

Advancements in Steelmaking Technology

In 1916, Unpaku Steel, Ltd. was renamed Yasugi Steel Manufacturing, Ltd. In the early 1900s, they sought new innovations in steelmaking, and their efforts produced two technological advancements for making high-grade steel: the adoption of electric arc furnaces and the use of iron sand to create sponge iron.

In 1928, following a year of intensive research, company president Kudō Haruto (1878–1963) developed a method for making sponge iron from iron sand. After being pulverized and sorted, the highest-grade iron sand was compacted into 3-centimeter balls. The balls and a reducing gas were then added to a rotary furnace and heated to around 900 degrees Celsius. In contrast to previous methods, the iron sand was directly reduced to sponge iron without first being melted.

The sponge iron was converted to steel using an electric arc furnace. Once the sponge iron had melted and the slag was drained out, the molten metal was immediately dumped into a pool of water. This process created small pellets of steel, known as “steel shot,” that were later processed into Yasugi Specialty Steel. The replica electric arc furnace on display is modeled after a furnace first used at the Kisuki Ironworks in 1930.