

Berry Metal Lime Injection System Up and Running at Big River Steel with 1,000 lb. /minute Flow Rates.

Berry Metal Company has successfully commissioned a newly developed, state-of-the-art lime injection system at Big River Steel. The scope of the project included the design and supply of a comprehensive technology package for pneumatic lime injection at BRS's greenfield facility in Osceola, AR. The system, which was installed as part of the BRS Phase I EAF, was successfully commissioned in May of 2020. Berry has also been contracted to install a similar system when BRS completes its Phase II EAF in 2021.

The custom designed system hit the targeted flow rate of 1,000 lbs. /min for Dolomitic and HiCaI, which is one of the highest flow rates in North America.

This new lime injection technology provides two critical advantages.

- First, it allows for successful flow of various gradients and sizing of lime particles from lime dust up to 7/8" nominal sizing without clogging.
- Second, the Lime Injectors provide an accelerated punch into the bath increasing yield and efficiency in the steel making process.

The system, which includes all components from the outside transporter to the injector, was installed and cold commissioned while the mill was running so that no normal operations were reduced. All calibrations and test testing was performed on scheduled downtime.

Berry formed an exclusive partnership with Nol-Tec Systems to incorporate their patented Air Assist Injection and Transport Technology, enhancing Berry's complete Lime Injection System from silo into the furnace via Berry's patented Lime Injectors/Burners.



The Berry Metal high efficiency, high volume pneumatic lime injection system was recently commissioned at BRS.

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The system is completely self-contained and sealed, reducing lime consumption and yield losses that typically occur in transport, delivery and at injection points. By preventing lime dust from entering the work environment, plant cleanliness is also improved.

“The pneumatic lime system will give BRS operators fast and precise control of their lime mix so operators can better utilize raw materials in the melting process,” said George Boy, President of Berry Metal Company. “The system features BMC proprietary accelerator nozzles that increase carbon jet velocity by 18-20%, as well as air “boost” to enhance lime efficiency and minimize line clogging and maintenance. Our system can inject a large volume of lime in a very short time frame, with improved homogenous dispersal throughout the heat.”

The Berry system, which encompasses Outside Conveying, Storage, Inside Conveying and EAF Injection of lime, will improve BRS’s flexibility in controlling slag characteristics and help with overall improved steel process performance and efficiency.

“This lime injection system allows steel producers to have fluctuations in their lime sizing, which has been the primary problem with clogging and related loss of productivity in existing lime injection systems. We are very pleased with the results of this key installation. It further expands our comprehensive offering of lime and carbon solutions, from storage to injection into the furnace.” said Boy.

The Berry portfolio includes chemical energy, lime injection, carbon injection, ladle and tundish preheaters, cooling panels, leak detection systems, repairs, and engineering in and around the furnace and caster areas of the EAF.