## Founded in 1927

Published by ACC Limited, L.B. Shastri Road, Near Teen Haath Naka, Thane (W) 400604.

The contents of this journal are contributions of individual authors, and reflect their independent opinions, findings, conclusions and recommendations and do not necessarily imply that they reflect the views of the Publisher, ACC Limited. The Publishers are not liable for any damage or inconvenience, caused to anyone who may have acted on the information contained in the publication.

The Indian Concrete Journal, ISSN 0019-4565 Copyright © 2015 ACC Limited.

ACC Limited - Registered Office – Cement House, 121, Maharshi Karve Road, Mumbai 400 020.

The copyright, database rights and similar rights in all materials published in The Indian Concrete Journal are owned by ACC Limited. None of this material may be used for any commercial or public use, other than for the purpose of fair dealing, research or private study, or review of the contents of the journal, in part or in whole, and may not be reproduced or stored in any media for mass circulation without the prior written consent of the publisher.

## PUBLISHING / EDITORIAL / ADVERTISEMENT & CIRCULATION OFFICE

The Indian Concrete Journal

ACC Limited

L.B. Shastri Road,

Near Teen Haath Naka

Next to Eternity Mall

Thane (West) 400 604,

Maharashtra, INDIA.

Tel: 00-91-22-33027646

Website: www.icjonline.com

E-mail: info@icjonline.com

icj@acclimited.com

Editor: Ashish Patil Editorial Team: Ulhas Fernandes S.M. Abbas



Cover image sources: www.kemerix.com.tr www.extremetech.com



December 2015, Volume 89, Number 12

## TECHNICAL PAPERS

15

Methodology for the repair of beam-column joint

Manoj Musale, Akshat Kedar, Gaurang Vashist and M.A. Chakrabarti

23

Use of treated domestic effluent as mixing water for concrete: Effect on strength and water penetration at 28 days

Devendra Swami, Kaustav Sarkar and Bishwajit Bhattacharjee

31

Effect of partial utilisation of lime mud waste on strength of concrete Sanjay Aggarwal and Sanjay K. Sharma

39

Artificial neural network based graphical user interface for steel fibre reinforced concrete flexural member

Anand Mehta and Atul K. Desai

## **FEATURES**

04

**EDITORIAL** 

06

LETTERS TO THE EDITOR

08

**NEWS & EVENTS** 

36

DISCUSSION FORUM: Rationalising acceptable levels of damage for structures designed as per codes IS 456, IS 1893 and IS 13920

44

POINT OF VIEW: Modeling of compressive and flexural strength for incremental replacement of natural sand with artificial sand in concrete Raiendra P. Mogre, Dhananiay K. Parbat and Shirish D. Dhobe

53

POINT OF VIEW: Suggested quality assurance measures at major project sites involving concrete construction

Kartik Chandra Ta