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## Chapter Fresh and Hardened Properties of Pastes and Concretes with LC3 and Its Economic Viability



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## Fresh and Hardened Properties of Pastes and Concretes with LC3 and Its Economic Viability

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and Its Economic Viability

Properties of Pastes and Concretes with LC3 and Its Economic Viability

Pranav Desai · Amith Kalathingal

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The study is focused on the evaluation of fresh and hardened properties of pastes and concrete with LC3. The plastic and hardened properties of LC3 are analyzed and compared with OPC 53. A comprehensive study is done on identifying the optimum admixture type for best LC3 paste fresh state properties and compared with OPC 53, PPC, PSC, OPC + 50% PFA (high-volume fly ash) and OPC + 70% GGBS (high-volume GGBS) pastes at varying water–binder ratios (w/b). Fresh and hardened properties of LC3 concretes are analyzed and compared with OPC, PPC, PSC, high-volume fly ash, and high-volume GGBS concrete. The concrete study is focused on achieving LC3 concrete fresh properties with regard to 160 million publication pages. The durability factors like resistance to chloride ion penetration, water permeability, and water absorption are studied on LC3 concrete and compared with OPC, PPC, PSC, high-volume fly ash and high-volume GGBS concrete. The study also compares material • 25+ million members  
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Join for free → concrete in major Indian metro cities and arrives at a landed basic price for LC3 (in terms of percentage of OPC price) in these cities for commercial viability of LC3 use in Indian ready mix industry.

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31 %	mbs)	3	2.489	2.229	1.756
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460 minutes		6	3.253	2.786	2.355
3.11		8	3.413	2.945	2.514
4%		10	3.694	3.184	2.794
Pa	1	12	3.895	3.383	2.914
54.1	7	24	4.037	3.702	3.353
		30	4.037	3.742	3.353

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In the construction field, lot of improvement in sustainable development is going on from last few decades, mainly use of pozzolanic materials are increasing day by day for the production of cement. On the other hand a lot of anthropogenic CO<sub>2</sub> gas is liberating in to atmosphere while manufacturing ceme...

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Variation 1 (V1)
95% clinker, 5% gypsum
65% clinker, 30% fly ash, 5% gypsum
35% clinker, 40% calcined clay, 20% limestone, 5% gypsum
Rs.800/tonne

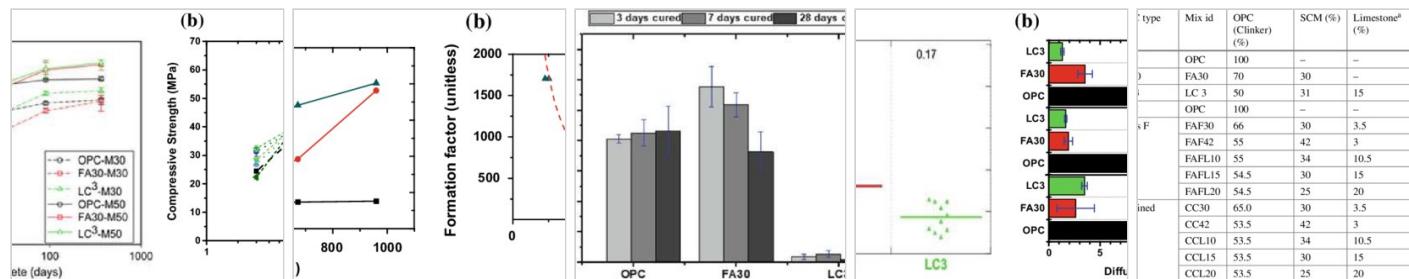
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 Shiju Joseph ·  S. Bishnoi ·  Soumen Maity

An international study investigating the suitability of a new ternary blend of crushed limestone, calcined clay and Portland cement clinker (LC<sup>3</sup>), has been ongoing for the last few years. While the larger study looks at various technical and environmental aspects of such a cement, the current article presents an...

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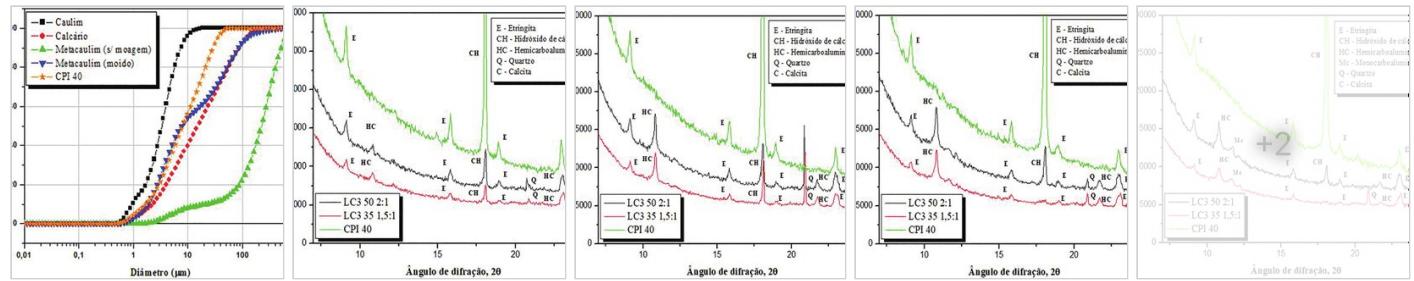
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Manu Santhanam · Yuvaraj Dhandapani · Ravindra Gettu · Radhakrishna Pillai

In the light of the increasing demand for cement in construction and dwindling reserves of cement-grade limestone, the blend of ground limestone and lower grade calcined clay has emerged as a potential candidate for large volume cement replacement. Studies of such ternary blended systems in paste and...

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Matéria (Rio de Janeiro)

Euler Santos · Euler Santos Arruda Junior · Márcio Santos Barata

The use of mineral admixtures as a partial replacement of clinker in Portland cement has been one of the main strategies for reducing CO<sub>2</sub> emissions by the global cement industry. However, the availability of ground blast furnace slag and fly ash does not supply the demand. In the Amazon region, the kaolin...

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Strength and durability properties of SCC developed using limestone calcined clay cement (LC3)

Article

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