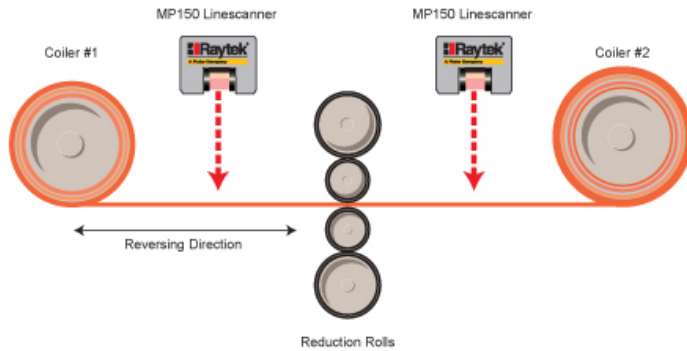


SUCCESS STORY 57

STECKEL MILL TEMPERATURE CONTROL



KEY FACTS

Industry

Steel production using a Steckel Mill

Customer's End Product

Coiled steel for automotive, military and aerospace applications

Process Temperatures

Specialty steel 760-1100°C/1400-2012°F

Q

How can you best monitor the coil temperatures in a Steckel Mill when the coils are being reduced?

A

Situation and background

A Steckel Mill, also known as a reversible finishing mill, is similar to a reversing rolling mill with one difference: two coilers enclosed in two furnaces are used to feed the material through the mill. One coiler is on the entrance side and the other on the exit side. The coilers pull the material through the mill, so the process is more similar to drawing than rolling. The coilers allow for additional heat retention and thermal consistency in the rolled piece, which in turn, produces improved uniformity throughout the rolled product. The material is fed back and forth through the mill until the desired thickness is reached, much like a reversing rolling mill. Each time the strip is reversed, it is fed through a reducing stand, which reduces the strip thickness by a nominal amount. The temperature of the strip as it enters and exits the reducing stand is useful to understand how to adjust process parameters, such as the amount of coil reduction, coil speed and the number of passes. Using a linescanner model MP1501M or MP1502M is the correct solution.

The winning solution

- A linescanner is needed for the Steckel Mill to measure the temperatures for each pass from start to finish on the coil. Originally, the customer had one spot thermometer aimed at the middle, but when they were asked to roll specialty steel for an aerospace/military application, the specification required complete temperature mapping across the entire surface of the strip. There were 11 passes, each of which had to be documented by archiving zone temperatures. The specialty steel could not be rerolled, so proper coil temperature was important.

Savings made

- Each specialty steel coil costs approximately \$100K. Coils cannot be reworked if they do not conform to metallurgical specifications. Understanding and controlling the temperature, which is a critical parameter, greatly influences the metallurgy.

PRODUCT AND BENEFITS

MP1501M or MP1502M

- Provides complete coil temperature traceability
- Optimizes coil metallurgy through precision temperature control

