



GETTING ANSWERS FROM

OUR TEAM OF EXPERTS

Q: What are the most important sustainability initiatives in the steel industry today?

From my experience and recent news, reducing CO2 emissions and eliminating waste are the most sought-after sustainability goals in the current steel market. To achieve CO2 reduction, companies are exploring alternative methods to reach carbon neutrality in their steel production processes.

Q: What impact does lime injection have on sustainability?

Lime injection is an excellent method for reducing waste emissions. By transitioning from adding lime overhead into the charging bucket to using lime injection, the environmental waste of lime is virtually eliminated. This ensures that nearly all the lime is utilized in the steel-making process rather than being lost to the atmosphere, thereby reducing lime demand. In simple terms, lime injection uses almost 100% of the lime introduced into the furnace, benefiting steel customers by eliminating lime waste.

Additionally, introducing lime directly into the furnace, rather than overhead, results in better slag formation since lime acts as a flux in steel production. As someone once told me, the goal is to create the best slag, with steel being a byproduct.

Lime injection also offers both energy and time-saving benefits as well. With a fully automated lime injection system, steel customers gain better control over the slag chemistry. Directly injecting smaller sized lime into the bath accelerates the melting process, which saves energy in the furnace and in some cases, can lead to more heats and, consequently, increased steel production for the company.

Q: How does lime injection reduce lime consumption?

By using lime injection, nearly 100% of the lime from the silo is utilized. Unlike the overhead addition method, where lime fines are lost to the environment and the baghouse, lime injection operates as a closed system, preventing environmental exposure. This means customers use most of the lime they purchase, rather than losing it through overhead bucket feeding. Directly injecting lime into the furnace creates a more efficient mix, as the lime is introduced straight into the bath. Overall, lime injection reduces lime usage by eliminating wasted fines and ensuring direct injection into the mix.

Q: How does lime injection protect the refractory?

Protecting the refractory in the furnace is crucial. Dolomitic lime is used for this purpose because the magnesium oxide in the dolomitic lime reduces the tendency of slag to dissolve the refractory material. This can prevent melt throughs and protect the refractory, resulting in fewer maintenance outages for steel customers. Directly injecting the lime into the furnace creates a more efficient mix, offering better protection for the refractory.



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Eric has over 14 years of research and development experience, and a track record for helping customers optimize use of lime and limestone in their applications. He currently serves as the Laboratory Supervisor at our Carmeuse Innovation Center.

Do you have a question for Eric, or would you like to learn more about our lime injection solutions?

LET US KNOW YOUR QUESTION

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