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A System and Best Practice to Reduce Electrode Pin Breaks

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During EAF steel making, an electrode joint break is a highly disruptive event with significant implications to productivity and safety. It is well known, the quality of the electrode build practice is paramount to the integrity of the joint and will greatly reduce the probability of a pin break.
A poorly assembled joint has a very high risk of triggering a pin break, because it places practically all the mechanical stress on the pin. While it may seem simple to assemble a joint with a threaded pin and socket, there are a number of variables to control and several areas where it can go wrong. What is needed for the steel maker is a reliable method of achieving high quality electrode builds very consistently day-to-day. In this paper, we describe a system for quantifying the quality of electrode builds as well as best practices for the steel maker for achieving consistent electrode builds.
We will show the difference between a good and a poor build, with several real-life examples. We will also illustrate how the implementation of a system and best practices reduces pin breaks and improves the consistency of operations.
When properly assembled, an electrode joint will have the necessary integrity to withstand EAF conditions and provide the best chance for optimal productivity and safety.

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