

Dear Readers,

We are pleased to share with you papers covering research on "Additions or improvements in design code provisions". This edition is guest edited by Prof. Bijily Balakrishnan.

Prof. Bijily Balakrishnan is an Assistant Professor in the Department of Civil and Environmental Engineering, Indian Institute of Technology (IIT) Tirupati. She was awarded a PhD degree from the Indian Institute of Technology (IIT) Madras. Her research interests are primarily in the area of the behavior of reinforced and prestressed concrete structures and bridges and has contributed to this cause consistently.

While we thank her for curating this edition, we also hope you enjoy reading this edition and look forward to your feedback!

Production Editor  
Indian Concrete Journal



Dear Readers,

I am pleased to bring out the new edition on the theme "Additions or improvements in design code provisions".

The applications of research outputs from academics to industry or vice versa will be quickly spread through alterations in the design code provisions. The design code provisions should therefore be revised from time to time to include validated research developments. The use of new materials, changes in the loading conditions, improvements in the analysis and design methodology, etc., for various structural elements or structures can possibly lead to updating of code provisions, thereby increasing the reliability. New insights can also be derived from research on the existing code provisions. Consistent and mindful efforts of Researchers are essential for revising design standards. The articles in the current edition are more or less oriented on this theme.

The first article brings insight into existing code provisions in IS: 456. The theoretical study evaluates and compares the flexural design based on a balanced section or under-reinforced section. The study's primary outcome is that the cross-sections with a minimum area of tension reinforcement as per IS: 456 lead to unacceptable plastic rotations, and an expression for minimum steel has been proposed. This may lead to the revision of existing code provisions.

The next paper is related to the structural behaviour of nonconventional construction materials. The article presents experimental results of 36 ternary blended ferrocement plates. The parameters considered in the study are the shear span-to-depth ratio and percentage of reinforcement. An empirical equation has been proposed to estimate the shear strength of triple-blend high-grade ferrocement elements. This research may lead to formulation of design guidelines for ferrocement plates.

Another article deals with the behaviour of reinforced concrete (conventional construction material) columns subjected to temperature load, which is not extensively addressed in the design standards. The ultimate load capacity of the columns and load-deformation behaviour of 32 RC columns subjected to temperature change of 100 to 800°C is studied in this paper.

The following article discusses a construction methodology using the packaged dry concrete mix for remote location construction work. A comparison of the slump and compressive strength of conventional concrete and packed concrete mix indicates that the packed concrete mix can be an effective alternative in the construction industry.

The last article on interaction diagrams for rectangular columns with high-strength concrete will be an addition to the existing code provisions for reinforced concrete columns. A methodology for arriving at the design aids in the form of interaction curves of high-strength concrete columns subjected to axial load and bending moment has been suggested.

Joyful reading and advance New Year wishes!

Bijily Balakrishnan

## ADDENDUM

This is in reference to paper published in the ICJ : Mushtaq, S. M., Rajput, T., Basu, D. (2022). "Cement-superplasticizer compatibility and flow properties of binder paste and mortar using marsh cone and flow table method", *The Indian Concrete Journal*, Vol. 96, No. 9, pp. 20-33, please find addendum information.

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