complete oven can be switched to a 'low fire' condition, which reduces the power output to a minimum, but can be ramped up within 60 seconds.
- This Gas Catalytic IR Pre-gel oven was placed directly in front of the convection oven, together with an 8' (2.5 m) vestibule.

Improvements

- 16% increase in production
- Parts enter convection oven at 100°F (38°C) higher temperature
- Convection oven now running 200°F (93°C) lower
- Smoother finish with less 'orange peel'
- Higher gloss
- Hard to cure areas have smoother finish
- Big decrease in energy consumption

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