CASE STUDY

Pickling Line

$145k Annual Savings Through Improved Yield & Line Speed

QH EVERBLOCK™ A 3600: Combination acid inhibitor and descaling accelerator

The Challenge

A major steel producer located in the APAC region has a pickling line using HCl (3-16%) in four cascade tanks. Production includes a wide variety of steel grades including IF, high-phosphorous, high silicon and carbon steels.

The customer was having difficulty removing the scale from hot rolled silicon steel and had tried both increasing pickling temperature and reducing the line speed. However, this resulted in over-pickling and lower surface quality of carbon steels.

The Solution

Quaker Houghton proposed QH EVERBLOCK™ A 3600, a combination acid inhibitor and descaling accelerator additive that delivers high quality strip surface even on difficult-to-descale steels, while protecting base metal and maintaining line speed.

Following a full process survey, Quaker Houghton recommended process parameters and QH EVERBLOCK™ A 3600 was introduced, replacing the existing acid inhibitor additive that was in use.

The implementation immediately improved the scale removal and over-pickling issues; the pickling temperature was reduced, and line speed was increased. Since introducing QH EVERBLOCK™ A 3600, the cost saving from reducing defects and over-pickling is 8%, equivalent to 70K USD/year (Table 1).

QH EVERBLOCK™ A 3600 also enabled the acid concentrations in the pickling tanks to be lowered (Table 2). Based on annual plant production of 360 K Ton, this reduction results in an acid cost saving of 75K USD/year.

The Benefits

- More effective removal of scale
- Avoids over-pickling during stops in the line
- Brighter pickled surface
- Reduced volume of spent pickle liquor
- Reduced acid concentration on the line
- Reduced operating temperature
- Increased line speed

Table 1

PARAMETER	QH EVERBLOCK™ A 3600	PREVIOUS ADDITIVE	IMPROVEMENT
Over-pickling %	0.03	0.06	50%
Scale, IF steel %	5.5	7.2	20%
Scale, T3 steel %	0.0	1.5	100%
Pickling additive, kg/ton	0.03	0.04	21%
HCl, kg/ton	20.9	22.8	5%
TOTAL COST SAVING			**8%**

Table 2

TANK	Previous acid conc.	Acid conc. with QH EVERBLOCK™ A 3600
1	3%	2%
2	6%	4%
3	8%	8%
4	12%	12%

Quaker Houghton
Forward Together

©2024 Quaker Houghton. All rights reserved.