



CASE STUDY: STAREX 300 in Portland Slag Cement

The plant being discussed produces 600 TPD of PSC through a 30 TPH cement grinding mill in the Eastern part of India. The plant is located very close to a blast furnace and has access to abundant slag. The landed cost of slag for the plant is quite low.

The content of slag is limited in PSC largely by its impact on the early age strength of the resulting concrete. STAREX thus offers a very complimentary property with its positive impact on cement strength.

After multiple tests conducted at lab scale and plant scale, the benefits of dosing STAREX in the cement mill were clearly established.

The impact of the additive on cement quality and clinker/slag content is summarized in Table 1. The Table shows that STAREX has increased slag content by five per cent and improved cement performance at all stages of strength development. These physical benefits in turn have converted into commercial benefits - reduced cost of production and improved market response, as well as environmental benefits - reduced carbon footprint.

Table 1

STAREX dosage	Mill Output	Clinker	Gypsum	Slag	Blaine	Compressive Strength (Mpa)			
						1-day	3-day	7-day	28-day
%	TPH	%	%	%	M2/kg				
Blank	30	55	5	40	390	11	25	34	51
0.03	30	50	5	45	392	12	27	35	53

Reduced cost of production

The addition of STAREX allows the plant to add five per cent more slag while reducing the clinker content by the same amount. This not only completely offsets the cost of STAREX but also offers additional cost savings.



Improved market response

Even after an increase in slag content and reduction in clinker content, the plant is successfully able to deliver to an improved cement quality. The strength at all ages is higher and is gradually improving the brand image of the cement produced by this plant.

Reduced carbon footprint

Apart from the above mentioned benefits that directly impact the profits of the company, STAREX also delivers on a key environmental parameter, which is expected to gain increasing significance in the times to come - reduced carbon footprint per ton of cement production. Every ton of clinker produces 440kg of CO₂. A reduction in clinker content by five per cent points in PSC translates into 22kg of CO₂ saved per tonne of cement.