

“In India, the use of alternative fuel is at a very nascent stage.”

Ganesh W Jirkuntwar, Senior Executive Director & National Manufacturing Head, Dalmia Cement (Bharat) Limited, analyses the effects of raw materials on emission and efforts taken by his company to conserve the environment.

Tell us about the efforts taken by your organisation to better the environment in and around the manufacturing unit.

Our company has taken a number of efforts to better the environment in order to maximise the proportion of blended cement in our product basket, promote the usage of alternative supplementary cementitious materials recommended by IS for cement and increase the usage of alternative fuels.

We have also installed the appropriate systems to co-process wastes judiciously and follow a pre-processing system for alternative fuels. We have implemented a waste heat recovery system and are now able to tap into solar energy.

How does the use of environmentally friendly fuels or raw materials impact the profitability of the organisation?

Dalmia Bharat Limited follows the business philosophy of ‘Clean & Green is Profitable and Sustainable.’ By using environmentally friendly



Ganesh W Jirkuntwar, Senior Executive Director & National Manufacturing Head, Dalmia Cement (Bharat) Limited



fuel and raw materials, we have managed to create an impact on our triple bottom line: social, environmental as well as financial performance. A proper strategy for selection and adopting environment-friendly initiatives that act as fuel and raw materials is expected to significantly boost the organisation's profitability.

Large volumes of legacy municipal waste are available at various municipal dump sites, that can be converted to Refuse Derived Fuel (RDF) and can be used by Indian cement Industries. Cement industries are currently facing a tough time due to the steep rise in fuel prices. The usage of RDF and other alternative fuels will help the cement industry in optimising its fuel cost.

Tell us about the types of blended cement and their composition manufactured by your organisation. How does the strength of blended cement differ from OPC?

At Dalmia Cement (Bharat) Limited, we manufacture PPC, PCC and PSC as blended cements. The composition of blended cements is decided strictly in accordance with BIS norms.

The overall strength of blended cement is comparable with OPC 43 Grade. However, Indian Specification (IS) recommends that blended cement should meet the strength Norms of OPC 33 Grade.

What are the key supplementary materials used to manufacture blended cement?

The key supplementary materials used to manufacture blended cement are pulverised fuel ash, known as flyash, and granulated slag.

Tell us about the impact blended cement creates on the environment.

Blended cement has higher durability and better resistance towards the aggressive environment of chloride and sulphate. Additionally, less clinker is being consumed to produce the same volume of cement, resulting in raw materials savings, energy savings (thermal and electrical), reduced CO₂ emission and waste utilisation.

How does the use of alternative fuels impact the productivity and efficiency of the manufacturing process?

The use of alternative fuels leads to a marginal increase in overall heat consumption. In case a preheater fan and other equipment are being used at their full capacity, usage of alternative fuels may result in a marginal reduction of clinker throughput.



Investment in the research and development of alternative fuels can positively impact the cement industry with its impact.

What role does technology play in creating blends that help curb emissions and make the environment better?

Technology helps reduce CO₂ emission as a result of low clinker consumption in blended cement compared to non-blended cement.


What are the major challenges your organisation is facing to curb the emission rate?

Although cement manufacturing is an energy-intensive process, during clinker manufacturing, the emission of process CO₂ is inevitable. The only way to curb the emission significantly as of now helps replace fossil fuels with alternative fuels.

The major challenges in increasing the usage of alternative fuels include adopting RDF which is the only alternative fuel and is available in large volumes. However, the quality of RDF being supplied in India is very poor and inconsistent. Additionally, high ash content and moisture in RDF restrict the higher usage of RDF.

In India, the use of alternative fuel is at a very nascent stage and cement players need to invest in R&D on understanding its impact on cement and corrective actions

How do you foresee the future of emissions created by the cement industry?

The cement industry is putting in unrelenting efforts to reduce the Cement Clinker Ratio (CC Ratio), higher usage of alternative fuels and increased the usage of renewable energy. This will reflect in their carbon footprint figure in the next few years. We expect that, in a few years, newer technological adoption such as carbon capture, green hydrogen usage, rotodynamic heater etc. will also decide the future of emissions by cement industries. 

- Kanika Mathur