

A 3D architectural rendering of a steel mill's interior. The scene shows a complex network of steel structures, including walkways, railings, and large industrial vessels. In the center, a large, glowing orange molten metal ladle is being lifted by a yellow crane. The lighting is bright, highlighting the metallic surfaces and the intense heat of the molten metal.

Our flex mill™ will be one of the most energy-efficient steelmaking facilities in the world. Even more notable is the fact that Big River Steel is the only North American mill to connect an electric arc furnace (EAF) with a Rührstahl - Herraeus (RH) degasser, achieving low carbon and nitrogen levels required by the most demanding steel grades.

Electric Arc Furnace (EAF)

Big River's melt shop contains a 165-ton EAF with a planned tap-to-tap time of less than 38 minutes.

Our direct current (DC) furnace has a maximum power rating of 160 kilo amps and 1100 volts, equal to 176 megawatts of electricity.

The EAF has a top feed conveyor system which provides the ability to direct charge up to 100% scrap substitute material (HBI, DRI etc.). This allows us to produce grades that have higher internal steel cleanliness demands and also is key for achieving very low residual levels.

Rührstahl - Herraeus Degasser

The RH degasser uses snorkels along with an argon lift to recirculate the molten metal. This creates a more homogenous heat as the metal turns over every 1.1 minutes.

The forced decarburization system produces world-class low residual levels of carbon, nitrogen and hydrogen. This allows us to produce product categories only previously produced by integrated mills and makes Big River the only truly low carbon /nitrogen flex mill in the world.

A ladle treatment station (LTS) can further achieve final chemistries as the last stage for those grades demanding even tighter chemistries before going to the caster.