High Performance Ferritic Stainless Steel for Large-Scaled Washing Machines and Dryers

Member Company
POSCO

Category
Significant global market potential (>2.0m tons)

The Challenge
As washing machines and dryers become larger, consumers such as LG Electronics demand for us to make the material with excellent formability and good weldability with a competitive price.

1. The reduction of defect rate in ‘Drum Rear’ part after press processing.
   → Excellent Formability (superior r-value as well as anti-ridging characteristics)

2. ‘Drum Center’ productivity must be improved by the change from ‘Lock-Seaming’ to ‘Laser Welding’.
   → Good weldability with a competitive price.

Why?
In response to the increased demand for premium appliances (large-scaled washing machines & dryers), POSCO needs a customer lock-in for our development.

Needed Action
1. Competitive alloy design and process development (BAF (Batch Annealing Furnace) process omitted)
2. Optimization of hot-rolling as well as cold manufacturing conditions for improved formability and lowering ridging.

Action Review
Specific; ‘Drum Rear’ & ‘Drum Center’ of washers and dryers
Measurable; Ridging value (Wt), r-value (r-bar), elongation (%), corrosion resistance in fastened part

Quality position
Application of 430RE

Application of 430RE

Washing Machines

Dryers
Achievable; 430RE (Ridging Endurance) product is launched and expanded sales

Realistic; LG Electronics has adopted 430RE product and has been constantly purchasing it

Time-bound; From 2018 to 2020, POSCO successfully satisfied the demands of LG Electronics.

Horizontal Expansion Capability
It can be applied to large scaled washing machines and dryers that require welding type.
It can be expanded into a global consumer electronics company.

Outcome
On the POSCO side, the development of BAF-processed omitted product has enabled process cost reduction and CO2 reduction.

On the LG Electrons side, ‘Drum Center’ productivity is improved by the change from ‘Lock-Seaming’ to ‘Laser Welding’ as well as reduction of defect rate in ‘Drum Rear’.

The change of joint method in Drum Center

The appearance of joint in Drum Center after corrosion test